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SUPPORTING STUDY FOR THE FITNESS CHECK ON THE CONSTRUCTION INDUSTRY

SECOND PROGRESS REPORT REVISED

Prepared for DG Internal Market, Industry, Entrepreneurship and SMEs

15 April 2016
Contract Number SI2.705693

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ABBREVIATIONS AND ACRONYMS

AVCP	Assessment and Verification of Constancy of Performance
BAU	Business-As-Usual
B2B	Business to Business
CCBA	Cumulative Cost and Benefits Assessment
CE	European Conformity
CEN	European Committee for Standardisation
CPD	Construction Product Directive
CPR	Construction Product Regulation
DG GROW	Directorate General for Internal Market, Industry, Entrepreneurship and SMEs
DOP	Declaration of Performance
EAD	European Assessment Document
EDD	Eco-Design Directive
eDOP	Electronic Declaration of Performance
EED	Energy Efficiency Directive
EFTA	European Free Trade Association
ELD	Energy Labelling Directive
EPBD	Energy Performance of Buildings Directive
EQ	Evaluation Questions
EU	European Union
FPC	Factory Production Control
FTE	Full Time Equivalent
hEN	Harmonised Standard
IA	Impact Assessment
ITT	Initial Type Testing
LPD	Late Payments Directive
MS	Member State
NACE	Statistical classification of economic activities in the European Community
NEEAP2	Second National Energy Efficiency Action Plan
NEEAP3	Third National Energy Efficiency Action Plan
NZEB	Nearly Zero Energy Building
PA2B	Public Administration to Business
PCPC	Product Contact Points for Construction
PQD	Professional Qualification Directive
RACER	Relevant, Accepted, Credible, Easy to monitor, Robust
RESD	Renewable Energy Sources Directive
SD	Services Directive
SME	Small and Medium-sized Enterprises
ToR	Terms of Reference

1 INTRODUCTION

This Second Progress Report (the 'Report') is the third deliverable under the Contract No. SI2.705693 for a 'Supporting Study for the Fitness Check on the Construction Industry in the policy areas of Internal Market and Energy Efficiency' (the 'Study'). The Report is submitted to the European Commission - Directorate General for Internal Market, Industry, Entrepreneurship and SMEs (DG GROW or the 'Client') by a grouping of consulting firms and research institutes led by Economisti Associati and comprising the Centre for European Policy Studies (CEPS), Milieu Ltd, the Building Performance Institute Europe (BPIE), and the Danish Building Research Institute (DBRI) - Aalborg University (collectively referred to as the 'Consultants'). The Report builds upon the work carried out during previous phases and presented in the Inception Report[1] and the First Progress Report.[2]

1.1 Nature of the Study

Purpose and Objectives. The Study is intended to support the ***Fitness Check for the Construction Sector*** undertaken by the Commission and expected to be completed by the end of 2016. In particular, the Study pursues the ***triple objective*** of: (i) assessing "the cumulative impacts (both in terms of costs and benefits) that a number of pieces of EU legislation have on the construction sector", and in particular on its competitiveness and sustainability; (ii) evaluating "the efficiency, the coherence, the effectiveness, the relevance and the EU added value of the selected EU legislative texts … with respect to the achievement of the objectives for a more competitive and sustainable construction sector"; and (iii) identifying "areas for regulatory burden reduction [and] possible improvement of EU legislation".[3]

Scope. The Study focuses on "the activities related to the construction and the renovation of residential and public buildings" (Specifications, page 12). In practice, the Study concentrates on the ***construction sector***, encompassing the construction and renovation of buildings and specialized construction activities (NACE Divisions 41 and 43), but with the exclusion of infrastructure works. In order to provide a comprehensive picture of the effects of EU legislation, the Study also covers the other sectors in the construction value chain, i.e. the manufacture of construction products (encompassed under NACE Sections B and C), and construction-related professional services, i.e. architects, engineers, or energy auditors (NACE code M71.

Coverage. The Study reviews the EU legislation concerning two policy areas, ***Internal Market and Energy Efficiency***, with focus on "the most relevant texts … which have a significant impact on the construction sector's competitiveness and sustainability." (Specifications, page 12). A parallel study is currently being completed by another Consultant on the policy areas of health and safety and environmental policies. The analysis encompasses the existing EU legislation in the two areas as well as the previous legal texts that have been in force during the ***2004 – 2014 period***. Based on the legal screening conducted during the previous steps, Study focuses on ***nine pieces of legislation*** currently in force as well as their predecessors in effect during the relevant period. These legal acts, hereinafter cumulatively referred to as the 'Retained Acts', include:

- The Construction Products Regulation (CPR)[4] and its predecessor Construction Products Directive (CPD);[5]
- The Professional Qualifications Directive (PQD),[6] including the 2011 amendments;[7]
- The Services Directive (SD);[8]

[1] Inception Report (Revised), 19 October 2015. The Inception Report was formally approved by the Client on 23 October 2015.
[2] First Progress Report (Revised), 15 January 201. The Inception Report was formally approved by the Client on 5 Febuary 2016.
[3] Technical Specifications, page 10. In the remainder of this Report, further quotations from this document will simply make reference to Specifications and the relevant page number.
[4] Regulation No 305/2011 of the European Parliament and the Council laying down harmonized conditions for the marketing of construction products.
[5] Council Directive 89/106/EEC of 21 December 1988 on the approximation of laws, regulations and administrative provisions of the Member States relating to construction products.
[6] Directive 2005/36/EC of the European Parliament and the Council on the recognition of professional qualifications
[7] Directive 2013/55/EU of the European Parliament and of the Council amending Directive 2005/36/EC on the recognition of professional qualifications and Regulation (EU) No 1024/2012 on administrative cooperation through the Internal Market Information System.
[8] Directive 2006/123/EC of the European Parliament and the Council on services in the Internal Market.

- The Late Payments Directive (LPD)[9] and its predecessor Directive 2000/35/EC;[10]
- The Energy Efficiency Directive (EED),[11] plus its predecessor Directive 2006/32/EC;[12]
- The Energy Performance of Buildings Directive (EPBD 2010)[13] and its predecessor Directive 2002/91/EC (EPBD 2002);[14]
- The Ecodesign Directive (EDD),[15] and its predecessor Directive 2005/32/EC;[16]
- The Energy Labelling Directive (ELD)[17] and its predecessor Directive 92/75/EEC;[18] and
- The Renewable Energy Sources Directive (RESD).[19]

Components. Operationally, the Study is articulated into ***eight tasks***, to be implemented broadly in a chronological order.[20] These tasks include:

- The screening of the EU legislation on Internal Market and Energy Efficiency to identify the most relevant acts (Task #1 – Legal Screening);
- The development of a methodology for assessing the effects (costs and benefits) of the EU legislation (Task #2 – Development of Methodology);
- The implementation of the above methodology (Task #3 – Fact Finding);
- The attribution of costs and benefits and the analysis of shortcomings in the EU legislation (Task #4 – Attribution of Effects & Shortcomings);
- The assessment of the effectiveness, efficiency, coherence, relevance and added value of EU legislation (Task #5 – Overall Assessment);
- The provision of support to the Commission for the implementation of a public consultation (Task #6 – Public Consultation);
- The formulation of conclusions and proposals aimed at addressing possible shortcomings in EU legislation (Task #7 – Conclusions and Proposals);
- The preparation of the final report (Task #8 – Reporting).

1.2 Nature of This Report

The results of the work carried out under Tasks #1, #2, and the preliminary results under Tasks #3, #4 and #6 were presented in the previous reports. This Report consists of three elements, namely: (i) the final results of ***fact finding work*** carried out under Task #3 and of the related ***analytical work*** performed under Task #4; (ii) the presentation of work on the ***coherence of EU legislation***, which constitutes an element of the work envisaged under Task #5; and (iii) a further refinement of the documents for the implementation of the ***Open Public Consultation*** envisaged under Task #6.

Fact Finding and Analytical Work – Tasks #3 and #4. Fact finding work covered the whole set of EU legislation to be analysed. In particular, it provides the analysis of the acts that were not covered in the previous reports, namely the SD, the EED, the RESD, and parts of the EPBD (namely the Energy Performance Certificates and the accreditation/certification of inspectors). Furthermore, the analysis has been refined and finalised with respect to the four acts that were already presented in the First Progress Report, namely the

[9] Directive 2011/7/EU of the European Parliament and the Council on combating late payment in commercial transactions.
[10] Directive 2000/35/EC of the European Parliament and of the Council on combating late payment in commercial transactions.
[11] Directive 2012/27/EU of the European Parliament and the Council on energy efficiency.
[12] Directive 2006/32/EC of the European Parliament and of the Council on energy end-use efficiency and energy services and repealing Council Directive 93/76/EEC.
[13] Directive 2010/31/EU of the European Parliament and the Council on the energy performance of buildings.
[14] Directive 2002/91/EC of the European Parliament and of the Council on the energy performance of buildings.
[15] Directive 2009/125/EC of the European Parliament and the Council establishing a framework for the setting of eco-design requirements for energy-using products.
[16] Directive 2005/32/EC of the European Parliament and of the Council establishing a framework for the setting of ecodesign requirements for energy-using products and amending Council Directive 92/42/EEC and Directives 96/57/EC and 2000/55/EC.
[17] Directive 2010/30/EU of the European Parliament and the Council on the indication by labelling and standard product information of the consumption of energy and other resources by energy-related products.
[18] Council Directive 92/75/EEC on the indication by labelling and standard product information of the consumption of energy and other resources by household appliances.
[19] Directive 2009/28/EC of the European Parliament and of the Council on the promotion of the use of energy from renewable sources and amending and subsequently repealing Directives 2001/77/EC and 2003/30/EC.
[20] The Specifications envisaged nine tasks. However, as agreed at the Kick-Off Meeting, the analysis of policy options for reform (Task #6) will be carried out by the Commission. The tasks were re-numbered accordingly.

CPR/CPD, the PQD, the EPBD, and the LPD. Fact finding work involved the collection of information from primary and secondary sources, with the review of a variety of documents of various nature (from technical papers on the costs of energy efficiency measures to surveys on payment delays) as well as interviews with stakeholders and firms (see below). Retrieval of information was followed by analytical work, which led to the quantification of the costs and benefits attributed to the EU legislation. The results of this work are presented in ***Part A***.

Analysis of Coherence – Task #5. This Report already includes the assessment of one of the ex post evaluation criteria, namely coherence. The assessment concerns the relations within three blocks of related acts: (i) EU legal instruments establishing product or labelling requirements, that are the CPR, the EDD, and the ELD; (ii) legal instruments on energy efficiency, that are the EED, the EPBD, and the RESD; and (iii) legal instruments enhancing mobility of professionals in the EU and free movement of services, that are the SD, the PQD and the LPD. Furthermore, the analysis of other potential coherence issues between these EU legal instruments beyond the blocks mentioned above is also presented. The work relied on the legal analysis of the EU pieces of legislation, secondary sources (such as Impact Assessments, Evaluation Reports), and the information retrieved via interviews with firms, industry associations, and public authorities.

Public Consultation – Task #6. Work under task #6 involved the further refinement of the documents to be used for the public consultation namely: (i) the Background Note illustrating the nature and purpose of the consultation; and (ii) the Questionnaires to be used for eliciting comments from interested parties. Three questionnaires were designed for various classes of respondents: (i) citizens; (ii) professionals in the construction sector; and (iii) public authorities. The refinement of these materials involved extensive interactions with the Client and with the consultant in charge of the Parallel Study, namely concerning the drafting of various versions of the questionnaire. The results of this work, incorporating the latest agreements reached with the Client, are presented in ***Part C***.

1.3 Status of Work and Operational Aspects

Status of Work. As of 15 March 2016, fact finding has been completed in all the 10 Member States (MS) to be analysed in detail. Some information was also collected in other countries, in particular from stakeholder associations and professional bodies. In addition, the Consultants attended four events organized by business associations/institutions.[21] The Inception Report envisaged 100 interviews, of which 10 with national authorities, 20 with industry associations, and 70 with companies. As of 15 March 2016, ***a total of 133 interviews were held***, of which 10 with national authorities, 41 with industry associations, and 82 with firms. In addition to these interviews, two surveys not envisaged in the Inception Report were deployed: (i) an online questionnaire with associations and other stakeholders active in the construction product industry, to which 28 respondents have participated; and (ii) an email survey of architects' professional bodies, to which 10 respondents have participated. In total, ***171 successful contacts have taken place***.

Contacts with ***industry associations*** were generally fruitful, although in certain cases the reaction was less warm that initially expected. Some associations manifested concerns regarding the implementation of several parallel studies on the construction industry, which are perceived to place an excessive burden on their members. This resulted in some delays/difficulties in establishing contacts with national associations, which in turn reverberated on the ability to identify firms to be interviewed. In some cases, delays were also experienced at the level of national associations that, especially in the handicraft sector, do not have well developed contacts with firms and therefore had to link up with territorial associations at the local level. In order to compensate for this, the Consultants activated own channels to reach out for firms and increased the number of contacts with national associations, so as to enhance the chances of getting useful referrals. In practice, this resulted in a number of contacts with industry associations significantly greater than initially envisaged. The Inception Report envisaged a total of 20 interviews with industry associations, 10 at the EU level and 10 at the national level. As of 15 March 2016, interviews or public meetings were held with 13 EU level associations, and, in addition, 9 EU level associations were surveyed through the online questionnaire

[21] These include: (i) the Joint Committee meeting of the UEPC (European Union of Developers and House Builders) held in Utrecht on 5 November; (ii) the meeting of the CEN Construction Sector Network Core Group held in Brussels on 20 October; (iii) a workshop organized by Construction Products Europe on 12 November; the Annual Board Meeting of the European Builders Confederation (EBC) on 18 December. The participation in all events was preliminarily agreed upon with the Client.

for the construction product sector. With respect to national associations, interviews were held with 28 national associations and, in addition, 34 associations and professional bodies were surveyed through the online questionnaire for the construction sector and the email survey for national chambers of architects.

In the case of ***national authorities***, there were initially some delays in identifying the right counterparts, but eventually all 10 national governments were interviewed. In several cases, the counterparts identified were responsible for only part of the themes addressed by the EU legislation to be analysed. Therefore, in order to ensure an adequate coverage, multiple contacts per country were sometimes required.

Interviews with firms proved to be the most complex task in the fact finding phase. However, 82 interviews with firms were carried out, compared to the 70 envisaged in the Inception Report. In particular, the Inception Report foresaw 45-50 interviews with construction companies and providers of specialised construction services, and 20-25 interviews with professionals and product manufacturers. Eventually, 48 interviews were held with construction companies and providers of specialised construction services, and 34 with other operators, of which 17 with professionals and 17 with product manufacturers.

Data Collection Tools and Modalities. Interviews with associations and national authorities were conducted on the basis of ***checklists***, consisting of lists of themes for discussions. The checklists were always tailored to the specific context and interlocutor, which obviously required a significant preparatory work. In the case of telephone interviews, counterparts were rarely available for more than one hour, which sometimes did not allow to exhaustively cover all the themes to be discussed. In these cases, interviews were followed up with email exchanges. Personal interviews offered greater room of manoeuvre and there have been cases of interviews lasting more than two hours.

Interviews with firms were conducted on the basis of structured ***questionnaires***. A set of four questionnaires was developed, targeting different categories of firms, namely: (i) firms and craftsmen involved in the construction of building and specialized construction activities (corresponding to NACE Division 41 and NACE Groups 43.1, 43.3 and 43.9); (ii) firms and craftsmen providing installation services (corresponding to NACE Group 43.2); (iii) professionals providing construction-related architectural and engineering services (included i.a. in NACE Group 71.1); and (iv) manufacturers of construction products (which belong to various groups in NACE Sections B and C). The questionnaires were tested with some associations and firms and cleared with the Client. The questionnaires included between 60 and 100 questions, which is much more than initially envisaged.

1.4 Next Steps

Timeline. The fact finding work under Task #3 and the analytical work under Task #4 was completed in line with overall timeline. In parallel, work has been undertaken with respect to Task #5 – Overall Assessment. Concerning Task #6, Open Public Consultation, the preparatory work has been completed and the questionnaire is now ready for uploading on the Commission online platform. In conclusion the overall timeline does not significantly change compared to what indicated in the Inception Report. The timing of subsequent activities can be summarized as follows:

- The ***overall assessment*** (Task #5) has already started in parallel with fact finding, and will continue through the end of April 2016;
- The ***open public consultation*** (Task #6) was finalised and will soon be on air for 12 weeks. The closing of the consultation is thus expected by mid-late June 2016. The Client and the Consultants will reconvene concerning the preparation of a report on the findings of the open public consultation, which could be delivered as an Annex to the Final Report;
- The ***finalization of the Study***, comprising Task #7 – Conclusions and Proposals and Task #8 – Reporting, is expected to require three months, from March through May 2016.

Deliverables. The next deliverables include:

- The ***Draft Final Report***, to be delivered 11 months after contract signing, i.e. at the end of April 2016. This report will provide a comprehensive ex post evaluation based on all the evaluation questions to be covered by the Study (Task #5). As per contract, this report was also expected to include the results of the public consultation but this is no longer possible given the pending opening of the exercise;

- The ***Final Report***, to be delivered 12 months after contract signing, i.e. at the end of May 2016, which will take into account the comments made by the Client and the stakeholders on the Draft Final Report.

The Second Progress Report will be discussed at meetings with the ***Steering Committee and the Mirror Group*** to be held on 30 March 2016. The Draft Final Report will be discussed at meetings with the ***Steering Committee and the Mirror Group*** to be held on 12 May 2016. In addition, the Draft Report will be presented at a ***Validation Workshop*** with the participation of up to 100 stakeholders, to be organized by the Commission with the support of the Consultants, and expected taking place on 26 May 2016.

PART A – RESULTS OF THE FACT FINDING PHASE

A.1 INTRODUCTION

This Part of the Report is devoted to the illustration of the results of the fact-finding work aimed at assessing the effects of EU legislation identified at the inception stage. The focus is on the effects linked to seven pieces of legislation, namely the CPR and its predecessor, the PQD, the SD, the EPBD, the EED, the RESD, and the LPD. The regulatory effects are shown in Exhibit A.1.1 below.

In line with the overall approach of the Study, the focus is on the impact of EU legislation on construction firms. The analysis of these effects on enterprises is intended to provide elements useful for the overall evaluation of the EU legislation, i.e. the efficiency, coherence – already included in Part B of this Report, effectiveness, relevance and EU added value

For all the effects analysed, an effort was made to provide a quantification of the costs and/or benefits potentially associated with EU legislation. The quantification exercise relied on the methodology for estimating costs and benefits already presented in the Inception Report.

This Part is structured as follows:

- Section A.2 sets the stage, by providing a succinct illustration of the main developments in the EU construction value chain over the period covered by the Study;
- Section A.3 reviews the effects of the CPR and of the passage from the CPD to the CPR, with reference to a wide range of provisions potentially generating costs or cost savings;
- Section A.4 reviews the effects linked to the PQD, dealing with the themes of administrative costs, cost savings and business opportunities generate by EU legislation;
- Section A.5 analyses the effects of the SD, and in particular the benefits from simplification, the new business opportunities for cross-border operators, and the inward effects from inflows of EU construction companies;
- Section A.6 discusses the market development effects of the adoption of stricter energy efficiency standards in buildings, in line with what envisaged by the EPBD;
- Section A.7 reviews other effects generated by the EPBD linked with the issuance of Energy Performance Certificates;
- Section A.8 assesses a set of regulatory effects in the Energy Efficiency policy areas, with respect namely to the EED, EPBD, and RESD;
- Section A.9 analyses the effects associated with the LPD, with particular reference of the cost savings associated with the shortening of payment delays.

Exhibit A.1.1 Effects Identified and Effects Covered by Fact Finding Work

Legal Acts	Nature of the Costs and Benefits Identified (main related provisions)[22]
Internal Market	
Construction Product Regulation	• Administrative costs/cost savings linked to the obligation of providing information to customers (drafting, supplying and storing of DOP and related technical documentation or instructions and safety information) (articles 4, 5, 6, 7, 11.1, 11.2 and 13.8) • Administrative cost savings linked to the possibility of (i) derogating from DOP (article 5) and/or (ii) posting the DOP online (articles 7 and 60) • Administrative costs/cost savings linked to the affixing of the CE marking on products and the provision of information on the label (articles 8, 9, 11 and 13) • Administrative cost savings due to the easier accessibility of information through the Product Contact Points for Construction (PCPC) (articles 10) • Substantive costs/cost savings linked to the obligation for manufacturers to put in place factory production controls and to have an AVCP performed (articles 11, 13, and Annex V) • Substantive cost savings due to the simplification of procedures for the testing of products and for AVCP for micro enterprises (articles 36 through 38)

[22] For convenience, the articles mentioned refer to the most recent act (e.g. CPR rather than CPD).

Professional Qualification Directive	• Administrative cost savings due to the simplification of procedures for the recognition of professional qualifications for establishment under the Automatic Recognition System (articles 21, 49 and 50) • Administrative cost savings due to the simplification of procedures for the recognition of professional qualifications for establishment under the General System (articles 13, 16, 17 and 50) • Administrative cost savings due to the simplification of procedures for the occasional provision of cross border services (articles 5- 7) • Administrative cost savings due to the availability of information via the PSC regarding applicable requirements online (article 57 PQD) and the possibility of complying with formalities online (article 57a PQD) • Administrative costs due to the obligation for service providers to provide information to the recipient of temporary cross-border services (article 9) • New business opportunities from the removal of obstacles to the mobility of professionals and craftsmen providing services to the construction industry
Services Directive	• Regulatory charges savings linked to the proportionality of administrative fees in authorisation schemes (article 13(2)) • Administrative cost savings due to the regulatory simplification of authorisations to the permanent establishment of services providers (articles 9, 10, 11, and 12) • Administrative cost savings due to the elimination of the vast majority of formalities concerning the cross-border provision of services on an occasional basis (article 16, namely 16(2)(b)) • Administrative cost savings due to the simplification of administrative procedures for all cross-border situations, resulting in simple form documents, acceptance of equivalent documents and tacit approval (articles 5 and 13) • Administrative cost savings due to the availability of information via the PSC regarding applicable requirements online (articles 7 and 21) and the possibility of complying with formalities online (articles 6 and 8) • Substantive cost savings linked to the elimination of the need to hire local staff when operating in another MS (articles 15(2)(f) and 16(2)(d)) • Substantive cost savings linked to the elimination of the need to proceed with corporate restructuring to meet entry requirements in another MS (articles 14.1.3, 15.2.b. and .c, and 25) • Substantive cost savings from the elimination of the need to acquire local insurance coverage when operating in another MS (article 23) • Substantive cost savings linked to the generalisation of alternative dispute resolution schemes (article 27) • Substantive cost savings from elimination of other particularly stringent restrictions (articles 14, 15, 24, and 25) • Substantive cost savings due to the elimination of the requirement to establishment for temporary cross-border providers (article 16.2.b) • Substantive cost savings linked to the disapplication of local rules on equipment and materials (article 16.2.f) and of most other host MS requirements (article 16) • Administrative costs due to the obligation for service providers to provide information to the recipient of cross-border services (articles 22 and 27) • New business opportunities from the removal of obstacles to the establishment and operation of construction firms and related providers of services
Late Payments Directive	• Financial savings (efficiency gains) linked to the setting of maximum and/or default payment terms in commercial transactions and criteria for the identification of grossly unfair terms and practices (articles 4, 5, and 7) • Substantive cost savings in the form of reduced litigation costs linked to automatic entitlement to late payment interest (articles 3 and 4)

Energy Efficiency	
Energy Efficiency Directive	• New business opportunities linked to obligation to renovate the stock of existing buildings, including the 3% target for central government buildings (articles 4 and 5) • New business opportunities linked to the increase in demand for high energy efficiency goods and services (including construction) by public bodies (article 6) • New business opportunities linked to the increase in demand for energy efficiency services associated to the obligation for energy distributors to reduce their sales by 1.5% per annum (article 7).
Energy Performance of Buildings Directive	• Administrative costs linked to the obligation to obtain and display energy performance certificates of buildings (articles 11-13) • Substantive compliance costs linked to the obligation to meet energy efficiency requirements for buildings, building systems and building elements (articles 4, 6, 7, and 8) • Substantive compliance costs to become a qualified or accredited expert for building certification and equipment inspection (initial and continuous training, software licence, audit by administrations, etc.) • New business opportunities linked to the growing demand for energy-efficient buildings, building systems and materials in order to meet energy performance requirements • New business opportunities linked to issuance of energy performance certificates (articles 11-16)
Renewable Energy Source Directive	• Substantive costs for the installers of renewable energy systems to meet requirements of certification or equivalent qualification schemes (article 14.3)

A.2 SECTORAL OVERVIEW

A.2.1 The construction sector

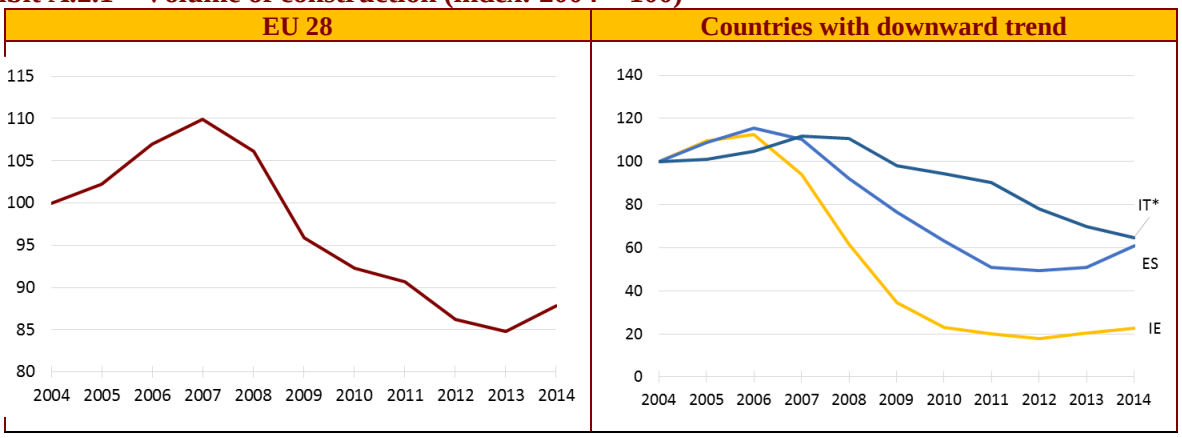
Building construction is a major economic activity in the European Union (EU), with a total value of production in 2012 corresponding to over 9% of GDP, and a value added contributing for 3.1% to GDP formation in the EU28 countries. In 2014, there were over 3 million firms active in the construction of buildings, with total turnover of about € 1,300 billion and an employment of almost 11 million persons. The production structure is dominated by micro and small enterprises, with an estimate 94% of firms with fewer than 9 employees.[23]

In the ten countries covered in detail by this Study, in 2014 the total value of output in the building sector - including both new construction and renovation, and both the residential and non-residential market - was about €877 billion. Residential buildings are the main sub-sector, with a total output of about € 525 billion. Residential building renovations were the main market segment, worth € 328 billion. New buildings construction stood at € 198 billion, with over 1.1 million houses completed, of which 541,000 1-2 family houses and 591,000 apartment buildings. Output in the non-residential sub-sector[24] was at € 350 billion, virtually equally distributed between new buildings and renovations.[25]

A.2.1.1 The effects of the economic crisis

The 2004 – 2014 period was overall ***very negative for the construction industry*** in terms of output of production, with a decline of nearly 15% of EU28-wide output over the ten years. After a peak in 2007, the volume of constructions declined steadily, showing some mild countertrend only in 2014. A closer look to the ten countries under review reveals a composite picture, with three groups of countries. A first group, including Italy, Spain, and Ireland, shows a marked negative trend, with a reduction in the volume of buildings constructed between 2004 and 2014 ranging between 40% for Italy and Spain, and nearly 80% in the case of Ireland. The second group includes five countries (Belgium, Denmark, France, Germany, and the UK) that had an erratic trend in the volume of buildings, with variations that however did not exceed ± 15%. Finally, Romania and Poland had a net increase over the period under considerations, achieving in 2014 a volume of constructions corresponding to some 170-180% compared to 2004.

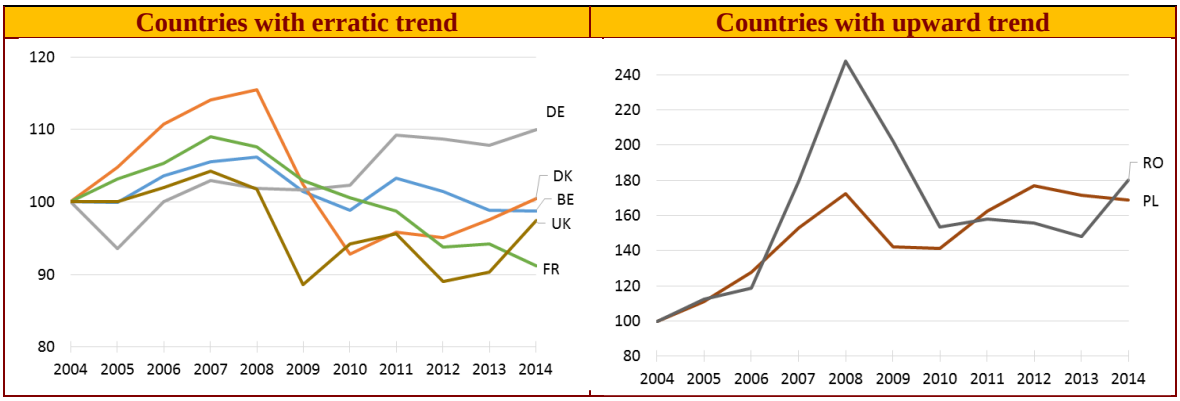
Exhibit A.2.1 – Volume of construction (index: 2004 = 100)



[23] Data are from Eurostat, Structural Business Statistics. Value of production and value added refer to NACE Rev 2. Divisions 41 'Construction of buildings' and 43 'Specialised construction activities'; Division 42 'Civil engineering' is excluded as it is not covered by the Assignment.

[24] Non-residential buildings encompass a variety of destinations of use, including education and health structures; commercial buildings and offices; industrial buildings; as well as storage, agricultural, and miscellaneous buildings.

[25] Data from CRESME elaboration on Euroconstruct; DIW, and Romanian National Institute of Statistics.

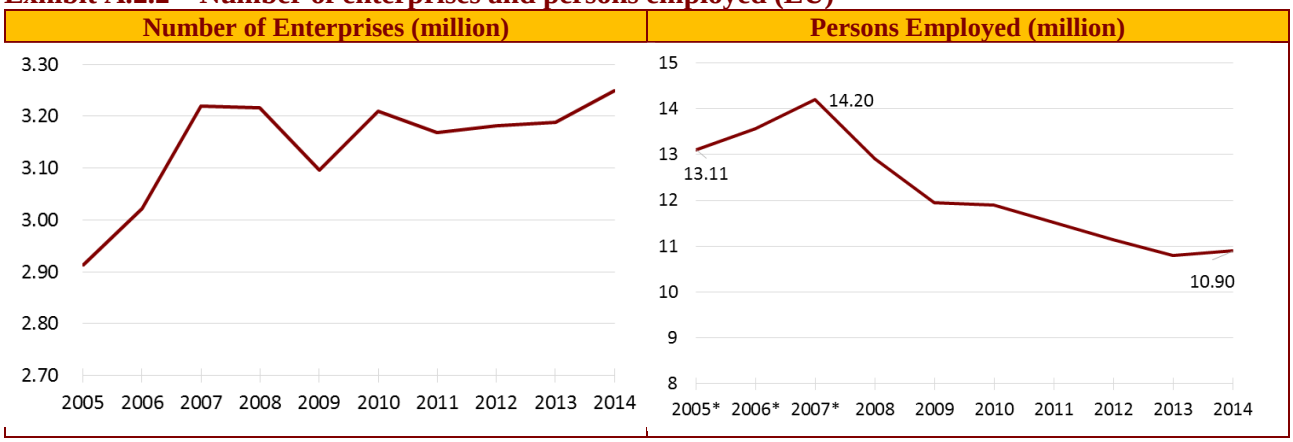


** Data for Italy refer to the whole Construction sector. Source: Eurostat*

A.2.1.2 A Severe erosion of the production base in the construction sector

The negative performance was obviously reflected in the production base, especially with regards to the employment. While the number of companies declined between 2007 and 2009 (-4%) and then recovered approaching the pre-crisis level, the number of persons employed shrank by nearly one quarter between the 2007 peak and 2013 (the latest data available). In 2013, construction activities (excluding civil engineers) employed over 2 million people less than 2005, and 3.4 million people less than 2007.

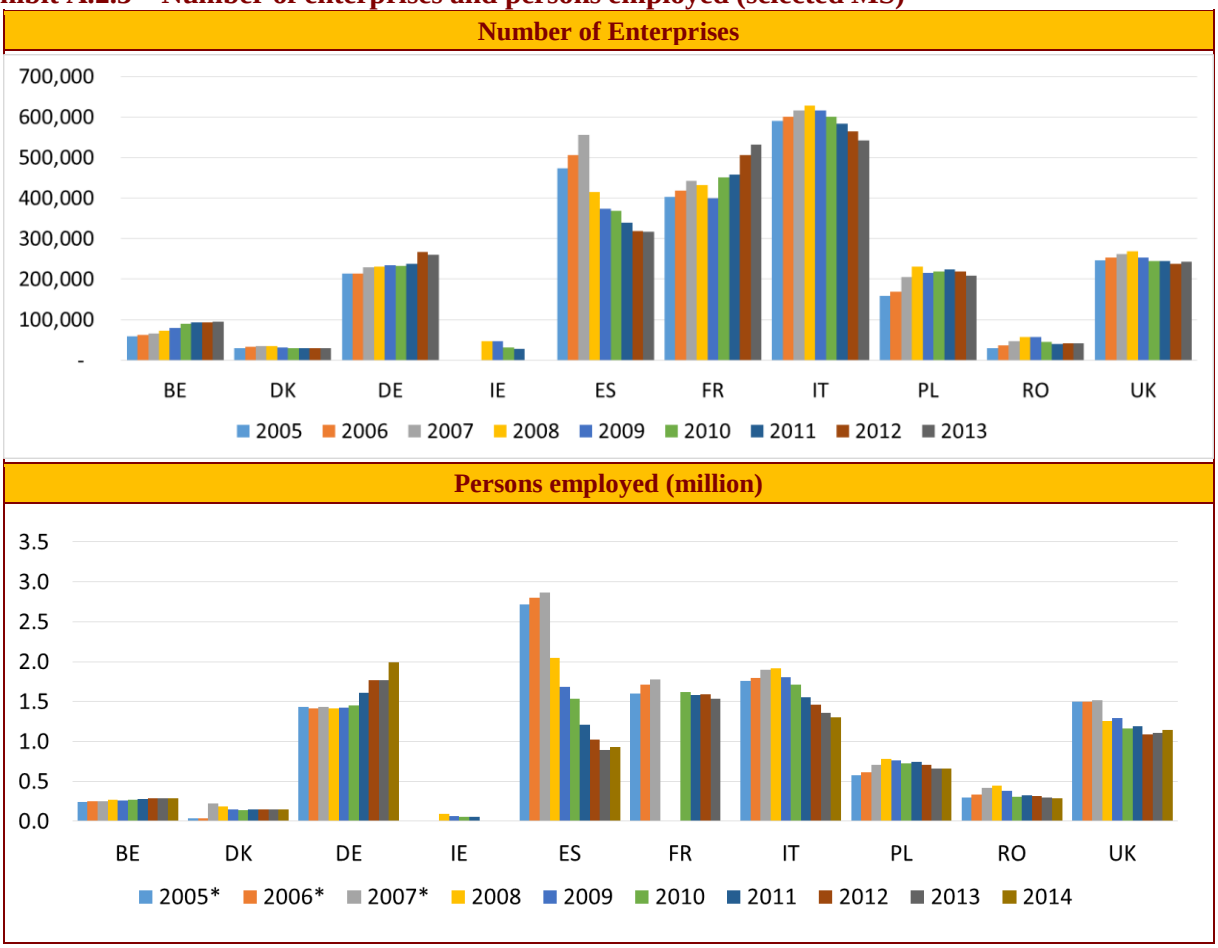
Exhibit A.2.2 – Number of enterprises and persons employed (EU)



Source: Eurostat

The situation varies considerably among the ten countries analysed, essentially reflecting the patterns in the volume of constructions (see above). The sharpest decline is experienced in Spain, Ireland, and Italy, while the only countries in which the number of enterprises and of persons employed is growing are Belgium and Germany.

Exhibit A.2.3 – Number of enterprises and persons employed (selected MS)

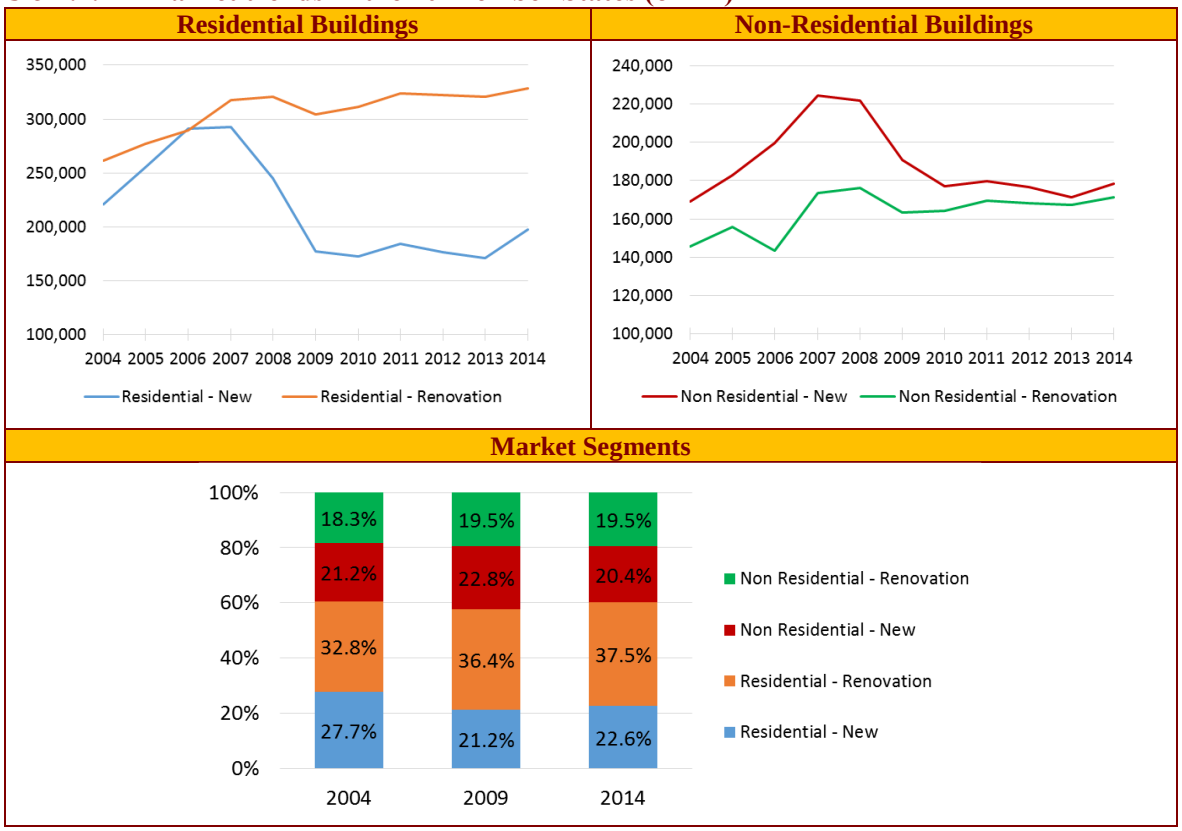


Source: Eurostat

A.2.1.3 Significant change in the product mix.

In the market for buildings across the 10 MS covered by the analysis, the share of the residential and non-residential segments, in terms of value, has not significantly changed in the last decade. As shown in Exhibit A.2.4 below, the relative shares have remained stable, at about 60% for residential buildings, and 40% for non-residential. Both segments have peaked in 2007 followed by a sharp decline, and a mild recover only in 2011 and 2014. To the contrary, over the 2004-2014 period, the renovation segment has increased its importance, from 51% of the building market in 2004, to 56% in 2009, and 57% in 2014. The market for residential renovation is the only one that has already overcome its pre-crisis level, and its share over the building market increased from 33% to 37.5%. As for non-residential renovation, it has come close to the pre-crisis peak level in 2014. In any case, neither of the two segments showed the marked decline after 2007 experienced by the new construction segment.

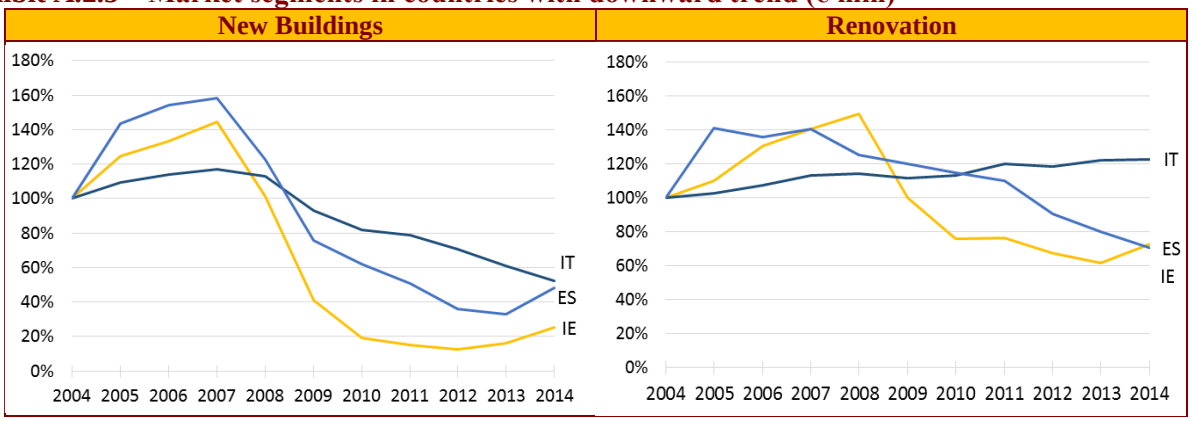
Exhibit A.2.4 – Market trends in the 10 Member States (€ mln)



Note: no data on renovation for Romania;
Source: Elaborations CRESME on Euroconstruct data; DIW; Romanian National Institute of Statistics

Countries with downward trends in construction output (namely Italy, Spain, and Ireland) show a variation in market shares that is fairly similar to the whole group, with a relative growth of renovation over new construction. In fact, the market for new buildings has been strongly declining from 2007 onwards in the three countries, while the market for renovation has remained somehow more stable. In the case of Italy in particular, the value of renovation market in 2014 overcame than its 2007 value, also thanks to public subsidies. Spain and Ireland experienced a decline also for renovation activities, although of a smaller magnitude compared to the new buildings segment: in both countries, the current market value is about half of its pre-crisis peak.

Exhibit A.2.5 – Market segments in countries with downward trend (€ mln)

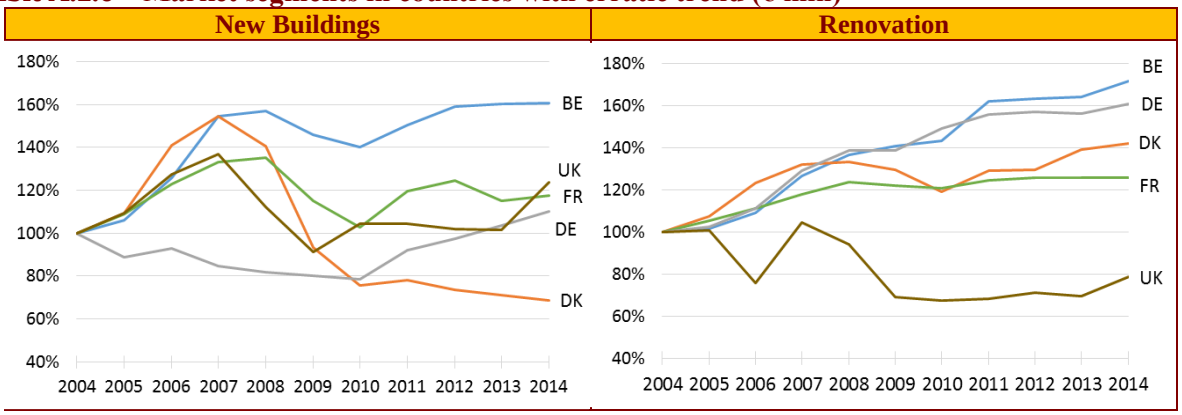


Source: Elaborations CRESME on Euroconstruct data

Countries with erratic trends (namely Denmark, Germany, UK, and France) are not a homogeneous group when it comes to renovation segment's contribution to the construction market, as shown in Exhibit A.2.6 below. In Denmark and Germany, the new construction segment has lost shares, while renovation activities grew from 60% in 2004 to 69% in 2014 in Germany and from 57% to 73% in Denmark. In France and Belgium, both segments have followed parallel trends, and the relative share of renovation is stable (around 48-49% for

Belgium and around 53-54% in France). Though, the French market has increased its value by about 20% over the 2004-14 period, the Belgian market has been significantly healthier, with a +65% growth over the decade.[26] The UK, to the contrary, has seen a reduction of the share of renovation activities, which were worth about half of the market in 2004, and about 39% in 2014. Of all countries for which data are available, the UK is the only one signalling a decline in the renovation market.

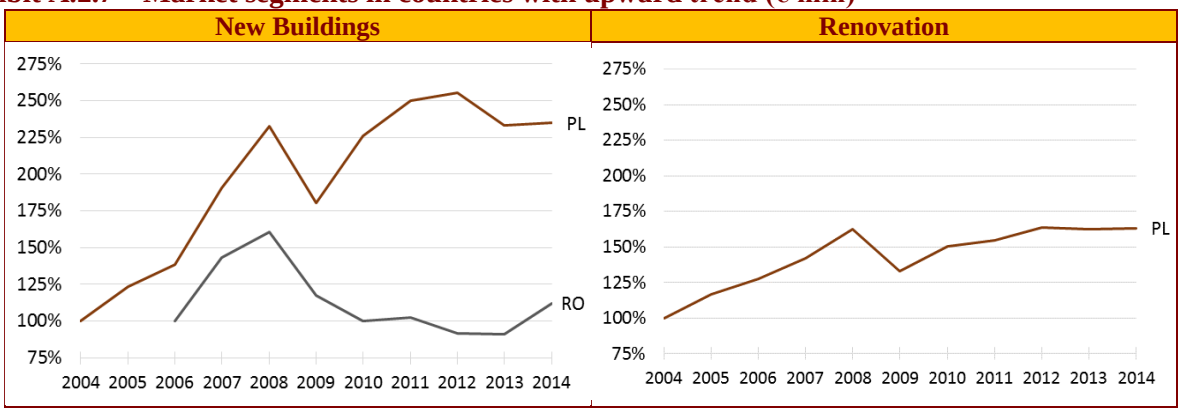
Exhibit A.2.6 – Market segments in countries with erratic trend (€ mln)



Source: Elaborations CRESME on Euroconstruct data; DIW

More limited information is available concerning Poland and Romania, the two countries in which the construction output has grown considerably over the 2004-2014. In terms of value, Euroconstruct data show indeed an increase in Poland for both new buildings and renovation activities, reaching in 2014 higher levels than their pre-crisis peak. However, the market for new buildings has grown faster than the market for renovation, whose relative share has dropped from 36% to 28%. As for Romania, no data is available for the renovation market. The market for new construction has not yet recovered its 2008 peak.

Exhibit A.2.7 – Market segments in countries with upward trend (€ mln)



Note: no data on renovation for Romania;
Source: Elaborations CRESME on Euroconstruct data; Romanian National Institute of Statistics

A.2.2 The construction product industry

The construction product industry generated about €280 bln in terms of product value, and €90 of added value in 2013. The industry production value corresponds to 2.1% of EU GDP, and the added value contributes to 0.7% of EU GDP. In the same year, about 245,000 firms populated he sector, employing more than 2.2 million of persons.[27] In this section, an overview of the main industry characteristics is provided.

[26] Interestingly, construction output increased only by less than 15% (cf. Exhibit A.2.1 above), signaling an increase in the price of construction outputs and renovation activities.
[27] Based on Eurostat SBS.

A.2.2.1 Industry definition

There is no accepted definition of 'construction product industry'. Indeed, it includes several sectors which only or largely supply construction products (e.g. bricks and tiles, concrete products, doors and windows), and also sectors where construction products are manufactured, but not to an exclusive or prevailing extent (e.g. steel bars, flat glass). For this reason, the definition of the construction industry needs to be designed based on several NACE classes, usually at a very granular level of details, with consequent data availability issues.[28]

For the purpose of this overview, we have built upon RPA's definition used in the recent study on CPR implementation,[29] with several modifications. The sectors covered include:

1. 'Manufacture of structural metal products' (NACE rev2 25.1), which encompasses the sub-classes (i) 'manufacture of metal structures and parts of structures'; and (ii) 'manufacture of doors and windows of metal';
2. 'Manufacture of other builders' carpentry and joinery' (NACE rev2 16.23);
3. 'Manufacture of articles of concrete, cement and plaster' (NACE rev2 23.6),[30] which encompasses the sub-classes (i) 'manufacture of concrete products for construction purposes'; (ii) 'manufacture of plaster products for construction purposes'; (iii) 'manufacture of ready-mixed concrete'; (iv) 'manufacture of mortars'; and (v) 'manufacture of fibre cement';
4. 'Manufacture of builders' ware of plastic' (NACE rev2 22.23);
5. 'Manufacture of cement, lime and plaster' (NACE rev2 23.5), which encompasses (i) 'manufacture of cement'; and (ii) 'manufacture of lime and plaster';
6. 'Manufacture of clay building materials' (NACE rev2 23.3), which encompasses (i) 'manufacture of ceramic tiles and flags'; and (ii) 'manufacture of bricks, tiles and construction products, in baked clay);
7. 'Manufacture of ceramic sanitary fixtures' (NACE rev2 23.42).[31]

While this definition is not comprehensive of the whole construction product industry, it covers different materials (metal, wood, ceramics, plastic, cement), representing the main inputs to the construction sector.[32] It also covers different product stages, such as raw materials, semi-finished and finished construction products.

A.2.2.2 Sectoral output and the effect of the economic crisis

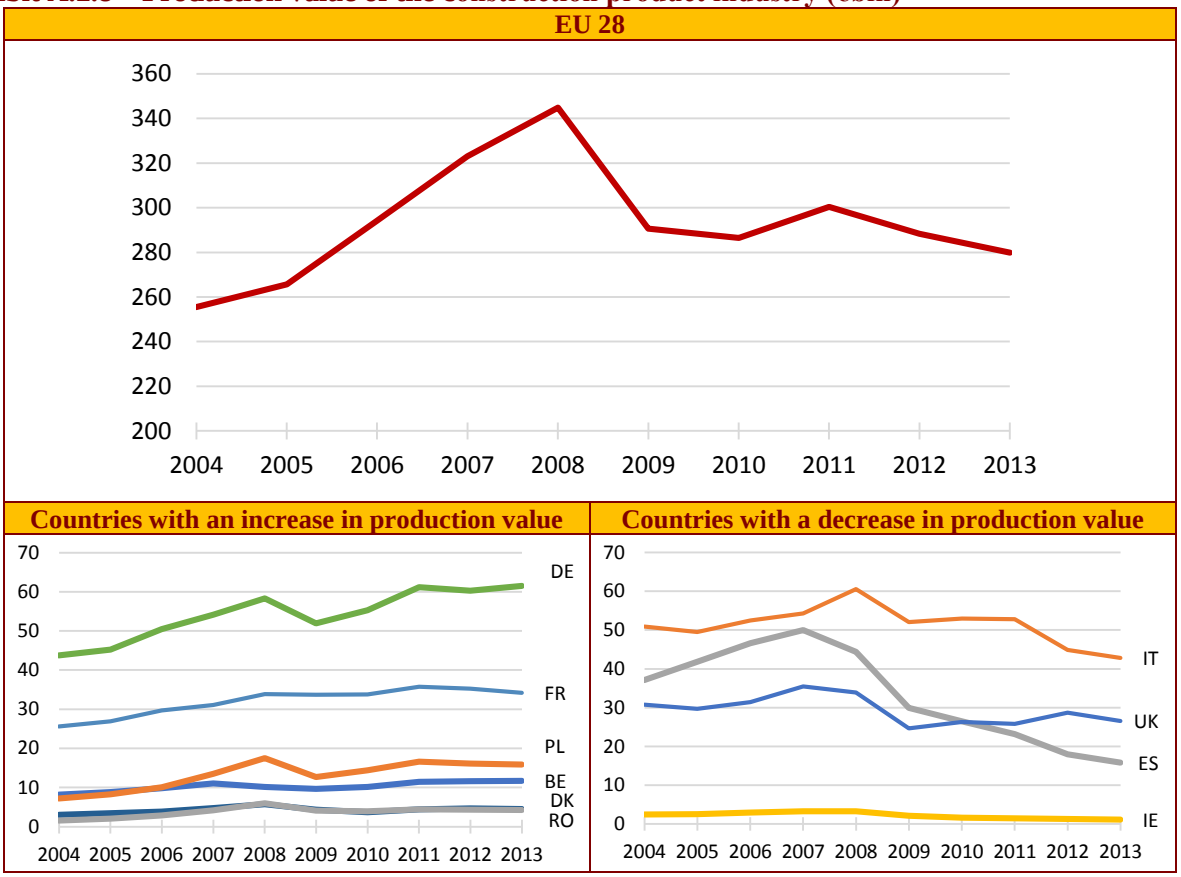
Unsurprisingly, the construction product sector is tracking the overall trend of the construction industry; hence, the 2004-2013 decade came close to a 'lost decade' for the sector.[33] While the industry's production value in the EU did increase between 2004 (€255 bln) and 2013 (€ 279 bln), the current output is significantly lower than the pre-crisis peak, in 2008. As it emerges clearly from Exhibit A.2.8 below, the period is split between a steep increase between 2004 and 2008 (+7.8% per year on average); and a steep decrease followed by a stagnation between 2004 and 2013 (-15.7% between 2008 and 2009, and then -1.2% per year on average from 2009 to 2013).

Within this overall trend, there are significant difference among the 10 MS covered more in detail by this study. In six of them (Belgium, Germany, Denmark, France, Poland, and Romania), the production value of the construction product industry has increased between 2004 and 2013. In particular, over this decade, it has almost trebled in Romania, more than doubled in Poland, and increased by 30 to 50% in the other four countries. In Spain, Ireland, Italy and the UK, the production value has declined; more specifically, in Ireland

[28] In particular, due to NACE revision from v1.1 to v2, consistent data for number of enterprises and employment are only available for the 2008-2013 period.
[29] RPA (2015), Analysis of implementation of the Construction Products Regulation, Final Report prepared for the European Commission, DG Internal Market, Industry, Entrepreneurship, and SME.
[30] RPA definition only includes sub-classes 'manufacture of concrete products for construction purposes' and 'manufacture of plaster products for construction purposes'.
[31] As a comparison, Ecorys (2011) includes the following sectors within the construction product industry (classes are reported with their NACE rev 1.1 denomination): (i) Manufacture of builders' carpentry and joinery; (ii) Manufacture of bricks, tiles and construction products, in baked clay; (iii) Manufacture of cement, lime and plaster; (iv) Manufacture of articles of concrete, plaster or cement; (v) Cutting, shaping and finishing of ornamental and building stone; and (vi) Manufacture of structural metal products. The definition, though narrower, is largely overlapping with the one used in the current study,. Cf. Ecorys (2011) Sustainable Competitiveness of the Construction Sector, Final Report for DG ENTR.
[32] *Ibid.* at p. 14 and ff.
[33] Cf. Section A.2.1 above.

and Spain the production value in 2013 is less than half than in 2004, while in Italy and the UK the decline amounts to about -15%.

Exhibit A.2.8 – Production value of the construction product industry (€bln)



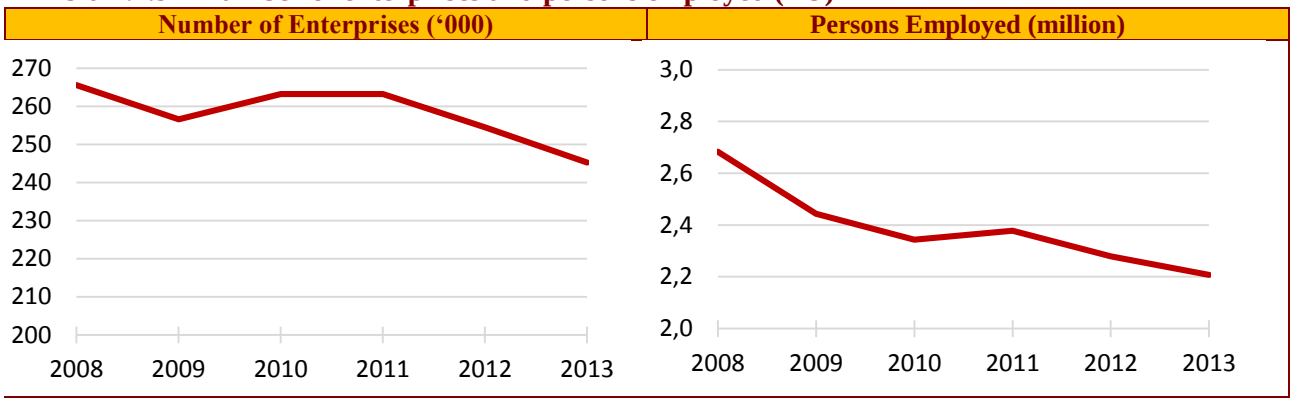
Source: Eurostat

A.2.2.3 The loss of suppliers

Due to revision of the NACE classes,[34] consistent data on the number of companies and persons employed in the construction product industry are available only from 2008 to 2013. As for the production value, the industry experienced a decline of both the number of economic operators and workers over these six years. Interestingly, the decline has been slower and less steep, but did not either stop or significantly slow down in the most recent years. The decline of the number of persons employed between 2008 and 2013 (-18%) is very close to the decline in production value (-19%), signalling a constant labour productivity in the sector. To the contrary, the number of enterprises has been more resilient (-8% over the same period), thus signalling a reduction in average firm output.

[34] Eurostat data switched from NACE Rev 1.1 to NACE Rev 2 in 2008. Usually, it is possible to reconcile data series; unfortunately, as the definition of construction product industry is scattered across small classes, the reconciliation was not possible in this case.

Exhibit A.2.9 – Number of enterprises and persons employed (EU)

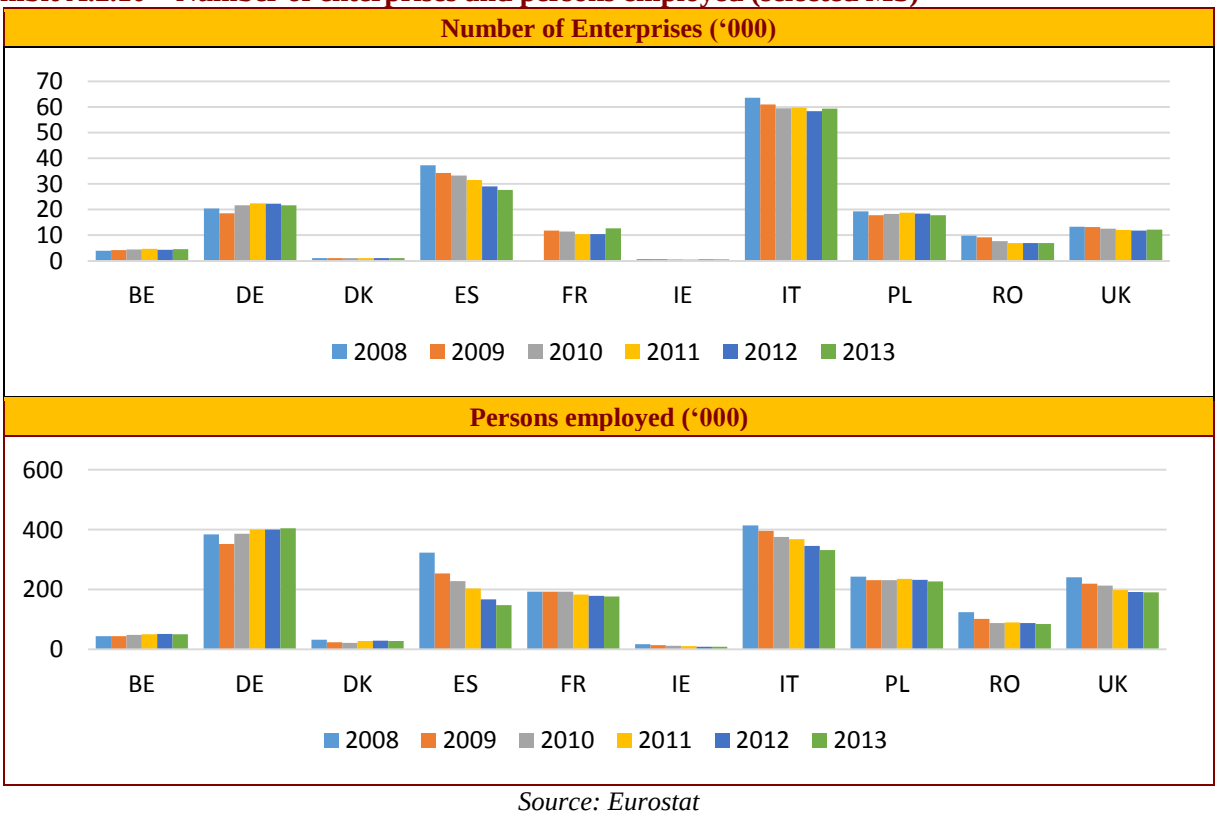


Source: Eurostat

The situation varies considerably among the ten MS analysed, from both a static and dynamic point of view. On a static point of view, firm size, in terms of production value, show cross-country differences. Average production value per firm is very high in Denmark (more than € 4 mln). In Belgium, Germany, France, Ireland and the UK, average production value in 2013 is between €2 and €3 mln, while in Spain, Italy, Poland and Romania it is less than €1mln. For this reason, Spain and Italy are the MS with the largest number of enterprises in the sector, followed by Germany and Poland. As for the number of persons employed per firm, the average in the 10 selected MS is of 10 employees per company. Again, this average hides large variations, going from 27 and 19 employees respectively in Danish and German companies, to 5 in Spain and Italy.

From a dynamic point of view, the number of enterprises has declined in most of the selected MS between 2008 and 2013. The only MS with a positive sign are Belgium (+17%), Germany (+6%), and France (+7%).[35] As for the number of persons employed, positive variations between 2008 and 2013 are registered only in Belgium (+15%) and Germany (+5%).

Exhibit A.2.10 – Number of enterprises and persons employed (selected MS)



Source: Eurostat

[35] 2008 data for France are not available; variation is thus calculated over the 2009-2013 period.

A.3 COSTS AND COST SAVINGS OF THE CPR/CPD

A.3.1 Introduction

In this section, the regulatory effects of the ***Construction Product Regulation (CPR) and Directive (CPD)*** are assessed,[36] including those linked to the transition from the latter to the former. The effects, which were preliminarily assessed in the First Progress Report,[37] consist of substantial costs and cost savings, as well as administrative costs and cost savings. Before presenting the analysis, the data collection process is described, the framework of the CPR and the CPD is outlined, the regulatory addressees are mapped, and the changes introduced by the CPR which could affect regulatory costs and benefits for the construction sector are analysed.

The analysis relies on the methodology for the estimation of the effects presented in the Inception Report.[38] Data sources include:

1. Primary information obtained through ***interviews with companies***;
2. Primary information obtained through ***interviews with trade associations, public authorities and other stakeholders***;
3. Primary information obtained through ***an online questionnaire targeted at trade associations and other stakeholders***;
4. ***Secondary sources***, including the EU[39] and UK Impact Assessment (IA),[40] the CPD Evaluation Report,[41] the recent RPA study on the CPR,[42] and industry position papers.[43]

The section is structured as follows:

- Section A.3.2 presents the primary data collection process;
- Section A.3.3 discusses the regulatory framework set by both the CPR and the CPD;
- Section A.3.4 presents the market operators subject to the CPR;
- Section A.3.5 lists and analyses the changes brought about by the CPR;
- Section A.3.6 quantifies the administrative costs and cost savings linked to the obligation of providing information to customers (including the DOP and the CE marking);
- Section A.3.7 quantifies the administrative cost savings linked to the possibility of derogating from the DOP and/or posting the DOP online;
- Section A.3.8 quantifies the administrative cost savings due to the easier accessibility of information through the Product Contact Points for Construction (PCPC);
- Section A.3.9 quantifies the substantive costs and cost savings linked to the obligation for manufacturers to put in place factory production controls and to have an Assessment and Verification of Constancy of Performance (AVCP) performed;
- Section A.3.10 quantifies the substantive cost savings due to the simplification of the procedures for the testing of products and for the AVCP for micro-enterprises;
- Section A.3.11 describes the impacts of the CPR on sustainability;
- Section A.3.12 provides overall conclusions.

[36] Cf. Section A.1 above for the full list of regulatory effects.
[37] Cf. First Progress Report (Revised), 15 January 2015, at p. 50 and ff. The analysis of most of the regulatory effects has been deeply revised following the fact-finding phase.
[38] Cf. Inception Report (Revised), 19 October 2015, at Section 4, in particular the sub-sections on substantive and administrative costs.
[39] Commission Staff Working Document Accompanying the Proposal for a Regulation of the European Parliament and of the Council laying down harmonised conditions for the marketing of the construction products – Impact Assessment, 23.5.2008, SEC(2008)1900. Hereinafter 'CPR IA'.
[40] Department for Communities and Local Government (2009), Impact Assessment of the European Commission's proposed Construction Products Regulation. Hereinafter, 'UK IA'.
[41] PRC (2007), Study to evaluate the Internal Market and Competitiveness Effects of Council Directive 89/106/EEC, Final Report to DG Enterprise and Industry of the European Commission, at pp. 28 and ff. Hereinafter 'IA Background Study'.
[42] RPA (2015), Analysis of implementation of the Construction Products Regulation, Final Report prepared for the European Commission, DG Internal Market, Industry, Entrepreneurship, and SME. Hereinafter, 'RPA Study'.
[43] E.g., Construction Products Europe (2014) implementation of the Construction Product Regulation, Manufacturers' report. Hereinafter 'CPE Position Paper'.

A.3.2 Retrieval of primary information

Seventeen interviews were held with manufacturing companies, of which 14 delivered information on the CPD/CPR framework. As exporting manufacturers were actively looked for to be included in the sample, the sample was skewed towards larger companies (the larger the firm, the higher the probability that products are sold in other countries). To compensate, interviews were supplemented by an online survey targeted at trade associations and other stakeholders.

The interviews with companies were key to retrieve cost and cost saving parameters and, as consequence, to carry out the quantifications provided below in this section; importantly, the number of data points retrieved largely exceeds those required by the SCM method. However, several aspects of the CPR framework, including specific simplification provisions as well as the opinion of SME, could not be satisfactorily covered with a small number of in-depth interviews. For this reason, a ***supplementary online survey of trade associations and other stakeholders*** was run. The dissemination of the survey was supported by Construction Products Europe. Thirty-seven stakeholder organisations from 13 MS, Norway and Switzerland participated in the survey.

Finally, information was also retrieved from interviews with governments and trade federations at EU and national level. A workshop to retrieve information for this Study was organized by Construction Products Europe on 12 November 2015.

A.3.3 The Regulatory Framework of the Construction Product Regulation and Directive

As previously the CPD, the CPR regulates the market for construction products following the principles of the ***'New Approach'*** to Single Market regulation: the legal text sets the general objectives, while the detailed specifications for every single product are left to standardisation, under the responsibility of CEN. That way, the system remains flexible, with technical details left to co-regulation via harmonised standards (hEN), while promoting the fulfilment of the more general objectives, which are fixed in a binding norm.

However, the CPR/CPD are *sui generis* acts within the New Approach paradigm, not setting performance targets, but a ***uniform measurement methodology for product performance***. While a New Approach Directive on e.g. the safety of certain products would state the minimum safety level that a manufacturer needs to guarantee to place a product on the Single Market, the CPR 'only' sets a common methodology for measuring the performance of construction products over their essential characteristics.[44]

How can this approach focusing on ***performance measurement*** rather than product performance be explained? The most important explanation is that the definition of construction product requirements and, most notably, building requirements is left to MS, at either national or local level. This complies with the subsidiarity principle, inasmuch Member States and local governments can more effectively and efficiently tailor their construction product and building regulations to the geographical, climatic, and seismic features of their territory, and to the building customs and demand characteristics of their societies.

Secondly, the construction product performance alone does not ensure that the construction works in which they are installed fulfil any essential requirements. ***The performance of a building depends on both the products used and its design***. The regulation of the essential requirements of construction works, as a consequence, requires to combine a 'construction product specification' and an 'application rule', concerning the design, construction, or installation of buildings, building systems, and building elements. The essential requirements for construction works, usually implemented by professionals through 'accepted solutions', vary from country to country, and even within a country.[45]

[44] The essential characteristics of a construction product, as defined in art. 2.4 of the CPR, are those related to the Basic Requirements of a construction work. Those requirements are listed in Annex I to the CPR as follows: (i) Mechanical resistance and stability; (ii) Safety in case of fire; (iii) Hygiene, health and the environment; (iv) Safety and accessibility in use; (v) Protection against noise; (vi) Energy economy and heat retention; and (vii) Sustainable use of natural resources. The last requirement was not included under the CPD.

[45] Cf. IA Background Study, at pp. 28 and ff.

In a nutshell, MS or local governments are free to set requirements for construction product performance, or rather allow any product to be used as long as the essential requirements of construction works are met. ***The CPR does not mandate any performance requirement, either for construction products or works, but sets a uniform method to measure the performance of a construction product***, which is then defined through standards. That way, construction operators across the EU are sure that product performance declarations 'speak the same language', i.e. are drafted according to the same measurement methodology and parameters regardless of the country of production or installation. Consequently, performance declarations can be effectively used to verify whether a construction work meets national and local requirements.

Through this framework, the CPR/CPD aims at ensuring the ***free circulation of construction products within the Internal Market***, and as such at promoting the competiveness of product manufacturers and the construction sector as a whole.[46] This objective is achieved by: (i) mandating manufacturers to express the performance characteristics of their products using only the harmonised technical language set by the CPR framework (including the applicable standards);[47] and (ii) prohibiting MS from preventing the making available on the market or the use of construction products compliant with the CPR framework, *as long as the declared performances correspond to the requirements for the use planned in that Member State*.[48]

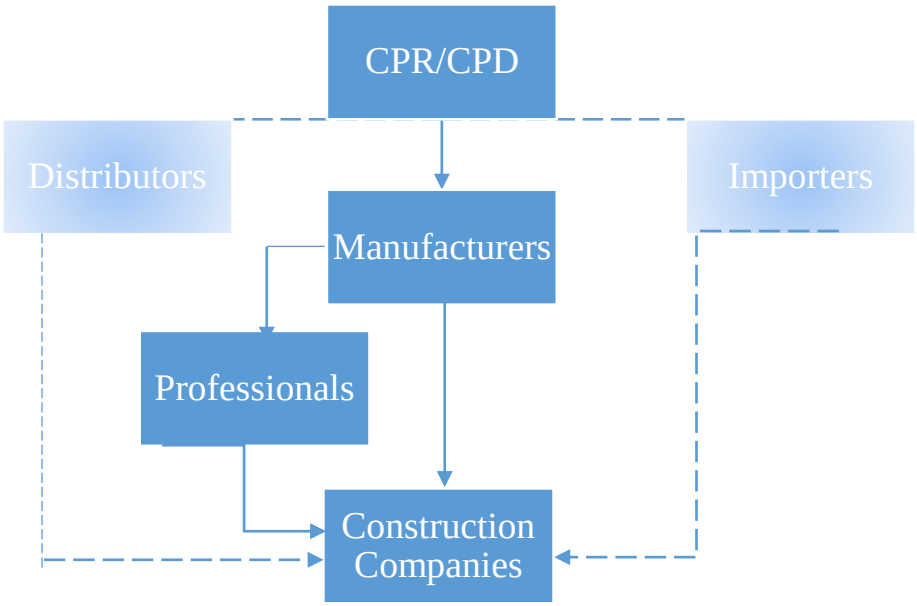
The specific CPR/CPD approach has an important impact on the measurement of the costs and benefits generated for the construction sector: companies do not need to incur substantive cost to modify their products or production processes to meet any performance requirement, as confirmed by firms and trade associations. Rather, the CPR/CPD generates cost and cost savings related to the ***measurement and certification of the performance of the products according to the applicable hEN or European Assessment Document*** (EAD).

A.3.4 Subjects affected by the Construction Product Regulation / Directive

The CPR/CPD mostly impact, as described in Sections A.3.6 to A.3.10 below, the manufacturers of construction products (as well as distributors and importers, which however do not fall within the scope of the Assignment). As a result, most of the impacts on the construction companies are indirect in nature and take the form of (i) passed-on costs, and (ii) information flows. As for the latter, construction companies are the recipients of the information provided through the DOP/CE marking; still, the impact is often mediated by the professionals (e.g. architects or engineers) in charge of designing the construction work and verifying the compliance with building requirements. The relationship among the different subjects is summarised in Exhibit A.3.1 below.

[46] Cf. CPR IA.
[47] Cf. Art. 4-6 CPR.
[48] Cf. Art. 8.4 CPR.

Exhibit A.3.1 CPR/CPD chain of impacts and subjects affected



Note: in shaded boxes / dotted lines, subjects and relations not covered by the Assignment

A.3.5 The changes introduced by Construction Product Regulation

The CPR was approved in March 2011 and fully came into force in July 2013,[49] repealing the CPD and aiming at clarifying, simplifying and further harmonising the pre-existing legal framework. In this section, the most relevant changes which could affect the competiveness and sustainability of the construction industry are presented.[50] The description is functional to the quantification of costs and cost savings carried out in sections A.3.6 to A.3.10 below.

DOP. Under the CPD, the manufacturer had to draw an Attestation of Conformity for the product to be CE-marked;[51] under the CPR, the manufacturer needs to draw a Declaration of Performance (DOP).[52] Both the CPD Attestation of Conformity and the CPR DOP include similar information. In the CPR, drafting a DOP has been made explicitly mandatory for all products covered by hEN or EAD. The main difference between the CPD and the CPR, however, is the obligation for the manufacturer to provide the DOP to its customers;[53] under the current framework, companies can opt for supplying their DOP in paper or via electronic means. [54] Finally, derogations from the obligation to draw a DOP were introduced for the following cases: (i) products individually manufactured or custom-made in a non-series process in response to a specific order, and installed in a single identified construction work; (ii) construction products manufactured on the construction site; and (iii) construction products manufactured in a traditional manner or in a manner appropriate to heritage conservation.[55] Differently, the CPD did not provide for any derogation from the obligation to draw an Attestation of Conformity, though a simplified declaration of conformity could be drafted for individual and non-series productions.[56]

[49] Art. 68 CPR.
[50] Hence, the section does not aim at providing a full analysis of the new CPR framework. For a full analysis of the changes and the early implementation of the CPR, cf. RPA Study.
[51] Art. 13 CPD.
[52] Art. 4 CPR.
[53] Under the CPD, the Attestation of Conformity was not placed on the market; it was kept with the manufacturer and provided upon need or request.
[54] Art. 7 CPR.
[55] Art. 5 CPR.
[56] Art. 13.5 CPD.

CE marking. Under the CPR, all products covered by a hEN or a European Technical Assessment, and for which a DOP has been drawn up, must be CE-marked.[57] Under the CPD, CE marking was not mandatory in four MS: Finland, Ireland, Sweden, and the United Kingdom.[58] In addition to that, the meaning of the CE marking in the context of the CPR has been clarified.[59]

Product Contact Points for Construction (PCPC). According to the CPR, MS have to designate a PCPC to 'provide information, using transparent and easily understandable terms, on the provisions within its territory aimed at fulfilling basic requirements for construction works'.[60] To reduce the proliferation of contact points, existing national contact points (e.g. those foreseen under the Services Directive) or to national SOLVIT centres can be appointed as PCPC.[61]

Assessment and Verification of Constancy of Performance (AVCP). AVCP systems have been simplified by removing System 2, foreseen under the CPD.[62] Art. 37 allows micro-enterprises to use different methods for products covered by Systems 3 and 4, where so provided for in the hEN, and to resort to System 4 for products for which System 3 would be required. Art. 38 allows manufacturers to replace the AVCP with Specific Technical Documentation for individually manufactured or custom-made products in a non-series process.

Simplified testing provisions. The CPR has introduced severel simplified procedures, such as in the following cases: (i) tests have already been carried out for corresponding products (cd. 'test-sharing'); and (ii) for assembled products, tests have already been carried out on components (cd. 'cascading').[63] In those cases, type-testing or type-calculation needs to be replaced by Appropriate Technical Documentation. Some of the simplifications provided by the CPR, such as the above-mentiond, were already part of the broader CPD framework, but not included in the binding text.[64]

A.3.6 Administrative costs and cost savings linked to the obligation of providing information to customers (including the DOP and the CE marking)

In this section, the ***administrative costs and cost savings related to drafting and supplying the DOP and the CE marking under the CPD and the CPR*** are considered.[65] More in detail, under the CPD regime, i.e. between 2004 and 2012, costs arose from the preparation and storing of the AOC, and the preparation and supply of the CE marking; under the CPR regime, i.e. from 2013 onwards, costs have been generated from drafting and submitting to customers the DOP and CE marking.

The two tasks are considered jointly as a single business activity, as they are strictly linked to each other. Both the DOP and the CE marking rely on similar sets of information[66] and are prepared or updated through consequential processes. Because of their different nature (i.e. substantive costs), costs and cost savings linked to the Initial Type Testing (ITT) and the AVCP system are not covered here and considered below in Sections A.3.9 and A.3.10.

The tasks whose costs need to be quantified are the following:

1. ***Drafting/updating a DOP***, including drafting or updating any other document attached to the DOP (where relevant);
2. ***Access to hEN***;

[57] Art. 8 CPR.
[58] Art. 4 CPR. Cf. CPR IA, at p. 9.
[59], p.138.
[60] Art. 10 CPR.
[61] RPA Study, at p. 139.
[62] Cf. Annex III CPD and Annex V CPR.
[63] Art. 36 CPR.
[64] E.g., for test-sharing, cf. §4.13 of the Guidance Paper M concerning Council Directive 89/106/EEC.
[65] When collecting data relating to costs, companies are asked to provide the costs incurred to issue a DOP. As a result, the cost savings due to CPR simplifications, e.g. because of the eDOP, are already accounted for in the figures included in this section. In other words, the cost of issuing a DOP would be higher in the absence of an eDOP, but the savings are already included in the cost figures provided by companies. While a separate estimation of costs and cost savings cannot be presented in this section, savings due to specific simplifications introduced by the CPR are discussed in A.3.7 below.
[66] The DOP and the CE marking have been criticized for their overlap; cf. CPE Position Paper.

3. ***Supplying the DOP*** to customers;
4. ***Drafting, printing, and affixing the CE marking***.

The annual cost of drafting/updating a DOP for a typical manufacturing company is calculated through the following formula:

$$TC = (P_{new} * Q_{new}) + (P_{upd} * Q_{upd})$$

Where
TC: Total annual Costs
P_{new}: Cost of drafting a new DOP
Q_{new}: Number of new DOP drafted each year
P_{upd}: Cost of updating a DOP
Q_{upd}: Number of DOP updated each year

However, the formula could not be directly applied because ***no 'typical' Q for new and updated DOP is lacking across the firm population***, and even across homogeneous market segments. The number of DOP drafted or updated each year varies by three orders of magnitude, from 1 to 1100, primarily based on:

1. The ***sector***: in mature sectors, the number of product series is lower and more stable. In more innovative sectors, the number of product series is higher and new products, even with limitedly different characteristics, enter the market more frequently.[67] As for updates, technological changes are more frequent for certain products in innovative markets, while in stable market, according to interviewees, '*changes may take place even every 20 to 30 years'*. Differently, administrative changes – i.e. linked to the regulatory framework – take place with the same frequency for both innovative and mature products.
2. The ***company size***: larger companies have a larger catalogue and hence more product series; however, the relation is not linear, as medium companies with many product series, e.g. in a sector where the output is more diversified, may draft more DOP than a large company in a mature sector with few products.

On the contrary, the frequency of updates has a narrower distribution, and varies from 0.2 (e.g. one update every 5 years) to 1 (e.g. one update per year).

As a typical Q could not be estimated based on primary data, the Consultants tried to resort to secondary sources. However, secondary information on the numerosity of this obligation, i.e. the number of products or product series for which a DOP is drafted or updated, is lacking. Both public authorities and trade associations confirmed that they know no source providing thise data and providing estimates was not possible.[68]

Hence, another solution was attempted, by asking companies how many employees (in FTE) work on DOP preparation and updating, and whether other costs are incurred relating to the DOP preparation. However, a split between DOP preparation / DOP supply / CE marking preparation and supply appeared not to be realistic, because those tasks are usually conferred to the same people within a company. Hence, more aggregate data were collected on:

1. **The number of people working on the DOP and the CE marking, including drafting, supplying and storing**. Twelve companies provided the number of FTE working on the DOP and the CE marking preparation and supply. Very surprisingly, among the 13 available data points, all answers range between 0.5 and 2, while another company reports 5 FTE. Hence, clearly the number of people in charge of DOP tasks is largely unrelated to the size of the company. Based on the data retrieved, the following parameters are estimated:

[67] Cf. the UK IA, claiming that costs will vary between product types, and even within product types, depending on whether the product is mass produced or part of a short run/individual manufacture. In addition, for some product types sectors, the costs will be higher than this average because of the amount/type of testing required.
[68] A figurea retrievable from public databases is the number of hEN for construction products, amounting to 445. The information, however, is of limited usefulness, as information on how widely each standard is used and for how many product series is lacking. Cf. Commission Communication in the Framework of the Implementation of Regulation (EU) No 305/ 2011, Publication of titles and references of harmonised standards under Union harmonisation legislation, 2015/C 378/03.

a. A typical medium or large company – i.e. a firm with more than 49 persons employed - employs 2 FTE (usually a technician and one/two clerks) to deal with the DOP and the CE marking;
b. A typical SME – i.e. a firm with 10 to 49 persons employed - employs 1 FTE (either a technician, or a technician and a clerk) to deal with the DOP and the CE marking;
c. Micro-enterprises account for 80% of the company population according to available Eurostat data, with an average number of persons employed equal to 2.35.[69] Based on experts' estimate, 0.2 FTE are considered to be devoted to the DOP and the CE marking.

Monetised values per typical enterprise are shown in Exhibit A.3.2 below.

Exhibit A.3.2 Unitary labour costs for DOP and CE marking, including drafting, supplying and storing

	Technician	Clerk	Salary: Technician	Salary: Clerk	Total Costs
Typical Micro	0.2 FTE	-	€ 37,142	€ 29,076	€ 7,428
Typical Small	0.2 FTE	0.8 FTE			€ 30,689
Typical Medium-Large	0.5 FTE	1.5 FTE			€ 62,185

Source: Interviews with firm and Eurostat Earnings Structure[70]

2. **Out-of-pocket costs for buying European Standards**. The costs incurred to buy European Standards where provided by 12 companies and range from €80 to €40,000 per year.[71] The costs vary depending on whether the company buys only hEN, or rather a subscription from a standardisation body or private service provider for both access to standards and other tailored services. Excluding companies with special subscriptions, 9 data points remain, ranging between €80 to €4000, with a median value amounting to €1,000. The latter is considered the typical cost.

3. **Other costs linked to the DoP and the CE marking**. This cost parameter was investigated through two kinds of costs: (i) the costs linked to supplying the DOP and the CE marking to customers; and (ii) other costs (excluding AVCP costs). As for the annual costs incurredto supply the DOP and the CE marking to customers, 10 data points are available, ranging from €100 to €30,000, with a mean and a median amounting to €9,232 and €6,000 respectively. Again, costs are not correlated to firm size. The median, i.e. € 6,000 per year, is considered as the typical cost. As for the other costs, only three companies reported other expenses, such as the cost of familiarisation, the cost of setting up a website, or the cost of buying new labelling machines. Given that most of the respondents did not mention these costs, the typical value is assumed to be €0. The other costs linked to the supply of other documents attached to the DOP are discussed in Box A.3.1 below.

Box A.3.1 Other documents and information on chemicals

In certain cases, other pieces of EU legislation may require manufacturers to attach additional documents to the DOP. This is for example the case of the safety data sheet or the information on restricted substances required by the REACH Regulation, [72] or safety instructions. In particular, art. 6.5 CPR mandates that certain information required by REACH in art. 31 and 33 shall be provided with the DOP. Three companies mentioned the need to attach other documents to their DOP, either by law or upon customers' demand, but did not mention any problem with this requirement. Two trade associations indicated that the requirements under the CPR concerning REACH information are not yet fully clear, but that the relation between the CPR and REACH is not causing problems at the moment as '*we managed around this issue*'. A risk of future overlap between the CPR, on the one hand, and REACH and other chemical legislation, on the other, is

[69] Statistics on the firm size distribution are available at NACE 3-digit level, while some of the sectors included in the definition are at NACE 4-digit level; as an approximation, the share of micro, small, medium, and large companies in the corresponding NACE 3-digit group was used.
[70] Earnings refer to 2010 data for EU28, inclusive of 25% overheads; annual salaries are calculated based on 200 working days per year and 8 working hours per day.
[71] From a supply-side perspective, a typical price to access hEN cannot be identified, as it depends on various factors: access to electronic or paper version, additional services associated with the purchase of the document, size of the document, country of establishment, market demand for a specific hEN, translation costs. CEN provides a guidance on standard prices, but no price list or binding rules.
[72] Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC.

considered possible. Trade associations would prefer the CPR to remain the applicable and prevailing legislation also for the chemical properties of construction products. As underlined, REACH concerns the assessment of the exposure to chemical risks for humans and the environment, while the CPR does not deal with exposure and risks, being a product-based regulation. For this reason, the level of detail required from manufacturers under the CPR, e.g. in the case of the release of dangerous substances, is higher than for the information that would be required under REACH. Hence, the CPR would be better equipped to deal with chemical-related information on construction products, also through the standardisation process (a hEN should indeed cover the release of dangerous substances as from next year).

Based on these cost parameters, the administrative costs and cost savings linked to the obligation of providing information to customers (including the DOP and the CE marking) are estimated as shown in Exhibit A.3.3 below.

Exhibit A.3.3 Unitary administrative costs and cost savings linked to the obligation of providing information to customers (including the DOP and the CE marking)

	Labour Costs	Access to hEN	Costs for supplying DOP and CE marking	Other costs	Total Costs
Typical Micro	€ 7,428	€ 1,000	€ 6,000	-	€ 14,428
Typical Small	€ 38,494				€ 45,494
Typical Medium-Large	€ 78,257				€ 85,257

To estimate administrative burdens, the BAU factor needs to be determined. Two preliminary considerations are made: (i) product manufacturers would inform customers of the performance of their product even without the CPR; and (ii) the prescribed tools, i.e. the DOP and the CE marking, are made necessary by the CPR. Since these two considerations lead to inconsistent conclusions, the Consultants asked companies, trade associations, and other stakeholders about the commercial value of the DOP, both through the interviews and the surveys. The results are summarised in Exhibit A.3.4 below.

Exhibit A.3.4 To what extent do the DOP and the CE marking convey commercial information?[73]

	Firms (interviews)	Stakeholders (survey)
Not at all	8%	14%
To a limited extent	0%	43%
To some extent	23%	26%
To a high extent	69%	17%
Data points	*13*	*35*

Source: Interviews with firms and stakeholder survey

The distribution of opinions is quite different across the two groups: for firms, the modal answer is 'to a high extent', selected by two thirds of the respondents. Still, opinions from interviews are quite polarised: one respondent mentioned that the DOP and the CE marking are '*very important, because they convey information about the quality of the product*'; another considered '*a big mistake to think of the DOP as useful for the user: it is a legal requirement and no customer asks for it; most customers, including professionals, would not even understand its content'*. For trade associations and other stakeholders, the modal answer is 'to a limited extent' – two ladders below –, selected by more than 40% of respondents. One association commented that '*the DOP includes what the legislators consider relevant, and not what customers need or want, as confirmed by contractors*'.[74] By applying quantitative weights to the qualitative answers,[75] the BAU factor would be estimated at 64% based on firms' answers, and at 36% on trade associations'. Given that answers from trade associations and other stakeholders are more representative of the diverse construction product industries, also including SME and non-exporting companies, the BAU factor is estimated at 40%.

[73] The question was phrased as follows: 'Considering the information included in the DoP and the CE mark, to what extent can it be considered 'commercial information', i.e. information which has a value for you as a supplier or that would be demanded by the customer?'.

[74] A contractor association claimed that its members have '*extreme views'* about the usefulness of the DOP, being '*very useful for someone, completely useless for others*'. In any case, '*the choice of construction products is based on trust and long-standing relations, rather than on the information provided under the CPR framework*'.

[75] Quantitative weights are as follows: (i) not at all = BAU factor 0%; (ii) to a limited extent: BAU factor 25%; (iii) to a significant extent: BAU factor 50%; and (iv) to a high extent: BAU factor = 75%

Based on the cost parameters and the BAU factor discussed above, the administrative burdens and burden savings linked to the obligation of providing information to customers (including the DOP and the CE marking) are estimated in Exhibit A.3.5 below.

Exhibit A.3.5 Administrative burdens and burden savings linked to the obligation of providing information to customers (including the DOP and the CE marking)

	Administrative burdens
Typical Micro	€ 8,657
Typical Small	€ 27,296
Typical Medium-Large	€ 51,154

Based on the sector definition, as described in Section A.2.2 above, the number of enterprises operating in 2013 is estimated at 245,289. According to Eurostat data, the share of medium and large enterprises can be estimated at 3.72%, the share of small enterprises at 12.58%, and the share of micro enterprises at 83.70%.[76] Based on these parameters the ***total administrative burdens for the EU28 in2014 can be estimated at € 3.1 bln***. This amount accounts for ***1.1% of the sectoral turnover***.[77] These costs are higher than those quantified by the IA background study, but estimates are hardly comparable because of methodological differences and of the different time period to which data refer. This discrepancy will be further explored in Section A.3.12 below[78]

Cost differential between the CPR and the CPD linked to the obligation of providing information to customers (including the DOP and the CE marking)

The possible cost differentials between the CPR and the CPD for this activity are the following:

1. **Change in the number of employees working on the DOP and the CE marking**. Thirteen companies provided information on this possible cost differential, with 10 indicating that no change occurred. Differently, three companies reported an increase in the workforce, with 2 quantifying the increase (+5% and +20% respectively). According to these data points, the typical company is estimated not to have increased the number of employees working on the DOP and the CE marking after the introduction of the CPR.

2. **Other one-off costs, related to the DOP or the CE marking.** First of all, the costs for supplying the DOP only relate to the CPR, as the CPD did not provide for this obligation. Hence, these costs, amounting to € 6,000 as shown in Exhibit A.3.3 above, are considered as CPR-specific costs.[79] As for other one-off costs, data provided mixed evidence. 6 out 12 companies reported to have incurred other one-off costs related to the CPR, while according to trade associations and other stakeholders, 72% of the companies incurred some one-off costs. The magnitude of one-off expenses may be significant, ranging from several thousand € to more than one-hundred thousand €. In general, large companies report higher costs. The categories of costs reported include: (i) new DOP; (ii) change in packaging; (iii) databases and online platforms; (iv) familiarising both the staff and the customers; (v) the costs for softwares; (vi) changes in internal management procedures; (vii) purchase of new standards (in case they were released to comply with the new framework); (viii) printing equipment and materials; and (ix) translation. Some interviewees also lamented the lack of clarity of the legal framework right after the CPR was introduced: '*[we] had a series of interpretative meetings [on the DOP] with industry representatives and public authorities, and nobody could agree on the content and format of the DOP*

[76] See note 69 above.
[77] Source for turnover: Eurostat SBS.
[78] The IA background study adopts a counterfactual *ex ante* methodology and attempts to measure the additional cost compared to a baseline in which no CPD/CPR is adopted, while this Study measures costs effectively borne by manufacturers over the 2004-2014 period. In the IA Background Study (at p. 41), the costs for various sectors were estimated at between 0% and 0.9% of the total turnover. In any case, the data relating to 2006 (as the study dates back to 2007) are much closer to those estimates, as the share of costs over turnover is estimated at 1.4% (see Exhibit A.3.6 below).
[79] See table A.3.3 above. The full figure is considered, as the bulk of the costs reported under this item are related to the DOP rather than the CE mark.

for 1.5 years; [our] technical department spent 10 to 20% of their time trying to understand the changes brought about by CPR'. For this reason, in certain countries, governments have heavily invested in the dissemination of and the familiarisation with the CPR framework. Based on the information retrieved from both the interviews and the survey, the following estimates are made: 30% of the companies did not incur other one-off costs after the introduction of the CPR, while 70% did. The estimate is in line with previous evidence: according to the RPA study, more than half of the surveyed companies had to adapt their internal system, e.g. by updating the IT systems, databases, websites, or preparing and translating DOP.[80] As a result, the cost differential is estimated at €3,000 for SME and €10,000 for large enterprises.[81]

3. **Change in the population of companies subject to CE marking obligations** (relevant in the MS in which it was not mandatory). Out of the 15 companies interviewed, 5 were based in a MS in which the CE marking was not mandatory; in all cases, products were CE marked also before the CPR became mandatory for business reasons, including the need to signal quality to customers and the interest in accessing other EU markets. Analogously, the sample also included 2 companies for which the CE marking was not mandatory because of the lack ofan applicable hEN. Both, however, decided to CE-mark their products for business reasons, and in particular because '*the CE mark is a very good way to certify products, because they are then perceived as comparable to those manufactured by large companies […]: for certain products, the CE mark became a* de facto *business standard*'. The business push for the CE-marking also applied to companies that did not export, and to sectors whose output is tradeable only at limited distances, such as cement. The issue was further investigated with EU and sectoral trade associations, and the result was largely confirmed, with the exception of specific sectors and/or products (e.g. aggregates). Based on this information, the share of companies which CE-marked their products only after the introduction of the CPR is estimated at 20% of the enterprises in Finland, Ireland, Sweden, and the UK.[82]

4. **Change in the number, frequency of updates, and/or burdensomeness of the DOP and the CE mark**. 13 companies provided information on this cost differential, with 7 reporting no change between the CPR and the CPD, and 6 indicating changes. However, in two cases changes are specific to the European Organisation for Technical Assessment (EOTA) route, which is discussed more in detail in Box A.3.2 below. Only one company quantified the additional burden, amounting to 10%. For these reasons, this differential is conservatively costed at € 0 for the typical company.

Box A.3.2 Costs for the EOTA route

In principle, the costs incurred under the EOTA route can hardly be considered as regulatory costs, since ETA is a voluntary alternative for construction products not covered by hEN. Furthermore, these costs only concern a small segment of companies, and, as a consequence, are unlikely to enter the 'typical cost' estimation performed via the SCM. For this reason, the costs incurred under the EOTA route are not considered alongside other categories of costs in this section. However, these costs do impact the competiveness of firms in certain sub-sectors, and are significantly higher than the costs incurred under the hEN route. Importantly, some companies and associations reported that CE marking has become a '*de facto* requirement', putting these costs into a grey area which is very close to regulatory costs, at least for products for which CE marking is in practice necessary to remain in the market.

In brief, the EOTA allows manufacturers to draw up the Declaration of Performance and affix the CE marking on products not covered by applicable hEN. To do so, the manufacturer has to request the ETA to a Technical Assessment Body,

[80] Cf. RPA Study.

[81] The UK IA Study estimated one-off costs at £ 4,000 / € 4,490. The RPA Study includes some case-specific estimates, though related to the whole transition from the CPD to the CPR, and not specifically to the changes related to the DOP and the CE marking. In particular, a UK company operating in the pavement sector spent about €270,000 for the CE marking, including testing, Factory Production Control (FPC), drawing of a DOP and labelling and packaging adjustments; on a different note, Irish notified bodies suggested that the costs for steel product manufacturers are likely to be in the range of €8,000 - €15,000. Importantly, these data include the ITT and the AVCP costs.

[82] Based on the information retrieved, the estimate is higher than thatin the UK IA. Also in that study, data on the number of companies or products already covered by the CPR were not available. The study calculated that 86% of the UK market for construction products (in value terms) was potentially subject to CE marking, and that the CE mark was already voluntarily adopted for one third of these products.

which can issue the document based on the EAD, as developed by the EOTA. One SME reported that the EOTA procedure, including drafting and translating the ETA, as well as testing costs, required an investment of €350,000 over 7 years, on top of the labour costs incurred for managing 'usual' CPD/CPR compliance. ITT alone would cost about €50-60,000. EOTA costs would thus amount to 0.7% of the turnover. Moreover, ETA are also more difficult to supply, given their size (e.g. about 100 pages in one case), which makes their provision as an electronic document difficult.

Diachronic analysis. In Exhibit A.3.6 below, the total administrative burdens and burden savings generated by the CPD/CPR obligation of providing information to customers (including the AOC, the DOP and the CE marking) for the period 2004-2014 are reported. The following assumptions are made:

1. **Q: Number of companies**. Baseline data are taken from Eurostat SBS, as presented in Section A.2.2 above.[83] The share of large enterprises is assumed to amount to 0.47%, based on Eurostat SBS.[84] For the period 2004-2012, 20% of the companies in Finland, Ireland, Sweden and the UK are assumed not to have incurred CE marking costs. Romanian and Bulgarian companies are considered from 2008 onwards, Croatian from 2013 onwards;
2. **P: Annual cost**s. As discussed in this section, the cost estimates retrieved from companies refer to the most recent situation, i.e. to 2014. Since the collection of cost data referring to the whole period could not be carried out, information on time trends in general, and in particular on cost differentials between the CPR and the CPD, was collected from companies. As already reported, data concur that the workload was quite stable across the whole period. The introduction of the CPR brought about changes, in particular in the content of the DOP (compared to the AOC), and with regard to the duty to supply the DOP to customers. While the former is one-off cost that is discussed further below, the additional costs for providing the DOP (€6,000 per year, as estimated above) are considered from 2013 onwards. For previous years, in the absence of major regulatory-driven changes, costs are deflated through the price index for construction inputs.[85]

Exhibit A.3.6 Administrative burdens linked to the obligation of providing information to customers (including the DOP and the CE marking): 2004 – 2013, one-off costs excluded

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Population	197,426	209,048	222,138	258,458	258,120	249,030	255,907	256,237	247,711	245,289	245,289
Micro	165,245	174,973	185,930	216,330	216,047	208,437	214,194	214,470	207,334	205,307	205,308
Small	24,837	26,299	27,946	32,515	32,472	31,329	32,193	32,235	31,162	30,857	30,857
Medium&Large	7,344	7,776	8,262	9,613	9,601	9,264	9,520	9,532	9,215	9,125	9,125
Annual Burden per Enterprise	-										
Micro	€2,641	€2,642	€2,644	€2,645	€2,646	€2,647	€2,649	€2,650	€2,651	€8,653	€8,657
Small	€16,836	€17,429	€18,174	€18,924	€19,735	€19,831	€20,117	€20,716	€21,074	€27,193	€27,296
Medium&Large	€35,717	€36,976	€38,555	€40,147	€41,867	€42,071	€42,677	€43,949	€44,709	€50,961	€51,154
Total burdens	€ 1.1 bln	€ 1.2 bln	€ 1.3 bln	€ 1.6 bln	€ 1.6 bln	€ 1.6 bln	€ 1.6 bln	€ 1.7 bln	€ 1.6 bln	€ 3.1 bln	€ 3.1 bln
Micro	€ 0.4 bln	€ 0.5 bln	€ 0.5 bln	€ 0.6 bln	€ 0.6 bln	€ 0.6 bln	€ 0.6 bln	€ 0.6 bln	€ 0.6 bln	€ 1.8 bln	€ 1.8 bln
Small	€ 0.4 bln	€ 0.5 bln	€ 0.5 bln	€ 0.6 bln	€ 0.6 bln	€ 0.6 bln	€ 0.6 bln	€ 0.7 bln	€ 0.7 bln	€ 0.8 bln	€ 0.8 bln
Medium&Large	€ 0.3 bln	€ 0.3 bln	€ 0.3 bln	€ 0.4 bln	€ 0.4 bln	€ 0.4 bln	€ 0.4 bln	€ 0.4 bln	€ 0.4 bln	€ 0.5 bln	€ 0.5 bln
% Turnover	0.4%	0.4%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	1.1%	1.1%

Exhibit A.3.6 does not include one-off costs incurred by companies because of the transition from the CPD to the CPR, i.e. in 2013. As discussed above, these costs are estimated at €3,000 for small companies and €10,000 for large companies, assuming that 30% of thr companies incurred in no one-off costs. ***One-off costs would amount to €522 mln*** for the whole sector,[86] annualised over the years 2013 and 2014, as shown in the final quantification in A.3.10 below.

A.3.7 Administrative cost savings linked to the possibility of derogating from the DOP and/or posting the DOP online

[83] Data on the number of companies in 2014 are not available; hence, 2013 data are used. Data for the period 2004-2007 are not consistent due to the NACE revision, hence an extrapolation based on turnover and average turnover per company in the period 2008-2013 is used.
[84] See note 69 above.
[85] Index on input prices for materials, source: Eurostat.
[86] More in detail, all large enterprises are assumed to have incurred one-off costs.

In this section, the administrative cost savings linked to the possibility of derogating from the DOP and/or posting the DOP online are discussed. These savings are related to:

1. The issuance of the DOP via electronic means (***eDOP***);
2. ***Art. 5 derogations*** from the obligation to issue a DOP.

The RPA study found that art. 5 derogations are only limitedly used, while being more positive about the use of the eDOP.[87] The former claim was confirmed by early exchanges with stakeholders. For this reason, given the low likelihood of capturing companies actually using art. 5 derogations, firms were asked only about the eDOP, while trade associations and other stakeholders also about art. 5 derogations.

Provision of the eDOP. The issuance of the eDOP is regulated by art. 7 CPR and by a Commission delegated act.[88] The RPA study acknowledged a certain use of the eDOP, though detailed information is only available for specific MS or sectors. Reportedly, some sectors (e.g. steel products) are more reluctant to provide an eDOP,[89] and some customers only accept a paper-based DOP. No information on cost savings is available from secondary sources.

The most recent evidence from both the firm interviews and the survey – collected about 15 months later compared to RPA data– differ significantly and opinions changed considerably. Among the 13 companies that provided an answer, only 1 did not opt for the eDOP, and 3 firms supply both the eDOP and the paper version; on the contrary, ***9 companies declared that they provide only the electronic version***. ***Survey data also show that the eDOP is largely used by product manufacturers, as claimed by more than 70% of respondents***.[90] Still, one trade association indicates that *'[the] costs for conversion to fully internet-based DOP [are] not affordable for SME*'.

One possible reason for the discrepancy is the time elapsed between the approval of the delegated act and the current round of data collection. As reported by some associations, at the beginning '*manufacturers had issues making the DOP available on a website instead of suppling paper copies […] due to legal uncertainties and the unavailability of the delegated act*' and '*as the Delegated [Act was] published a while after the CPR was fully set into force, the industry suffered from uncertainties*'.

Concerning the acceptance of the eDOP, 11 firms provided an answer during the interview, all reporting the ***no problem was encountered with their customers***. In the words of a trade association, '*customers have no preference as to how DOP are supplied*'. As mentioned, however, in a few cases customers still want a paper version, but the manufacturer can '*deliver it via post on an ad-hoc basis*', or '*supply the distributor with an electronic version of the DOP, and the distributor can then print it upon request*'. The acceptance of the eDOP is reportedly very high also according to the stakeholder survey. [91] The ways the eDOP is supplied include: (i) the upload of the eDOP on the company website, in either a public or restricted area; (ii) the upload of the eDOP on the different website; (iii) the outsourcing of the service to an external provider – including setting up an electronic database available online to customers; and (iv) the shipping of physical supports (e.g. CD) to distributors.

The information on the cost savings due to eDOP is scarce, mainly because very few of the companies which were interviewed still rely on the paper version. ***All interviewees using the eDOP considered it cheaper or much cheaper than the paper version***. This holds even more true for the suppliers of products which are sold in small boxes/quantities, such as nails, because the costs of the paper-based DOP would be higher than product price. Two firms were able to quantify savings, with one medium-sized company estimating them at €100,000, and a large company estimated at about 50% of the DOP supplying costs. These savings, which are already

[87] RPA Study, at p. 22.
[88] Commission Delegated Regulation (EU) No 157/2014 on the conditions for making a DOP on construction products available on a website.
[89] RPA study, pp. 20-21.
[90] The question was phrased as 'Do construction product manufacturers represented by your association resort to electronic supply of the DoP (e.g. via their website)?', and the answer was 'to a high extent' in 71% of cases.
[91] The question was phrased as 'Do customers of product manufacturers represented by your association accept electronic supply of the DoP instead of the paper version?', and the answer was 'to a high extent' in 69% of cases.

accounted for in the figures presented in section A.3.6,[92] suggest that resorting to the eDOP provision offers very high benefits. However, quantitative data points are too thin to extrapolate results to the entire firm population. If the 50% saving was representative of the typical firm, annual savings would amount to €1.4 bln compared to a situation in which the eDOP were to be submitted mandatorily as a paper document.[93] Further investigation on this issue is recommended within the context of the incoming study on the CPR economic impacts..

Art. 5 derogations. According to art. 5 CPR, in specific cases products falling within the scope of a hEN or an EAD, and thus in principle subject to the obligation to draw up a DOP, can be exempted. These products include (i) products individually manufactured or custom-made in a non-series process in response to a specific order, and installed in a single identified construction work; (ii) construction products manufactured on the construction site; and (iii) construction products manufactured in a traditional manner or in a manner appropriate to heritage conservation. Importantly, these product categories may be relevant for certain sub-sectors (e.g. handmade bricks or stone, special windows), but irrelevant for others (e.g. cement).

Through the survey, stakeholders where first asked whether these derogations apply to companies in their sector,[94] and 36% of respondents replied that this was not the case. Among the 16 respondents for which art. 5 derogations were relevant, most of them (63%) replied that they knew of no cases in which these derogations were resorted to; 5 respondents mentioned that this derogation is used for products manufactured on the construction site; and only 1 for traditionally-manufactured products. Those findings are consistent with the findings of the RPA report.

Stakeholders were also asked about the problems and opportunities arising from the use of art. 5 derogations. Qualitative replies suggest that art. 5 is not sufficiently clear, as far as both the text and its interpretation by national authorities are concerned. The possible provision of a common interpretation by the Commission, e.g. via soft law, is considered useful in addressing this shortcoming.

A.3.8 Administrative cost savings due to the easier accessibility of information through the Product Contact Points for Construction (PCPC)

The PCPC were introduced by the CPR to reduce the burdens for companies to familiarise with construction product and building legislation in other EU MS. In the context of the recent RPA study, a survey was conducted on the activities of the PCPC, providing useful data to determine the benefits (administrative cost savings) for construction product companies and contractors.[95]

Based on the Commission official documents, as of January 2015 PCPC were established in all 28 EU Member States.[96] Still, the level of awareness among companies is quite low. The RPA study found that 57% of the surveyed companies in the construction sector were not aware of the PCPC, 43% were aware of their national PCPC, and only 18% of the PCPC in other MS. Importantly, 15% of the sampled companies had ever resorted to a service provided by a PCPC, and, interestingly, most of the requests were addressed to the PCPC of the MS in which the company was based for queries about national legislation.

The RPA study provides the number of requests received per year by 12 PCPC, amounting to1770 in 2014.[97] The number of requests is not proportional to the economic size of the economy, or to the size of the construction or construction product sectors (e.g., 150 queries are reported for Croatia, 140 for Lithuania, while 100 for France and 50 for Spain). Hence, to extrapolate this value to the EU28, an average number of yearly

[92] See note 65 above.
[93] The typical annual costs for supplying the DOP were estimated at €6,000 (see Exhibit A.3.3 above); if the eDOP generated a 50% savings, the annual costs would amount to €12,000, and the saving to €6,000 per company.
[94] The question was phrased as 'Among the companies that you represent, are you aware of product manufacturers using derogations from the duty to draw up a DoP for the following categories of products?'.
[95] Cf. RPA study at p. 36 and ff.
[96] European Commission, DG Enterprise and Industry, List of Product Contact Points for Construction (Regulation (EU) 305/2011, Art 10), available at: http://ec.europa.eu/DocsRoom/documents/4170/attachments/1/translations/en/renditions/ native
[97] For some countries, data refer to a typical year (and thus may also reflect 2013); where ranges are provided, the median value was used; finally, data include both requests from national and other EU companies.

request equal to 147.5 per national PCPC is assumed. The overall number of requests received by all EU28 PCPC would then total 4,130.

Once the number of yearly requests is estimated based on RPA data, to calculate total savings a set of assumptions is needed on the value of the time and cost saved:

1. Requests to PCPC may save: (i) internal work, i.e. the time needed to familiarise with unknown or uncertain legal provisions, and retrieve information from national and local authorities; and (ii) external costs, i.e. when consultants are resorted to to provide information on unknown or uncertain legal provisions;
2. Companies are likely to use PCPC for small- or medium-complexity requests; for very complex issues, a company is likely to resort to its own internal resources or to external consultants in any case.

Three typical requests are defined based on these assumptions:

1. Very simple requests, implying a saving of four person-hours without the involvement of external consultants;
2. Simple requests, implying a saving of one person-day with external consultants involved in 20% of the cases for a fee amounting to €400;
3. Medium requests, implying a saving of two and a half person-days with external consultants involved involved in 50% of the cases for a fee amounting to €1,000.

Three scenarios are then developed to allow for a range of likelihood of each category of requests:

1. Scenario A: 70% very simple requests; 20% simple requests; 10% medium requests;
2. Scenario B: 50% very simple requests; 30% simple requests; 20% medium requests;
3. Scenario C: 40% very simple requests; 35% simple requests; 25% medium requests.

Based on the number of requests as extrapolated from the RPA study, the average hourly salary rate for a technician inclusive of overheads (€23.2, source: Eurostat Earnings Statistics), the saving per request and the scenarios, the range of administrative cost savings is calculated as follows.

Exhibit A.3.7 Administrative cost savings due to the PCPC

	Requests			Savings			Internal Labour Costs	External Costs	Total
	Very Simple	Simple	Medium	Very Simple	Simple	Medium			
Scenario 1	2891	826	413	€ 268,285	€ 188,724	€ 302,316	€ 486,745	€ 272,580	€ 759,325
Scenario 2	2065	1239	826	€ 191,632	€ 283,087	€ 604,632	€ 567,231	€ 512,120	€ 1,079,351
Scenario 3	1652	1446	1032	€ 153,306	€ 330,382	€ 755,424	€ 607,432	€ 631,680	€ 1,239,112

The ***administrative cost savings linked to the use of the PCPC then range between € 760,000 and € 1.2 mln***. Since information on the trend of requests to the PCPC is lacking, the same level of savings is attributed to both 2013 and 2014. Though based on expert assessment rather than primary information, these savings remain quite low if compared to overall costs; consequently, even significant variations in the assumptions would not have a large impact on the final results. The low magnitude is due to the quite limited number of requests submitted so far to the PCPC, and could increase with time, as soon as more companies become aware of this opportunity.

A.3.9 Substantive costs/cost savings linked to the obligation for manufacturers to put in place factory production controls and to have an AVCP performed

In this section, the costs due to the obligations linked to the AVCP system, including Initial Type Testing (ITT) and Factory Production Control (FPC), are assessed. Unlike other costs generated by the CPR/CPD, and in line with the European Commission Better Regulation Toolbox,[98] these costs are classified as substantive. The same classification applies to the savings linked to simplifications in the area of testing and AVCP, discussed below in section A.3.10.

[98] Better Regulation Toolbox, Tool #53.

ITT and AVCP procedures vary according to the applicable AVPC system, which is determined by Commission secondary acts. Exhibit A.3.8 below shows the role of the manufacturer and of the notified body, where involved in the AVCP systems.

Exhibit A.3.8 Activities for manufacturers and notified bodies in the various AVCP

	1+	1	2+	3	4
FPC	Manufacturer	Manufacturer	Manufacturer	Manufacturer	Manufacturer
Initial FPC inspection	Notified Body	Notified Body	Notified Body	-	-
Continuous FPC surveillance	Notified Body	Notified Body	Notified Body	-	-
Factory Sample Test	Manufacturer	Manufacturer	Manufacturer	-	-
ITT	Manufacturer	Notified Body	Manufacturer	Notified Body	Notified Body
Audit testing	Notified Body	-	-	-	-

Source: Construction Product Association

The tasks whose costs need to be quantified are the following:

1. **Testing**, including both ITT and other testing;
2. **FPC** measures.

The parameters which need to be determined are the following:

1. Number of employees working on testing;
2. Frequency of testing:
3. Share of ITT and other tests carried out in-house vs. outsourced;
4. Operational and external costs incurred for testing;
5. Number of employees working on the FPC;
6. Operational costs for the FPC;

As discussed in Box A.3.3 below, the data points to estimate this cost item are extremely variable across the firm population, preventing the identification of typical cost parameters. However, this is of limited relevance to the analysis once the BAU factor is taken into account. Opinions on the BAU factor are extremely consistent, as all companies reported that ***most or all costs incurred for the AVCP, including initial testing, ongoing testing, and other factory production control measures, would be incurred in any case because of quality management and to provide information on product performance to customers***.[99] In particular:

1. Declaring the product performance (even with tools different from the DOP and the CE marking) requires some form of initial testing;
2. Ensuring quality production requires ongoing testing and other quality management processes, that is factory production control, tools and equipment.

For instance, one firm claimed that '*performance tests have nothing to do with CPR; [we] would do it as part of [our] normal production process and quality management'.* Actually, one contractor federation even claimed that '*trust in AVCP is low in certain countries, so that market requirements go beyond what would be needed under the CPR, e.g. as for the intervention of a notified body'.* To corroborate this assumption, even in countries where the DOP and CE marking obligations were not mandatory, companies still carried out testing and quality certification, and thus reported few additional costs due to the CPR framework.

The CPD/CPR mandate specific requirements for the AVCP system, in particular whether certain steps (e.g. initial FPC inspection, factory sample test, or audit testing) have to be undertaken. However, firms reported that most of the quality management systems require similar procedures, including the most widespread ones (e.g. ISO 9001), product-specific certifications, or country-specific certifications. Indeed, '*a company that aims at achieving a quality certification for its products would perform test similar to those required for the DOP and CE marking, even in the absence of any mandatory provision*'. Interestingly, a company uses the same CPR procedures also for the FPC for extra-EU markets. At the same time, the CPD/CPR requires companies to resort to notified bodies for certain products and certain steps of the quality management process. However, again, other quality management systems require the use of external certifiers; besides, with regard to initial testing, firms, especially SME, may not have the necessary laboratories and equipment available in

[99] This hypothesis may not be entirely true for small operators in certain sub-sectors, i.e. those selling simple products in local markets, where past business relationships make the provision of technical information less crucial.

house. Possibly, the legal requirement to use notified bodies increases the demand for such a service in a market where access is constrained by the accreditation system, thus increasing the price; however, fact-based data to disentangle such a price-driver could not be retrieved.[100] Anecdotal evidence from interviews seem to point out that, at least in certain MS, the market for notified body's services is becoming more competitive, putting a downward pressure on the price. At the same time, reportedly, in certain countries, especially the smallest, the provision of notified body's services is so limited that companies have to go abroad for testing certain products.

All in all, the Consultants suggest considering the obligation for manufacturers to put in place factory production controls and to have an AVCP performed as a BAU-activity, i.e. a ***BAU factor amounting to 100%.*** When confronted with this hypothesis in the interviews, most of the respondents agreed, while some other suggested that some costs should still be considered as regulation-driven. However, as discussed above, the elements to identify this small share of non-BAU costs are not sufficiently consistent across the firm population to provide a reasonable estimate.

Box A.3.3 Cost parameters for the AVCP

As anticipated, the data points collected on AVCP costs are company or even factory specific and do not allow to identify a typical parameter in most cases. Details on the data collected are provided below.

Number of employees working on testing. 13 companies were able to provide information on the number of employees working on testing. The answers given range from 1, for three companies when only one technician is responsible for testing operations, to 80, including two companies that reported that all factory workers are involved to some extent in testing operations. The value varies significantly based on (i) the sub-sector; (ii) the firm dimension; and (iii) the business model (i.e. centralized vs. diffused testing).

Frequency of testing. The frequency of the ITT depends on how often a new or an updated DOP is issued. The frequency of the ITT on a product series varies from once per year to once every five years. As for updating the DOP, the parameter changes for products in more mature or more innovation-driven markets. However, the total number of the ITT depends not only on the frequency of testing, but also on the number of DOP,[101] which adds another layer of variability to the estimation. The analysis is even more complex for testing other than the ITT, i.e. those linked to quality control and/or the FPC. Companies in various markets differ widely as for their testing strategies: testing frequency can be twice per week, daily, twice per day, hourly, or for each production batch.

Share of the ITT and the other tests carried out in-house vs. outsourced. For ITT costs, the use of external test providers may be mandated by the applicable AVCP system. Indeed, for 7 companies out of the 13 providing this information, the share of outsourced ITT tests ranges between 95% and 100%. However, 4 companies reported that only between 10% and 20% of the ITT tests are outsourced. For the FPC and the other tests, most companies use internal control equipment or laboratories.

Operational and external costs incurred for testing. The categories of costs reported include: (i) the cost of the equipment; (ii) the costs for internal tests; and (iii) the fees for notified bodies. 12 companies were able to provide a cost estimate of operational and external testing, again with a very high variability. The drivers for such a variation are again (i) the sub-sector; (ii) the firm dimension; and (iii) the requirement to involve the notified bodies.

Number of employees working on the FPC. 12 companies could provide information on the number of employees working on the FPC, with answers ranging from 0.5 to 80, again signalling that in certain companies all employees are assigned certain FPC and quality control tasks. As in the case of the employees working on testing, the number of workers working on the FPC varies widely according to (i) the sub-sector; and (ii) the firm dimension.

Operational costs for the FPC. The categories of costs mentioned include: (i) the fees for the notified bodies certifying the FPC, according to the applicable AVCP system; (ii) the cost of the certification of the quality management systems; and (iii) the cost of quality surveillance. 12 companies were able to provide an estimation of operational costs, with answers ranging from €3,000 to €800,000. As in the case of testing costs, the variation is driven by (i) the sub-sector; (ii) the firm dimension; and (iii) the requirement to involve the notified bodies.

[100] Interviewed firms were surveyed about the 'unit price' of tests by a notified bodies. This question was considered unfit, because a typical unit price does not exist, as it depends on (i) the type of product; (ii) the parameters that need to be tested. Values reported vary from few € to € 80,000.

[101] That is, frequency of ITT times the number of DOPs.

Cost differential between the CPR and the CPD linked to the obligation of providing information to customers (including the DOP and the CE marking)

To estimate the cost differentials between the CPR and the CPD for this item, interviewees were asked whether testing costs or FPC costs changed after the adoption of the CPR. All companies reported that neither testing costs nor FPC costs were modified by the introduction of the CPR,[102] e.g.'*[t]esting was going on at the same rate under the CPD and did not change after the CPR; the only thing that really changed is the paperwork (DOP).'* As a result, the Consultants to confidently state that no cost or cost savings was brought about by the CPR with respect to AVCP costs. This conclusion is consistent with, and supports the analysis of, (i) the very limited, close to zero, impact of the regulatory framework on these quality management procedures; and (ii) the very limited uptake, so far, of certain simplifications introduced by the CPR, discussed in A.3.9 below.

A.3.10 Substantive cost savings due to the simplification of the procedures for the testing of products and for the AVCP for micro-enterprises

Under this section, substantive cost savings linked to the simplification of the testing procedures and the AVCP for micro-enterprises are discussed, in particular: (i) ***test-sharing and cascading***;[103] (ii***) the opportunity for micro-enterprises to use a simplified AVCP***;[104] and (iii) ***the use of Specific Technical Documentation in place of the AVCP for individually manufactured or custom-made products***.[105]

Based on secondary sources, the uptake of these provisions is considered low. The RPA study reports that about 20% of the respondents are aware of any organisation using these provisions (which obviously does not correspond to a 20% share of companies using these provisions). In some sectors, such as that of certain timber products, provisions currently enshrined in art. 36, such as cascading and test-sharing, are reportedly commonly used, because they were allowed under the CPD framework as interpreted by the Guidance paper M, and are included in the applicable hEN.[106]

To assess this regulatory effect, questions about the uptake and savings linked to art. 36 to 38 were introduced into the questionnaire to trade associations and other stakeholders – as done for art. 5 derogations. The expected low uptake, as underlined by the previous study and early contacts with stakeholders, implied that the chances to obtain information from sampled firms might be too low. While in principle art. 36 derogations are relevant for all companies and all sectors, respondents were preliminarily asked whether micro-companies represent a significant proportion of companies in their sector, and whether custom-made non-series product represent a significant output in their sector, to determine the relevance of art. 37 and 38 CPR. The results are summarised in Exhibit A.3.9 below.

Exhibit A.3.9 Uptake of CPR testing simplifications

	Art. 36	Art. 37	Art.38
Respondents	21	22	21
Not relevant	-	45.5%	67%
No uptake	43%	45.5%	19%
Limited uptake	38%	9%	9%
Some uptake	19%	0%	5%
High uptake	0%	0%	0%

The main and consistent result is that 'no uptake' is the modal answer for all three kinds of simplifications. However, ***the uptake of art. 36 testing simplifications, including test-sharing and cascading, was higher than that estimated by the previous study,*** as 57% of surveyed stakeholders reported some uptake among their associates. More in detail, several stakeholders pointed out that test-sharing is used in the case of private-labels products: the manufacturer not only sells its product to the distributor which will then label it under its own name, but also shares the test results. Cascading is especially relevant for products which are sold as kits of

[102] 13 respondents for the first item; 12 respondents for the second item.
[103] Art. 36 CPR.
[104] Art. 37 CPR.
[105] Art. 38 CPR.
[106] RPA study, at p. 87.

components and then assembled by a downstream player. While most of the stakeholders pointed out, qualitatively speaking, that ***art. 36 simplifications did generate cost savings***, no quantitative estimates could be provided, as no company within our sample did make use of this simplification.

The uptake of art. 37 and 38 simplifications remained very limited, also because only relevant to specific sectors or products: 9% and 14% of the respondents were aware of the use of the simplified AVCP systems for micro-enterprises, or the use of the Specific Technical Documentation rather than AVCP for non-series or custom-made products, respectively. As a result, art. 37 and 38 are not currently generating significant savings. One government mentioned that '*these simplifications are of limited importance to SME; what matter most would be a definition of when a product is 'industrial' and when 'artisanal'.*

The possible reasons for the limited uptake, and thus impact, of these provisions were investigated through the survey and interviews with public authorities and stakeholder associations. In general, stakeholders pointed out primarily two obstacles:

1) On the regulatory side, the ***lack of legal clarity*** concerning the implementation of these simplifications, including (i) the specification of the simplified procedures in the relevant hEN; (ii) the lack of Commission guidance for both companies and Member State authorities; (iii) the lack of a clear perception about whether national authorities would not challenge simplified testing methods;
2) On the business side, the ***reluctance to use simplified procedures*** which could be interpreted as a 'reduced' guarantee of performance; such a reluctance is particularly relevant for SME that have to compete with large manufacturers.

More specific obstacles concerning the use of the different simplifications are discussed here below.

Further specific reasons concerning art. 36 simplifications:

- the reluctance to share proprietary commercial information with competitors or downstream players (*'organising test-cascading is a task for trade associations, as companies would have few incentives to do so'*);
- the risk for small competitors or downstream players of stronger linkages with larger manufacturers, which could then limit or distort competition, and create forms of lock-in and dependency;
- in mature markets, companies that had already carried out the ITT before the publication of Guidance Paper M and the introduction of the CPR did not need to resort to test-sharing or -cascading, as the product performance had already been established;
- art. 36.1(b) of the CPR provides that '[t]he manufacturer may use the test results obtained by another manufacturer only after having obtained an authorisation of that manufacturer, who remains responsible for the accuracy, reliability and stability of those test results.' Such a provision is fit for situations in which a large manufacturer shares test results with other players, but may be difficult to implement when tests are organised and then shared by a consortium of manufacturers or a trade association;

Further specific reason concerning art. 37 simplifications:

- the circularity, that is the fact that in sectors where small and micro enterprises are an important segment of the market, standards are usually written in such a way that they can be applied by smaller operators at limited costs; hence, further simplifications are less needed.

Further specific reason concerning art. 38 simplifications:

- the possible burdens linked to the demonstration of the equivalence of the Specific Technical Documentation *('embarking in a new simplified procedure may cause uncertainty and be as costly as undertaking the old procedure'*);

A.3.11 The CPR and sustainability

Another innovation introduced bt the CPR is Basic Requirement 7, 'Sustainable use of natural resources'. Previously, the CPD did not cover the performance of construction products with respect to the use and consumption of natural resources in buildings and did not provide a common language and parameters to measure reuse, recyclability, durability, or the use of environmentally compatible raw and secondary materials.

Basic Requirement 7 is an enabling provision, allowing manufacturers to declare the 'environmental performance' of their products in the DOP and in the CE marking.

However, to become operational the provision requires the adoption of the relevant standards, so that hEN for construction products also include measurement methodologies for the environmental performance. To date, no hEN has reportedly included Basic Requirement 7.[107] Currently, part of the industry is using the standard EN 1580413 as a voluntary method to provide environmental information to customers and further work is being carried out within CEN Technical Committee 350.[108]

As a result, the new CPR provision is not yet producing any effect and has not triggered an improvement in the sustainability of the sector. While this was acknowledged by stakeholders, some of them also pointed out that the framework, once operational, could provide *'critical environmental performance information, which could be used for a better and more sustainable construction and operation of the building, and to perform carbon management or environmental risk assessment'*.

A.3.12 Conclusions

Here below, the costs and cost savings generated by the CPD/CPR are summarised in Exhibit A.3.10. Concerning the population of companies subject to the CPD/CPR, on the one hand the number risks being overestimated, as the enterprises included within the NACE sector covered by the sectoral definition are also likely to include companies with 1 to 4 employees, which are unlikely to manufacture products on their own and thus to comply with CPR. On the other, however, the estimates do not cover many other NACE sectors, which are not sufficiently homogeneous to be considered as part of the 'construction product sector', but which are subject to these requirements.[109] Moreover, the estimates are likely to underrepresent the benefits arising from art. 36, for which no quantitative estimates could be retrieved or inferred from the companies interviewed. At the same time, the estimates are based on the assumption of a '100% BAU Factor' for AVCP procedures, which may prove slightly over-optimistic, but for which no sufficiently granular information to disentangle the share of regulatory burdens could be collected.

Exhibit A.3.10 CPR/CPD: summary of costs (positive values) and cost savings (negative values) (€ mln)

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Administrative burdens/burden savings linked to the obligation of providing information to customers (including the DOP and the CE marking)	€ 1,117	€ 1,208	€ 1,318	€ 1,573	€ 1,614	€ 1,563	€ 1,621	€ 1,655	€ 1,618	€ 3,081	€ 3,086
One off-costs linked to transition to the CPR	-	-	-	-	-	-	-	-	-	€ 301	€ 301
Administrative cost savings linked to the possibility of derogating from the DOP and posting the DOP online	-	-	-	-	-	-	-	-	-	*(-€ 1,472)**	*(-€ 1,472)**
Administrative cost savings due to the easier accessibility of information through the PCPC	-	-	-	-	-	-	-	-	-	-€ 1	-€ 1
Substantive burdens/burden savings linked to the obligation for manufacturers to put in place an AVCP system	€ 0	€ 0	€ 0	€ 0	€ 0	€ 0	€ 0	€ 0	€ 0	€ 0	€ 0
Substantive cost savings due to the simplification of the procedures for the testing of products and for the AVCP (art. 36)	-	-	-	-	-	-	-	-	-	*n.a.*	*n.a.*
Substantive cost savings due to the simplification of procedures for the testing of products and for the AVCP (art. 37-38)	-	-	-	-	-	-	-	-	-	*€ 0*	*€ 0*
Total	**€ 1,117**	**€ 1,208**	**€ 1,318**	**€ 1,573**	**€ 1,614**	**€ 1,563**	**€ 1,621**	**€ 1,655**	**€ 1,618**	**€ 3,381**	**€ 3,387**

** savings already accounted for in the item above*

[107] RPA Study, at p. 134.
[108] CPE Position Paper, at p. 27-28.
[109] E.g. glass and aluminium manufacturers.

Concerning the attribution of costs and cost savings to the various government tiers, all cost and saving items – excluding BAU costs – quantified in this section are of EU origin. This hold even more true for the period following the introduction of the CPR: differently from the CPD, the legal framework is now based on a Regulation, without an opt-out clause for MS intending not to impose CE marking obligations. Importantly, MS authorities and public administrations clearly have an impact on costs, being the enforcement authorities; however, enforcement practices are not relevant to this analysis of regulatory costs.

Such a conclusion on the attribution of costs and cost savings applies to the current state of the art of the regulatory framework for construction products and is. in other words, fact-based. In the absence of EU provisions, costs would not 'disappear', as national or local rules would replace them, as was the case before the adoption of the CPD. As discussed in section A.3.3 above, building regulations rely on both 'application rules' and 'construction product specifications', and the latter require some form of performance declaration. However, fact-based information on the costs or benefits of separate national regulations could not be retrieved, since the current legal framework dates back, in its main elements, to the early Nineties. As a result, companies and other stakeholders have little or no memories of the previous situation.[110] Importantly, considering that, from a counterfactual point of view, CPR costs are fully of EU origin, but not fully additional, the estimates presented above are roughly in line with those presented in the IA Background Study.

Finally, benefits due to the additional circulation of goods and services within the Single Market are not covered by the analysis. Stakeholders, including firms, construction product trade associations and contractors, were asked whether the CPR is among the main drivers when buying construction products from other EU Member States. Answers concurred that other drivers are significantly more important in shaping the EU Single Market for construction products. In particular, the tradability of many construction products is low, given the low value-to-weight ratio. Though some products (e.g. wall tiles) or some niche specifications do travel the Single Market, in most cases transport costs offset any benefit from buying in another Member State. Even construction companies operating abroad[111] largely rely on local suppliers. Secondly, in contractors' purchasing choices, existing business relationships and trust reportedly matter more than the declaration of the product performance required under the CPR framework. Finally, the regulatory framework is too old to retrieve fact-based data and information from companies about benefits due to the additional use of foreign suppliers after the introduction of EU rules in the construction product market. All in all, benefits are likely to be low for most of market segments, though positive for the ones whose products have a higher tradability; in any case, even for tradable products, CPR information cannot be expected to be among the main market drivers.

[110] Unsurprisingly, large multinationals are very glad to have a single EU-wide regulation on construction product performance: *'the CPR is a blessing for pan-European companies […] because harmonisation and standardisation of testing and information to be provided to clients reduce the overall costs of quality testing (e.g. external laboratories knows already what to do in all MS, information to be provided are similar in all MS, it is easier to move products across national borders, company internal procedures and layout of internal laboratories can be harmonised thus reducing costs […]).'* However, this is not the case across all sectors, firm-sizes and countries. In one MS, it was reported that the CPR framework required substituting one standard for a certain product with six new standards, which were hardly fit for immediate use by local SME.

[111] Which indeed represents a small share of the total, see Section A.6.3 below.

A.4 BUSINESS OPPORTUNITIES, COSTS, AND COST SAVINGS OF THE PQD

A.4.1 Introduction

In this section, the regulatory effects of the Professional Qualification Directive (PQD) in terms of new business opportunities, administrative costs, and cost savings are assessed.[112] Before the analysis, the main trends generated by the PQD concerning the mobility (stable and temporary) of professionals of the construction sector is evaluated.

The analysis relies on the methodology for the estimation of the effects presented in the Inception Report.[113] The exercise is based on the following sources:

1. Primary information obtained through ***interviews with professionals***;
2. Primary information obtained through ***interviews with trade associations, public authorities and other stakeholders***;
3. Primary information obtained through ***an e-mail survey targeted at national Chambers of Architects*** to retrieve cost parameters for carrying out the cost and cost savings assessment linked to the recognition process**;**
4. The ***Regulated Professions Database*** (RPD)[114] published by the European Commission, including legal information about whether a profession is regulated and in which MS, and the number of successful, unsuccessful and pending applications for establishment or temporary mobility.[115] The RPD is based on data submitted by MS, which retains responsibility for the quality, accuracy and responsiveness of the available information.[116]
5. ***Other secondary sources***, including the EU Impact Assessment (IA),[117] the PQD Evaluation,[118] and the mutual evaluation reports[119].

The PQD aims at facilitating the mobility of professionals and craftsmen and intra-EU trade in services by ensuring that EU professionals enjoy the freedom both of establishment and to provide professional services in another MS on a temporary basis. To this purpose, the PQD establishes different frameworks. For the freedom of establishment, the PQD consolidates three recognition regimes:

1. The ***automatic recognition system based on harmonised minimum training requirements***, currently applicable i.a. for architects;
2. The ***automatic recognition system based on professional experience***, currently applicable for certain craft activities;
3. The ***general system***, applicable to all professions not covered by specific rules and professionals that do not meet the conditions of the other recognition systems, i.a. engineers, architects whose title is not

[112] Cf. Section A.1 above for the full list of regulatory effects.
[113] Cf. Inception Report (Revised), 19 October 2015, at Section 4, in particular the sub-sections on substantive and administrative costs.
[114] http://ec.europa.eu/internal_market/qualifications/regprof/ (last accessed on March, 2016).
[115] Data were retrieved from the PQD in November 2015.
[116] The Commission has introduced a disclaimer on the concerning the RPD stating that "The database contains information on regulated professions, statistics on migrating professionals, contact points and competent authorities, as provided by EU Member States, EEA countries and Switzerland. Each country is responsible for updating information, on its regulated professions, competent authorities and statistics."
[117] Commission Staff Working Paper, Impact Assessment, Accompanying document to the Proposal for a Directive of the European Parliament and of the Council amending Directive 2005/36/EC on the recognition of professional qualifications and Regulation on administrative cooperation through the Internal Market Information System, SEC(2011)1558. Hereinafter, 'PQD IA'.
[118] European Commission (2011), Evaluation of the Professional Qualifications Directive, Brussels, 05.07.2011. Hereinafter 'Evaluation PQD'.
[119] DG GROW E/5 (2015), Mutual evaluation of regulated professions: Overview of the regulatory framework in the business services sector by using the example of architects Report based on information transmitted by Member States and on the meeting of 30th September 2014. Hereinafter 'Mutual evaluation – Architects'; and Cf. DG GROW E/5 (2015), Mutual evaluation of regulated professions Overview of the regulatory framework in the construction sector by using the example of civil engineers Report based on information transmitted by Member States and on the meeting of 30 September 2014, at §2. Hereinafter, 'Mutual recognition – Engineers'.

included in Annex V to the PQD, and craftsmen without sufficient working experience to access the automatic recognition system

As for temporary service provision ('temporary mobility'), the PQD prescribes that the host MS may only require incoming professionals and craftsmen a yearly declaration including details concerning the insurance cover, the nationality and the professional qualifications. When the profession has public health and safety implications and is not subject to automatic recognition, the host MS may also conduct a prior check of these qualifications. This regime did not exist before the introduction of the PQD.

The section is structured as follows:

- Section A.4.2 analyses the main trends in cross-border mobility;
- Section A.4.3 provides an overview of the most mobile construction professions;
- Section A.4.4 quantifies the added value generated by cross-border mobility of professionals and craftsmen in the construction sector;
- Section A.4.5 quantifies the administrative costs and cost savings linked to the recognition process;
- Section A.4.6 concisely concludes.

A.4.2 Main Trends in Cross-Border Mobility

Overall, under the PQD framework more than ***51,000 decisions were made between 2003/2004 and 2014 on the mobility of construction-related professionals and craftsmen***[120] ***towards countries where such professions are regulated***.[121] The vast majority of these decisions (about 93%) concern the permanent establishment in the host MS, while about 3,800 relate to temporary mobility.[122] Construction professions represent a small share of the decisions taken under the PQD, respectively 12% for establishments and 18% for temporary mobility. Figures are summarized in Exhibit A.4.1 below.

Exhibit A.4.1 – Number of construction professionals establishing or temporary moving in another MS

	Establishment	Temporary Mobility
To All Countries	47,696 (12% of total PDQ mobility)	3,802 (18% of total PDQ mobility)
To EU Countries	27,623 (9% of total PDQ mobility)	3,525 (21% of total PDQ mobility)

Source: RPD

Differences exist concerning the mobility within EU countries on the one hand, and between the EU and other EEA countries (and namely Norway, Liecthenstein, and Iceland) and Switzerland on the other. If only intra-EU movements are considered, figures lower considerably, particularly for establishments. The difference, about 20,000 professionals establishing in another MS, is almost entirely attributable to one single profession, i.e. electricians, as discussed further below.

For construction professionals and craftsmen, the ***geographical distribution***, in terms of country of origin and destination, does not have a clear pattern across regimes and professions. Temporary mobility tends to concentrate in one or a couple of bilateral flows, usually between bordering countries. As for establishments, a significant difference between the distribution of crafts, and other professionals, such as architects and engineers, seems to exist. The latter are rather dispersed, and their bilateral flows are in most cases correlated to the population or market size of each country, although with some notable exceptions. On the other hand, the figures relating to the establishment of craftsmen are influenced by the number of countries having a

[120] 25 professions out of the 361 included in the RPD were identified as relevant for the construction sector: (i) air conditioning technician/Heating/Central heating technician/installer/repairer/Maintenance-Installation of ventilation equipment; (ii) architect; (iii) building contractor; (iv) building engineer; (v) building insulator/building insulation; (vi) building site coordinator; (vii) civil engineer; (viii) electrical engineer; (ix) electrical equipment/appliances contractor/repairer/installer; (x) electrician /senior electrician/specialised electrician; (xi) engineer; (xii) floor layer; (xiii) gas installer/repairer; (xiv) interior designer-architect; (xv) joiner/carpenter; (xvi) junior architect; (xvii) mason/bricklayer; (xviii) master builder; (xix) painter-decorator; (xx) plasterer; (xxi) plumber; (xxii) roofer/roofing; (xxiii) scaffolder; (xxiv) technical expert for the quality of construction projects; and (xxv) tiler.

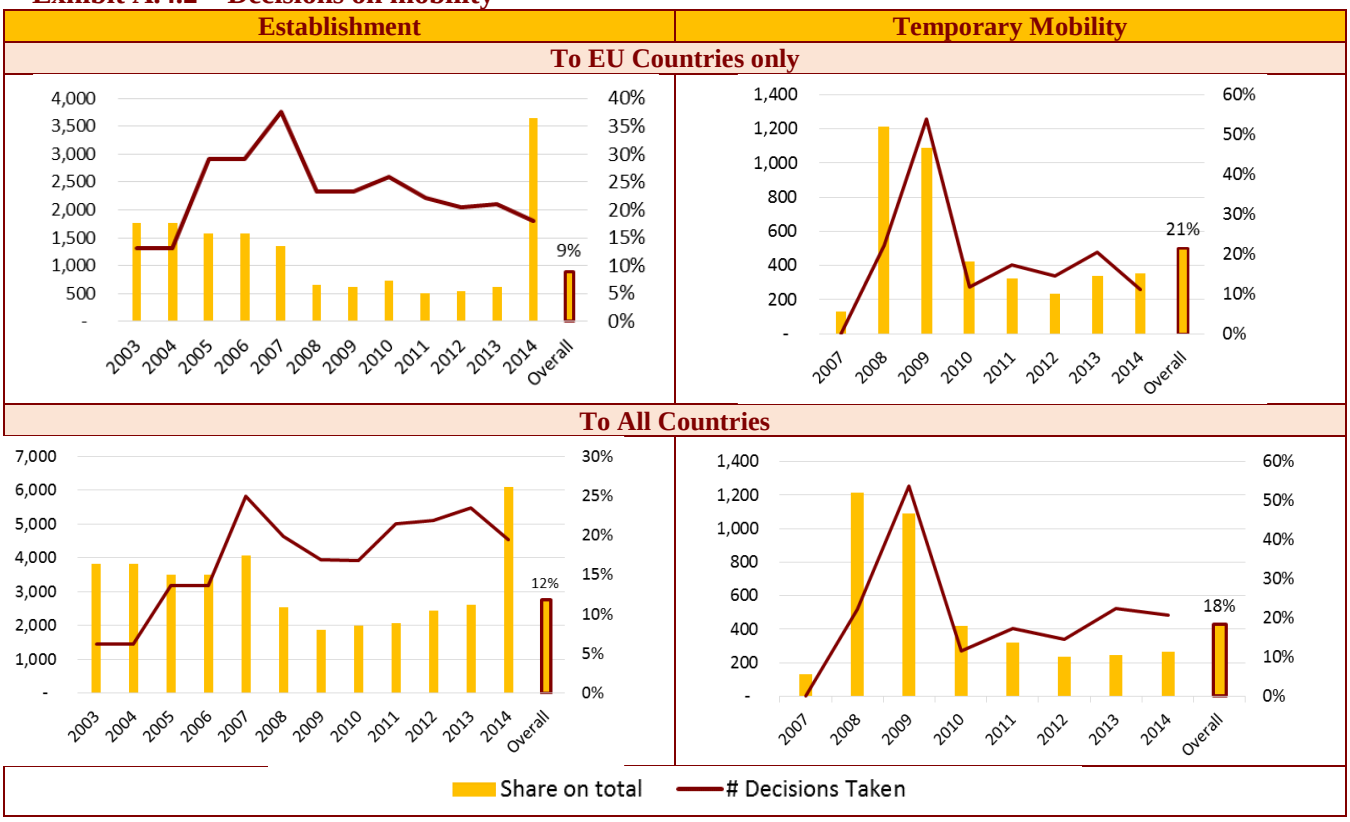
[121] The RPD does not track flows of workers towards countries in which a profession or craft is not regulated.

[122] The Commission notes that the RPD may be incomplete as for temporary mobility figures. Cf. Evaluation PQD.

dedicated regulation in place. Fr instance, this is the case for masons and bricklayers, and painters and decorators, moving virtually only towards Austria and Belgium.

Exhibit A.4.2 below shows the number of decisions for both establishments and temporary mobility, and the share of decisions related to the construction sector over total decisions. In the period 2003/04 to 2014, the number of decisions regarding the establishment of professionals within the EU varied between 3,000 and 6,000, with a peak in 2007, followed by a decline during the subsequent economic crisis, and a new peak in 2013. For temporary mobility, the provisions became operational only in 2007, and fully so in the following years, due to the progressive transposition and implementation of the PQD.[123] The number of construction professionals opting for temporary mobility is significantly lower (several hundreds rather than several thousands applications per year), with a peak in 2009. Over the last years, annual applications for temporary mobility stabilized between 300 and 600. The pattern is somewhat different once EEA countries and Switzerland are included, due to the impact of one single profession, namely electricians.

Exhibit A.4.2 – Decisions on mobility

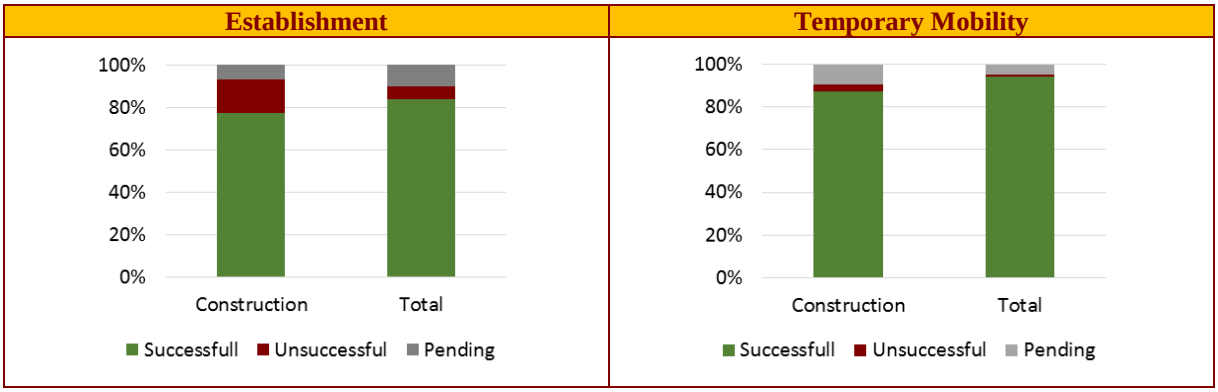


Note: Applications for 2003/04 and 2005/2006 were equally split over two years. Source: RPD

As shown in Exhibit A.4.3 below, the ***success rate of the applications*** is nearly 80% for establishments, and over 85% for temporary mobility. In both cases, the percentage is comparable with the success rate for the entire dataset for the same period. Expectedly, the success rate is higher under the automatic system (e.g. architects) than the general system (e.g. engineers).

[123] The PQD was fully transposed only in 2010, which is almost three years after the deadline. *Ibid.*

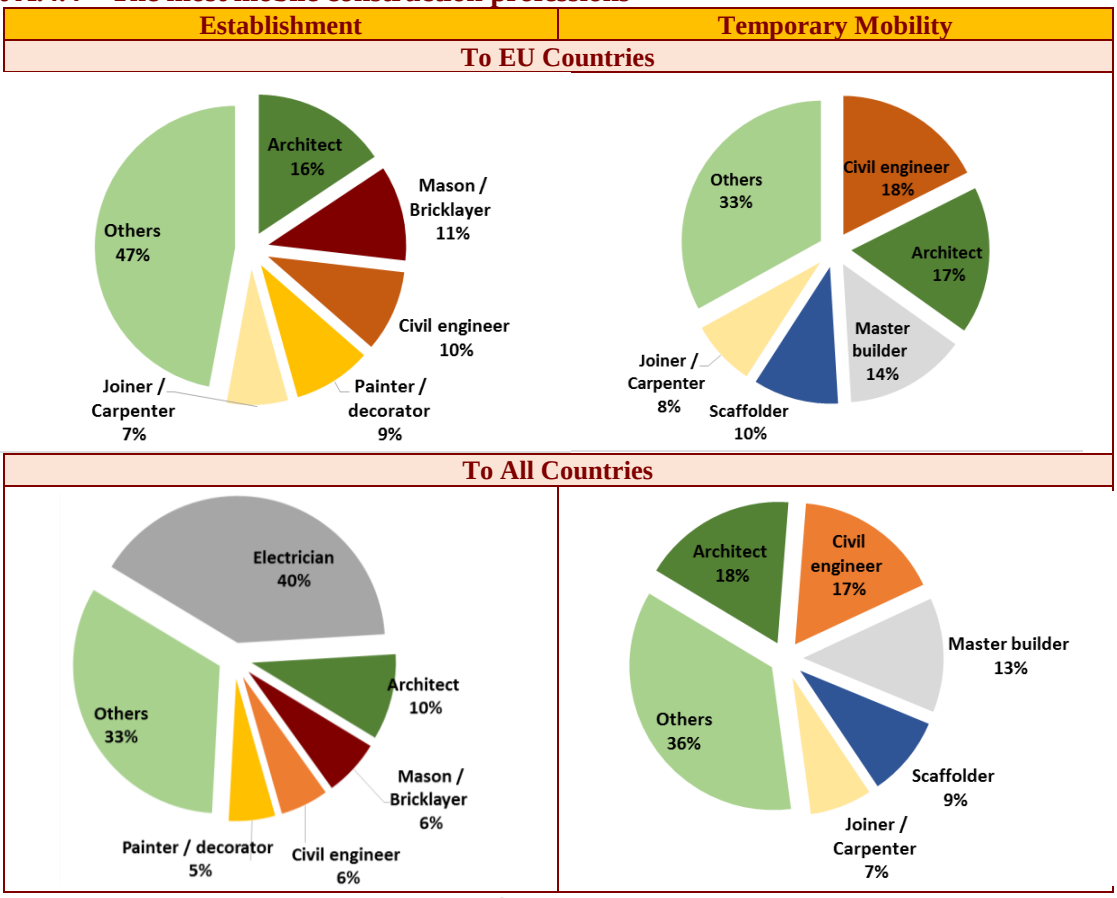
Exhibit A.4.3 – Success rate of decisions



Notes: Construction data refer to the top 10 most mobile professions, representing 90% of all decisions concerning construction-related professions[124]. Decisions towards all countries of destination. Source: RPD

The over 50,000 decisions issued by host countries in which a craft or professions is regulated were ***highly concentrated among a handful of professions***. As already mentioned, approximately 40% of the applications for establishment concerned a single profession, i.e. electricians, with the vast majority applying to establish in Norway. If only EU destinations are considered, the number of decisions concerning this profession becomes significantly lower. Architects and civil engineers are among the most mobile professions for both establishment and temporary mobility, accounting cumulatively for one fourth of intra-EU movements of construction professionals. The other 5 most mobile professions in the sector are crafts, and namely masonry, painting and decoration, carpentry, and scaffolding. The most mobile construction professions are analysed more in details below in Exhibit A.4.4.

Exhibit A.4.4 – The most mobile construction professions



Source: RPD

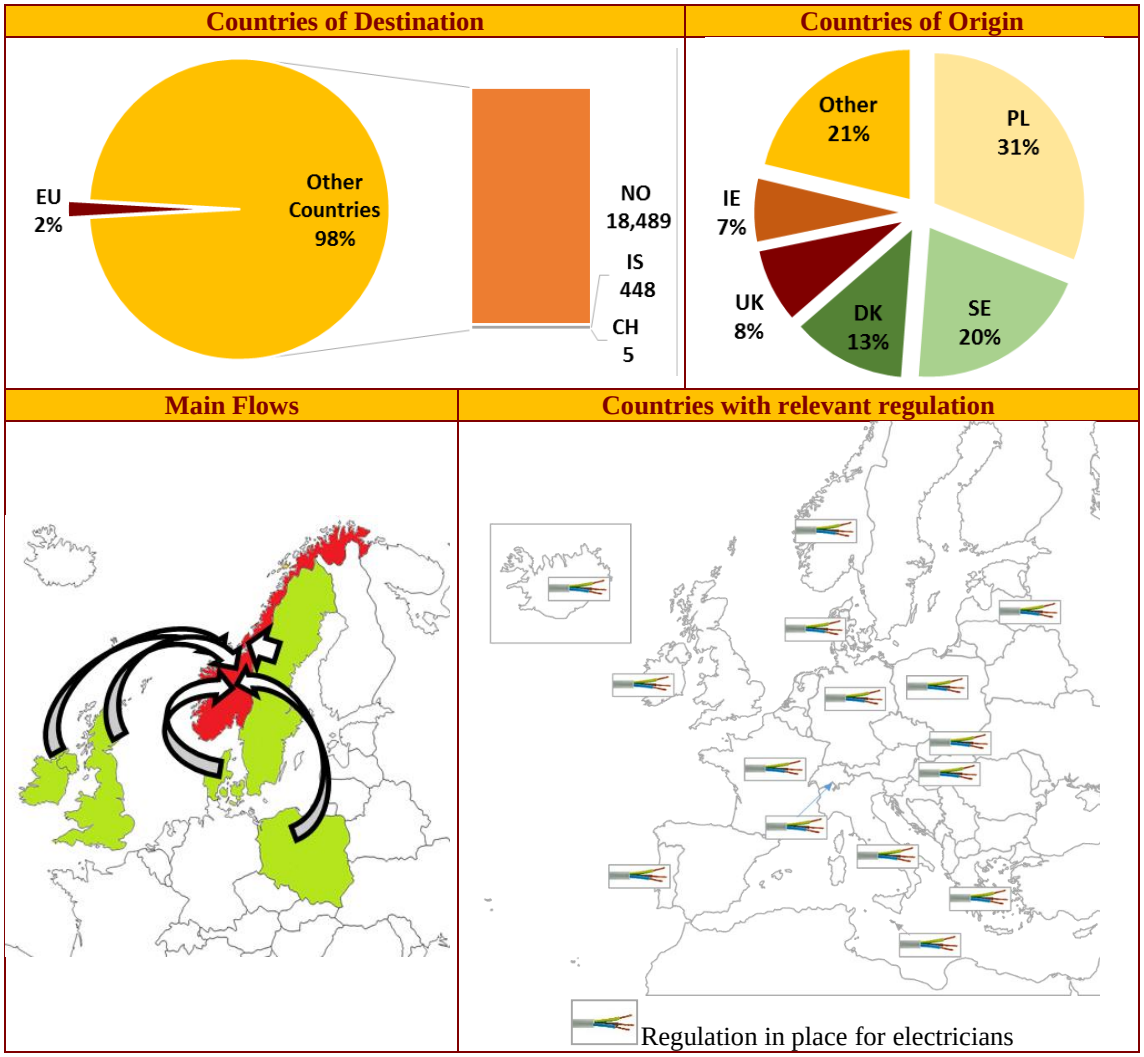
[124] I.e. (i) Architect; (ii) civil Engineer; (iii) master Builder; (iv) scaffolder; (v) joiner/carpenter; (vi) painter/decorator; (vii) air conditioning technician/heating/central heating technician/installer/repairer/maintenance/installation of ventilation equipment; (viii) electrical equipment/appliances contractor/repairer/installer; (ix) plasterers; and (x) tilers.

A.4.3 Overview of the key construction professions

Electricians

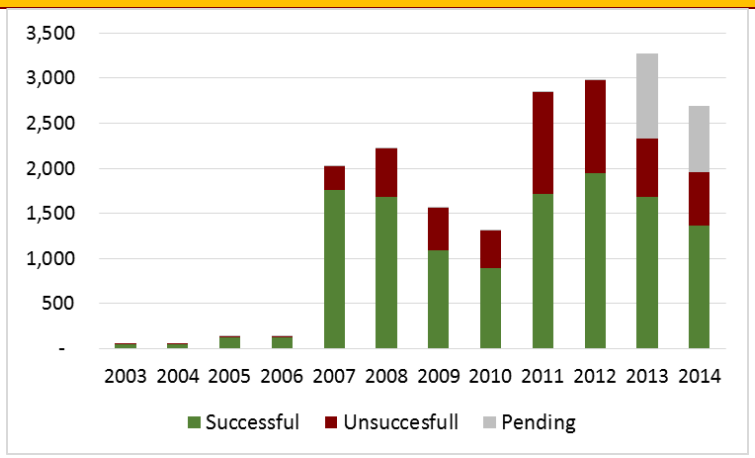
The profession is regulated in 11 EU countries, as well as in Norway, Iceland, and Switzerland. Between 2003/2004 and 2014, 19,290 decisions were made regarding the establishment of EU electricians in other EU and EFTA countries, making it the most mobile construction-related profession. Out of the nearly 20,000 decisions, ***approximately 12,500 were successful***, of which about 4,900 under the Automatic recognition of professional experience ('crafts'), and the remaining under the General System.[125] The craft had a success rate of 65%, lower than the average of the construction sector. The most peculiar aspect of the mobility of electricians across Europe concerns, however, their geographical distribution. Approximately 98% of all decisions concern movements to Norway alone, and about 80% of the electricians come from five European countries (see Exhibit A.4.5 below).

Exhibit A.4.5 – Establishment of Electricians – selected issues



[125] Importantly, problems exist concerning the classification of electricians according to the ISIC code, that may, in certain countries, lead to the disapplication of the automatic system. Cf. Evaluation PQD, at p. 61.

Time Trend – Establishment

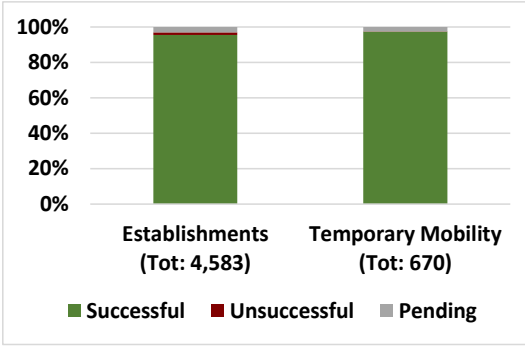


Source: RPD

Architects

Architects are among the professionals with the highest mobility within the EU, for both permanent establishment and temporary mobility. The profession is regulated in 25 EU countries, and in Lichtenstein, Switzerland and Iceland.[126] In the 2003/2004 – 2014 period, approximately 5,300 decisions were made regarding the movement of architects, of which some 4,600 concerned the establishment in another country, while nearly 700 regarded temporary mobility. The success rate is very high in both cases, with shares well over 95% (see Exhibit A.4.6). The high success rate is explained by the fact that architects benefit from the automatic system.

Exhibit A.4.6 – Success Rates of Decisions



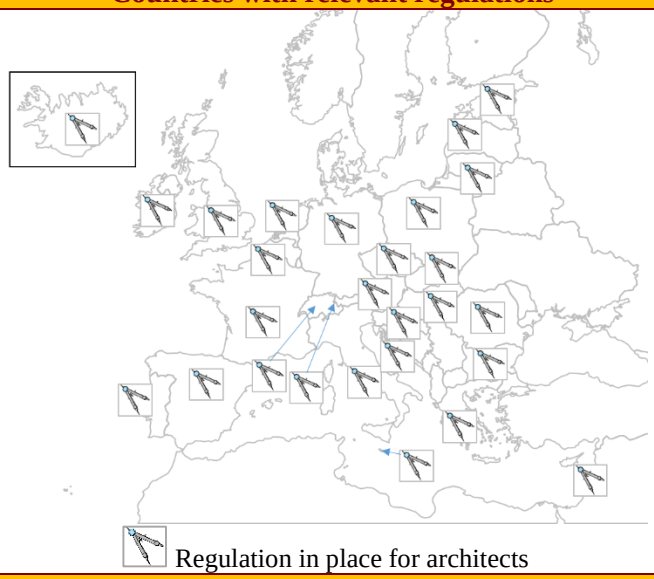
Source: RPD

With regard to establishments, after a peak in 2007-2008, the number of decisions issued stabilized at 300-400 per year. Compared to the case of electricians, the flows of architects are much more equally distributed among EU MS, with most countries experiencing both an inflow and outflow of professionals.

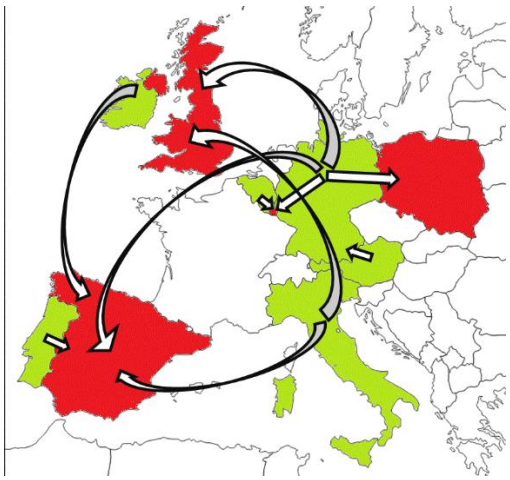
[126] Non-regulating countries are Sweden, Denmark, and Finland. Cf. Mutual evaluation – Architects. As for Estonia, the Mutual evaluation reports that architects are not a regulated profession therein, while the RPD reports a different findings. The analysis is basis on the RPD (thus including Estonia among regulating countries).

Exhibit A.4.7 – Establishments of Architects – Selected issues

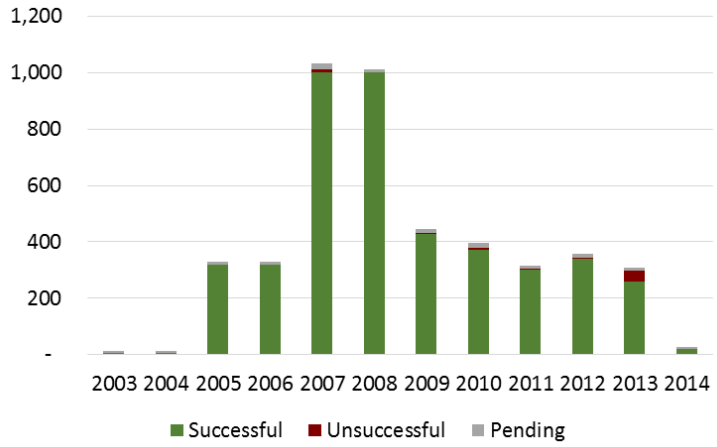
Countries with relevant regulations



Top 10 Flows - Establishments



Time trend – Establishments



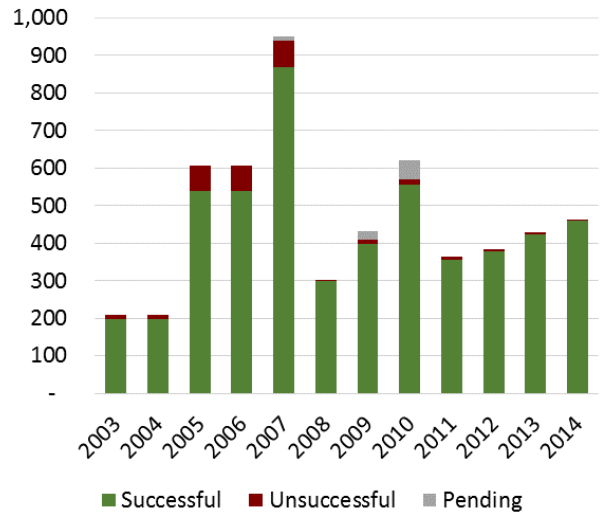
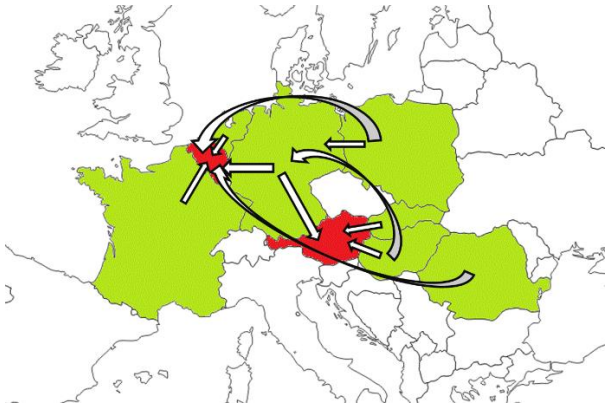
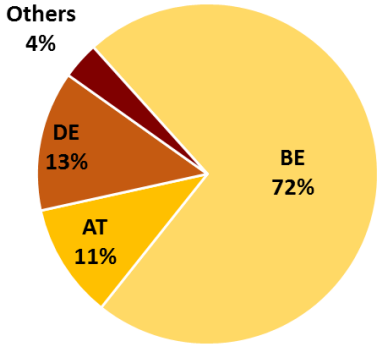
Source: RPD

Masons / Bricklayers and Painters / Decorators

Albeit pertaining to two different categories, these professions can be jointly analysed because of similar time and geographical patterns. Overall, approxiamtely 5,600 decisions on establishments were issued for these professions, with a success rate amounting to 93%. On the contrary, the number of decisions regarding temporary mobility is negligible (i.e. a few dozens of temporary movers per year). After a peak around 2005-2007, the number of decisions stabilized at some 400 per year.

As in the case of electricians, one of the most specific aspects in the mobility of masons, bricklayers, painters, and decorators is the geographical pattern of the flows. In particular, over 80% of all decisions concern mobility towards only two countries, which are relatively small in terms of both population and market, namely Austria and Belgium, with Belgium accounting for more than 70% of the total incoming craftsmen. Movements occur between neighbouring countries, as well as between new MS and Northern-Western European countries. As shown in Exhibit A.4.8, these professions are regulated in 8 EU countries (but only 7 for decorators and painters), as well as in Liechtenstein and Iceland.

Exhibit A.4.8 – Establishments of Mason, Bricklayers, Painters, and Decorators – Selected issues

Trend in # Decisions	Countries with relevant regulations
	
Top 10 Flowes - Establishments	**Main countries of destination**
	

Source: RPD

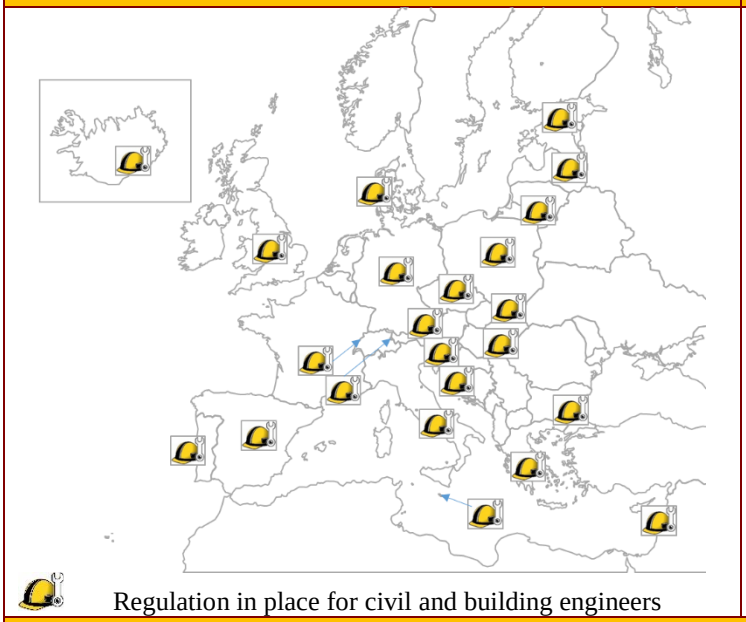
Civil and Building Engineers

As in the case of architects, civil engineers are among the most mobile construction professions for both establishments and temporary mobility. In general, the engineering profession covers various disciplines, with the scope of activity varying across MS.[127] For reasons of completeness, civil engineers are analysed jointly with building engineers, which are less numerous, albeit still significant, in terms of decisions regarding establishments.

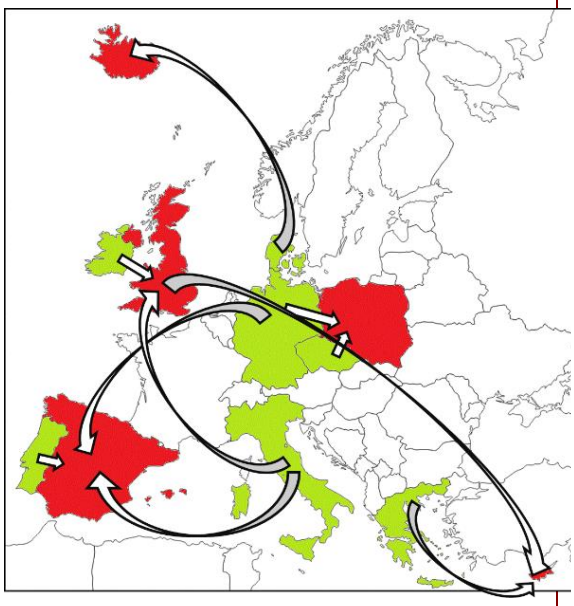
Overall, 3,500 decisions were issued between 2003-2004 and 2014, with a success rate of about 68%. Notably, the share of positive decisions is significantly lower than in the case of architects, as engineers do not benefit from the automatic recognition regime. The number of decisions followed an overall decreasing trend over time, particularly as regards the movement of building engineers, which decreased from approximately 150 per year to none over the decade under review. As in the case of architects, the geographical distribution of movements is rather dispersed, with some of the main flows occurring between neighbouring countries (e.g. from Portugal to Spain, from Ireland to the UK, from the Czech Republic to Poland) or between linguistically similar countries (e.g. from Greece to Cyprus and from Italy to Spain).

[127] Cf. Evaluation PQD, at §4.3.4.

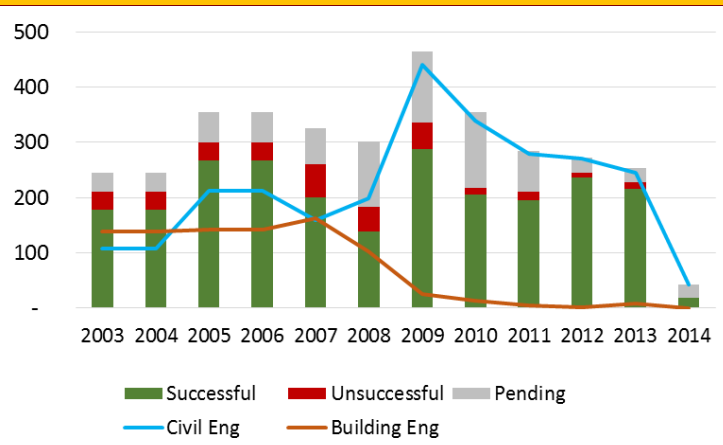
Exhibit A.4.9 – Establishments of Civil and Building Engineers – Selected issues



Top 10 Flows - Establishments



Trend in # Decisions



Source: RPD

A.3.4 Assessment of Costs and Benefits

New Business Opportunities

Based on the data from the RPD shown above in Sections A.4.2 and A.4.3, the new business opportunities created by the PQD for architects, engineers (including both civil and building) and craftsmen (including electricians, masons, bricklayers, painters, and decorators) are now assessed.

The methodology adopted is based on the calculation of the added value generated by professionals and craftsmen moving abroad. In particular, the Consultants attempted to highlight the ***cross-border added value***, i.e. the supplementary added value generated by the professionals or craftsmen moving to another country compared to the one that they would have generated by remaining in their home MS. To do so, the differential added values per pairs of MS and per profession were calculated based on the Eurostat SBS Database. Details on the treatment of added value data are discussed below in Box A.4.1

Box A.4.1 Calculation of the average added value and differential added value

Architects. For the period 2008-2013, data on the added value at factor cost and the number of persons employed are retrieved from the Eurostat SBS database for the NACE Rev. 2 class 71.11. For 2014, data are extrapolated through the minimum square method applied on 2008-2013 data. For the period 2004-2007, data are available in the NACE Rev 1.1 classification, where architecture, engineering and testing services are considered jointly. As retrieving data at a more granular level is impossible, to estimate both the value added and the number of persons employed, the share of architecture services over architecture, engineering and testing services in 2012 is calculated over NACE Rev. 2 data, assuming that the same share applies over the 2004-2007 period.[128]

Engineers. For the period 2008-2013, data on the added value at factor cost and the number of persons employed are retrieved from the Eurostat SBS database for the NACE Rev. 2 class 71.12. For 2014, data are extrapolated through the minimum square method applied on 2008-2013 data. For the period 2004-2007, data are available in the NACE Rev 1.1 classification, where architecture, engineering and testing services are considered jointly. As retrieving data at a more granular level is impossible, to estimate both the value added and the number of persons employed, the share of engineering services over architecture, engineering and testing services in 2012 is calculated over NACE Rev. 2 data, assuming that the same share applies over the 2004-2007 period.[129]

Masons, bricklayers, electricians, painters, and decorators. For the period 2008-2013, data on the added value at factor coss and the number of persons employed are retrieved from the Eurostat SBS database for the NACE Rev. 2 classes 43.21, 43.34, and 43.99. For 2014, data are extrapolated through the minimum square method applied on 2008-2013 data. For the period 2004-2007, data are retrieved from the Eurostat SBS database for NACE Rev. 1.1 classes 45.25, 45.31, 45.34, and 45.44.

Differential added value. Using 2013 national data for the average added value per person employed, a 28X28 matrix is created to calculate the differential added value for each pair of EU MS,[130] with the value being floored at 0.[131] Bilateral differences are then averaged, using as weight the number of professionals/craftsmen originating from each MS (retrieved from the RPD). The number of significant MS pairs, i.e. pairs of MS between which a flow of professionals or craftsmen took place over the 2003/04 – 2014 period are the following: (i) 540 for architects; (ii) 270 for engineers; and (iii) 458 for craftsmen. Due to changes in the NACE classification, consistent data series for the added value per profession and MS cannot be retrieved. For this reason, it is assumed that the differential added value followed the same trend as the average added value, and differential added values are extrapolated based on this parameter over the 2004-2014 period.

This method enables to identify the additional productivity generated by professionals and craftsmen moving from a MS with a low average added value to a MS with a high average added value. Those flows account for most of, though not all, movements of professionals and craftsmen in the construction sector. For both architects and engineers, 60% of the movements go in this direction; for craftsmen, the share is significantly higher, that is 86% of the movements, implying that craftsmen are more likely to move for economic reasons, i.e. look for destinations where they can enjoy a higher value added. This also explains why the differential added value (2013) for craftsmen is higher, amounting to € 22,166 per moving worker, compared to €11,626 and €14,739 for architects and engineers respectively.

However, the above-mentioned analysis is not be complete, as it does not take into account movements fostered by unemployment. When an unemployed professional or craftsman moves and works in another MS, the whole added value, and not only the differential one, is to be considered as cross-border added value. Unfortunately, data on unemployment rates per sector of activity do not exist. For this reason, the Consultants have used the average EU unemployed rate in the 28 MS, weighted by the number of professionals and craftsmen in the construction sector moving from each MS. Data series are reported in Exhibit A.4.10 below. The weighed unemployment rates for craftsmen are significantly higher than for architects or professionals, signalling that MS with high unemployment rates represent the bulk of MS from which craftsmen migrate.

[128] Cf. also 'Mutual recognition – Architects', at §2.
[129] Cf. Mutual recognition – Engineers.
[130] No data available for Croatia. For the Czech republic, data are calculated as the average of the added value for Hungary, Poland and Slovakia; for Estonia, the added value for architects refers to 2011, for engineers to 2012; for Ireland, the added value for architects refers to 2012, for engineers and craftsmen to 2011; for Malta, the added value for architects and craftsmen refers to 2010, for engineers to 2009.
[131] Where the differential was negative, i.e. the professional or craftsman was moving from MS with a high added value to a MS with a low added value, the differential added value was considered to be 0.

Exhibit A.4.10 Employment rates weighed for moving professionals/craftsmen originating from each MS

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Total	9.3%	9.0%	8.2%	7.2%	7.0%	9.0%	9.6%	9.7%	10.5%	10.9%	10.2%
Architects	9.0%	8.9%	8.2%	7.2%	7.0%	8.6%	9.1%	9.1%	10.1%	10.5%	10.0%
Engineers	6.7%	6.4%	5.9%	5.3%	5.4%	7.4%	8.3%	8.8%	9.9%	10.2%	9.5%
Craftsmen	18.7%	17.6%	14.6%	11.0%	9.0%	10.8%	12.3%	12.3%	12.8%	13.3%	12.0%

Source: RPD and Eurostat

In conclusion, the cross-border added value is calculated as follows:

1. The full added value generated by the share of moving professionals and craftsmen corresponding to the unemployment rate;
2. The differential added value generated by the rest of moving professionals (i.e. the complementary value of the unemployment rate).

Once the average added value per person employed is calculated for the three professions, the following assumptions are made to calculate the cross-border added value:

1. For establishment, professionals and craftsmen established abroad in each year are assumed to remain abroad for the whole period. For instance, professionals and craftsmen established in 2004 create mobility added value for 11 years, while professionals and craftsmen established in 2010 create mobility added value for 5 years;
2. For temporary mobility, professionals and craftsmen operating abroad are assumed to create mobility added value for one year.

The assumptions made may have an impact on the robustness of the results. For example, these values may be overestimated if professionals and craftsmen established abroad return to the country of origin after a certain number of years (a period shorter than the one in scope of the analysis), or if temporary mobility concerns projects shorter than one year. At the same time, the values may be underestimated if professionals and craftsmen moving abroad generate an added value above the sector average (but no evidence could be found in this respect), or if temporary mobility concerns projects longer than one year. However, given the marginal share of cross-border added value over the sectoral added value, any refinement is unlikely to generate a significant effect on total results.

The added value generated by professionals and craftsmen moving abroad is then multiplied by the number of successful establishments cumulated over the period 2004-2014 given the assumption of non-return, and the number of successful demands for temporary mobility. Results are shown in Exhibit A.4.11. The impact of the mobility of professionals and craftsmen, in any case, remains low, amounting in 2014 to 0.04% of the value added for engineering services, 0.41% for the four crafts considered, and, 0.29% for architects.

Exhibit A.4.11 – Mobility Added Value in the period in scope of the Assignment

		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Architects	*Mobility Added Value (€mln)*	0.08	4.15	8.16	21.95	39.83	43.49	50.20	53.23	60.57	64.57	60.35
	% over Sector Added Value	0.00%	0.02%	0.04%	0.10%	0.15%	0.19%	0.22%	0.24%	0.27%	0.29%	0.29%
Engineers	*Mobility Added Value (€mln)*	2.59	6.82	10.86	14.70	17.62	21.76	27.08	31.87	37.79	46.41	41.59
	% over Sector Added Value	0.00%	0.01%	0.01%	0.01%	0.02%	0.02%	0.03%	0.03%	0.03%	0.04%	0.04%
Masons, bricklayers, electricians, painters, and decorators	*Mobility Added Value (€mln)*	5.47	21.12	37.82	104.55	166.21	182.01	219.45	279.78	338.08	393.81	472.02
	% over Sector Added Value	0.01%	0.02%	0.03%	0.08%	0.12%	0.15%	0.18%	0.23%	0.28%	0.34%	0.41%

A.4.5 Administrative costs and savings of mobility

To assess the costs and cost savings of professionals moving abroad, data were retrieved from professional bodies members of the Architects' Council of Europe through a written survey administered via e-mail, with the support of the Council itself. As for the profession, architects were selected because they are the most mobile profession in the construction sector, and may undergo both the automatic and the general system (depending on whether the academic title is included in Annex V.7 to the PQD). Ten professional bodies replied to the survey.

The information retrieved from the various systems is the following:

1. ***Automatic system***. On average, professional bodies require 3.6 documents per application (median value: 3). Of these, on average 1 document shall be presented in original, and 1.5 documents shall be translated by the applicant (in most cases, a certified or sworn translation is required). The complexity of the documents may vary, from a copy of the applicant's ID, to a certified translation of university degrees or the proof of professional qualifications in the home MS. Fees amount on average to €103 (median value: €133), and the average lead time is estimated to be about 36 days;
2. ***General system.*** On average, professional bodies require 4.1 documents per application (median value: 5). Of these, on average 1 document shall be presented in original, and 1.8 documents shall be translated by the applicant (in most cases, a certified or sworn translation is required). The complexity of the documents may vary, from a copy of the applicant's ID, to a certified translation of university degrees or the proof of professional qualifications in the home MS. Fees amount on average to €103 (median value: €133), and the average lead time is estimated to be about 45 days;
3. ***Temporary mobility***. On average, professional bodies require 3.7 documents per application (median value: 4). Of these, on average 1 document shall be presented in original, and 1.7 documents shall be translated by the applicant (in most cases, a certified or sworn translation is required). The type of documents is similar to those required for the establishment regimes. Fees amount on average to €20 (median value: €0).

Based on these data, cost parameters are estimated as follows:

1. ***Automatic system***. The familiarisation with the information obligation is estimated to require 1 person/day. The production of documents is estimated to require 2 hours per document, including retrieving the necessary data, filling in forms, and preparing the document, hence 7.2 hours in total. For translated documents, the unitary cost is estimated at €100 (based on market values), for a total cost amounting to €150. For both original documents and certified/sworn translations, tax stamps and costs of reproduction are estimated at €100. Fees, based on average values, are estimated at €103.
2. ***General system.*** The familiarisation with the information obligation is estimated to require 2 person/days, because of the higher complexity of the system. The production of documents is estimated to require 2 hours per document, including retrieving the necessary data, filling in forms, and preparing the document, hence 8.2 hours in total. For translated documents, the unitary cost is estimated at €100 (based on market values), for a total cost amounting to €180. For both original documents and certified/sworn translations, tax stamps and costs of reproduction are estimated at €120. Fees, based on average values, are estimated at €103.
3. ***Temporary mobility***. The familiarisation with the information obligation is estimated to require 1 person/day. The production of documents is estimated to require 2 hours per document, including retrieving the necessary data, filling in forms, and preparing the document, hence 7.4 hours in total.

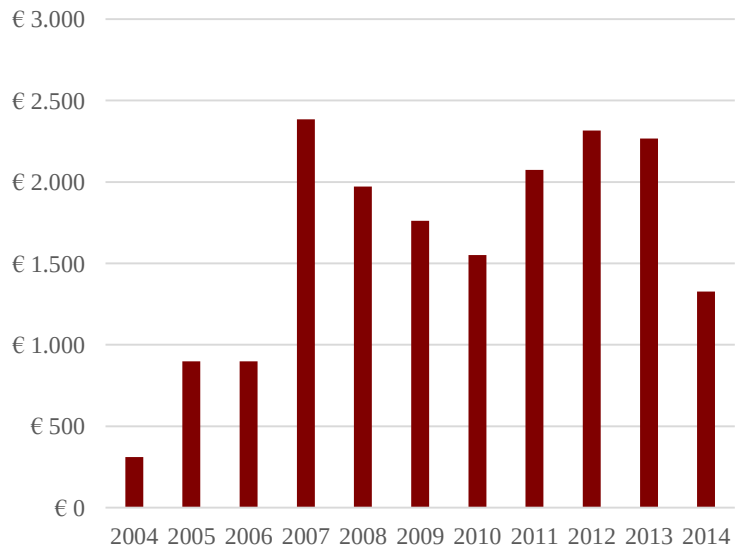
For translated documents, the unitary cost is estimated at €100 (based on market values), for a total cost of €170. For both original documents and certified/sworn translations, tax stamps and costs of reproduction are estimated at €100. Fees, based on average values, are estimated at €20.

To monetize the time spent to apply, the average hourly salary inclusive of overheads of € 16.90 (source: Eurostat) is used.[132] The costs for compensation measures or aptitude tests are not considered, because they depend on the demand itself, rather than being attributable to the PQD framework. The costs are calculated over all accepted demands, distinguishing between those applying for establishment under the general or the automatic system, and those applying for temporary mobility.

Here below in Exhibit A.4.12, the administrative costs for the most significant construction professions and crafts are summarized. Estimates show that the costs over the 2004-2014 period amount approximately to € 18 mln, i.e. a fraction of the estimated cross-border mobility added value.

Exhibit A.4.12– Administrative costs linked to mobility of professionals (€ '000)

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	Total
Architects	€ 5	€ 194	€ 194	€ 612	€ 611	€ 307	€ 267	€ 248	€ 269	€ 221	€ 40	€ 2,968
Engineers	€ 144	€ 217	€ 217	€ 163	€ 112	€ 242	€ 200	€ 207	€ 232	€ 279	€ 36	€ 2,047
Craftsmen	€ 162	€ 489	€ 489	€ 1,609	€ 1,249	€ 1,213	€ 1,084	€ 1,618	€ 1,814	€ 1,767	€ 1,252	€ 12,746
Total	**€ 310**	**€ 900**	**€ 900**	**€ 2,384**	**€ 1,971**	**€ 1,762**	**€ 1,551**	**€ 2,073**	**€ 2,315**	**€ 2,266**	**€ 1,328**	**€ 17,760**



Here below, the administrative cost savings linked to the introduction of the PQD are estimated. Importantly, those cost savings should not be subtracted from the costs described above, as they represent an estimate of the positive effect brought about by the consolidation of the system and the introduction of the temporary mobility regime. In simpler words, those costs are costs saved because of the simplification effect of the PQD. Cost savings are more difficult to determine than the actual costs for two reasons:

1. For the freedom of establishment, the PQD rationalized and consolidated the pre-existing groups of acts on the mobility of professional and craftsmen, also rationalizing and harmonising the existing regimes for the establishing in another MS, but not substantially altering the administrative steps and requirements, which are in any case set by national legislation, administrative practices and professional bodies.[133] Interviewed professionals signalled that in the recent years the recognition of professional qualifications turned out to be simpler, e.g. because contact with local professional bodies are made easier, barriers which *de facto* prevented or restricted movement were removed, and, in general, local professional bodies gained experience in managing the process. In particular,

[132] This average value is considered as representative across the very diverse professions and crafts covered, also because professionals may delegate the tasks to an employee (e.g. an administrative assistant).
[133] Cf. Evaluation PQD, at § 2.2.

professionals reported that no problem was encountered concerning the requirement to establish a permanent structure in the host country, the obligation to restructure or to change the ownership structure, the use of equivalent documentation issued in the home MS, and the use of their own equipment. Differently, issues still persists concerning the mutual recognition of insurance requirements, and the need to duplicate procedural steps, formalities or controls already undertaken in the home MS.

2. Most of the benefits generated by the PQD concern the abatement of regulatory barriers, that is the possibility to move across the EU, rather than administrative costs; hence, they are subsumed within the cross-border added value estimated in Section A.3.4 above.
3. On the contrary, savings concerning the temporary mobility regimes are easier to calculate, since prior to the PQD, temporary movers had to undergo the establishment procedure.[134] However, certain stakeholders mentioned that for professions covered by the automatic recognition, the high rate of success of this procedure makes establishment even more convenient than temporary mobility.

Based on these considerations, savings parameters are estimated as follows:

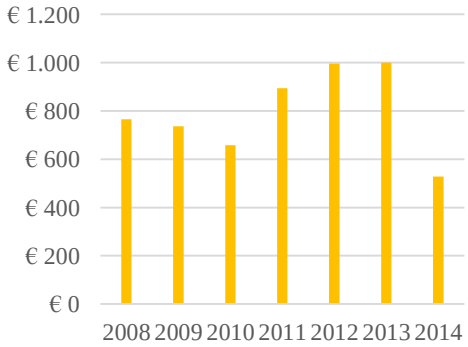
1. ***Automatic system***. The professional/craftsman saves 0.5 person/days for familiarizing with the Information Obligation and 0.5 person/days in contacts with the public administration; furthermore, he/she saves €100 of out-of-pocket costs linked to a lower number of documents, including production of originals and certified/sworn translations;
2. ***General system***. The professional/craftsman saves 1 person/days for familiarizing with the Information Obligation and 0.5 person/days in contacts with the public administration furthermore, he/she saves €150 of out-of-pocket costs linked to a lower number of documents, including production of originals and certified/sworn translations;
3. ***Temporary Mobility***. Architects and craftsmen save the difference between the automatic system and the temporary application, that is about €80 of out-of-pocket costs and €83 of fees. Engineers save the difference between the costs for the general system and the temporary application, that is about 1 person/days €130 of out-of-pocket costs and €83 of fees.

To monetise working time, the average hourly salary inclusive of overheads of € 16.90 (source: Eurostat) is used.

Here below in Exhibit A.4.13, administrative costs and cost savings for the most significant professions and crafts are summarized. Data are provided for the period 2008-2014, i.e. following the date of transposition of the PQD.

Exhibit A.4.13 – Administrative cost savings linked to mobility of professionals (€ '000)

	2008	2009	2010	2011	2012	2013	2014	Total
Architects	€ 236	€ 117	€ 102	€ 94	€ 102	€ 85	€ 15	€ 750
Engineers	€ 49	€ 109	€ 99	€ 108	€ 116	€ 159	€ 23	€ 663
Craftsmen	€ 481	€ 510	€ 457	€ 693	€ 778	€ 756	€ 491	€ 4,166
Total	**€ 765**	**€ 736**	**€ 658**	**€ 895**	**€ 996**	**€ 1,000**	**€ 529**	**€ 5,579**



[134] Or exercise the freedom to provide services based on the relevant Treaty articles.

A.4.6 Conclusions

Based on the quantification of costs and benefits described in the previous sections, the magnitude of the regulatory effects created by the PQD on the construction sector turns out to be small and unlikely to generate more than 0.5% of the sectoral added value for the categories concerned.[135] The limited effects are mainly due to the number of construction professionals and craftsmen going abroad for permanent establishment or temporary mobility through the PQD mechanisms, which is very low compared to the size of the sector.

Interviews with stakeholders showed clearly that most operators work abroad jointly with a local partner. Operators choose so for reasons of regulatory compliance, as the local partner is much better versed with local building requirements and is already in line with qualification requirements, as well asfor market reasons, because local partners have the specific knowledge of demand conditions and customer relationships. Construction professions and crafts are considered by stakeholders as mostly local activities, especially since infrastructure and civil engineering works are excluded from the scope of this Assignment. Box A.4.2 below discusses the mobility of architects.

Box A.4.2 Mobility of architects

Architects are the most mobile construction professions within the EU. However, in 2014, only 2.3% of architects worked or resided in a country different from the one in which the are mainly established, down from 7% in 2008. The fall, however,is not related to regulatory barriers to establish abroad, including the PQD, whose provisions for architects were largely left unchanged in this period – but to market developments.

Even considering architects who worked in whatever form – thus including cases not covered by the PQD – in another European country in the last 12 months, mobile architects only account for 5% of the sector. Only in small countries (e.g. Luxembourg, Slovenia, or Estonia), or in medium-to-small countries with larger neighbours speaking the same language (e.g. Austria, Belgium, or Ireland), the share is equal to or higher than 10%.

Source: Architects Council of Europe (2015), The Architectural Profession in Europe 2014

In the few cases in which going abroad is 'worth the buck', regulatory requirements on professional qualifications are complied with through limited efforts and do not represent a major barrier. This is confirmed by the opinions of the professionals interviewed, as a large share indicated that the regulatory simplifications are not a very important issue in the decision to operate abroad, and that the general assessment of the opportunities for cross-border mobility is positive or very positive. This consideration is largely shared by most professional associations. The situation is different for professionals and craftsmen covered by the general system, for which a more burdensome application and a lower rate of success reportedly still prevent a higher mobility. However, for certain professionals, attempts were made in the past to establish a database of professions and educational titles across MS, but the fragmented regulatory landscape, the diversified competences and the professions involved are so different across MS that the attempts did not succeed.

In a nutshell, reducing regulatory barriers in this field would make the life easier and reduce costs for professionals moving abroad; at the same time, whether a reduction would have a noticeable impact on cross-border activities is unclear. In this regard, a special case should be mentioned, that is operators living in border regions, who are more likely to provide cross-border services, and hence are more largely impacted, in terms of both costs and benefits, by the regulatory framework, including the PQD.[136]

The situation is more nuanced for craftsmen. Albeit the numbers extracted from the RPD are as low as, if not lower than, for professionals, some national trade associations mentioned an increasing inflow of foreign workers in sub-sectors characterized by lower skills, more limited capitals, and higher work intensity (e.g. masons, plasterers, tilers, painters). These flows are not always captured by the database, not tracking craftsmen moving towards countries where a profession is not regulated or moving as employees (also of temporary agencies). At the same time, the impact of PQD on the overall work flows of craftsmen can hardly be disentangled from the impact of the SD, the Posting of Workers Directive, and irregular jobs.

[135] This estimate relies on the quality and comprehensiveness of data included in the RPD databse. However, given the estimated limited magnitude, large variation of data quality would not generate large impacts, when compared to the total sectoral added value.
[136] Professions and craftsmen in border regions may also be covered by bilateral cross-border employment agreements between MS.

A.5 EFFECTS OF THE SERVICES DIRECTIVE: INTERNAL SIMPLIFICATIONS, CROSS-BORDER ACTIVITIES AND INWARD FLOWS

A.5.1 Introduction

In this section, the regulatory effects of the ***Services Directive (SD)*** are assessed.[137] As the SD aims at establishing 'general provisions facilitating the exercise of the freedom of establishment for service providers and the free movement of services', its effects fall, in the first place, on companies operating cross-border. However, the SD also has an effect on within-border operators, in terms of simplification of the regulatory framework. Furthermore, the SD also produces indirect effects on companies operating locally, due to the possible increase in competition caused by the facilitation of cross-border establishment and provision of services.

Hence, the analysis is structured over three main blocks:

- Section A.5.2 presents the effects of ***simplifications*** introduced by the SD for construction companies;
- Section A.5.3 explores the effects of the SD on ***companies operating cross-border***, via both the freedom of establishment and the free movement of services;
- Section A.5.4 presents the ***indirect impacts of cross-border liberalisation*** on construction companies operating locally.
- Section A.4.5 concisely ***concludes***.

Issues related to the recognition of professional qualifications and more generally with cross-border activities of professionals are dealt in section A.4 above. However, professionals are also covered in section A.5.2, where simplification effects on purely internal situations are discussed.[138]

The analysis relies on the methodology for the estimation of the effects presented in the Inception Report[139]and on the following sources:

1. Primary information obtained through ***interviews with construction companies***;
2. Primary information obtained through ***interviews with trade associations, public authorities and other stakeholders***;
3. ***Secondary sources***, including the Commission working paper on mutual evaluation of the SD,[140] the performance checks on the construction sector,[141] the recent Ecorys study on the impacts of the SD on the construction sector,[142] and the study on the cost of non-Europe and the untapped potential of the single Market[143].

A.5.2 The Services Directive and Internal Simplification for Construction Companies.

The SD includes provisions affecting the regulatory framework of certain service activities, including ***construction services***.[144] While some articles and paragraphs solely target the cross-border service provision, ***the SD also imposes certain requirements on MS which benefit local operators***. In particular, MS are required to:

1. examine, and where necessary, simplify procedures and formalities applicable to the access to and exercise of a service activity (art. 5);

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[137] Cf. Section A.1 above for the full list of regulatory effects.
[138] Obviously, construction product manufacturers, which are not covered by the SD, are not dealt with in this Section.
[139] Cf. Inception Report (Revised), 19 October 2015, at Section 4, in particular the sub-sections on substantive and administrative costs.
[140] Commission Staff Working Paper On the process of mutual evaluation of the Services Directive, accompanying document to the Communication from the Commission, Towards a better functioning Single Market for services – building on the results of the mutual evaluation process of the Services Directive, SEC(2011)102, 27.1.2011. Hereinafter, 'Mutual Evaluation'.
[141] Performance Checks, State of Play of the Internal Market in the Construction Sector, Background Note, Expert Group Meeting, 22nd March 2012. Hereinafter, 'Performance Check'.
[142] Ecorys (2015), Simplification and mutual recognition in the construction sector under the Services Directive, Final Report for DG MARKT. Herinafter, 'Ecorys Study'.
[143] PWC and London Economics (2013), Study on 'The cost of non-Europe: the untapped potential of the European Single Market', Final Report for the European Commission. Hereinafter, 'PWC Report'.
[144] Explicitly mentioned at Recital 33.

2. create a Point of Single Contact (PSC) for providers to complete procedures and formalities needed to access or exercise their service activity (art. 6 and 7);
3. introduce e-government solutions for procedures and formalities related to the access to and exercise of a service activity (art. 8);
4. remove authorisation schemes for access to or exercise of a service activity which are discriminatory, unjustified or non-proportional. In particular, MS are required to review requirements which could be arbitrary and dispositions on the duration of authorisations. Furthermore, the SD imposes to prevent unduly complex procedures, and to charge to service providers fees which are proportional to the costs borne by the public authority, as well as to make tacit approval ('silent is consent') the rule for granting authorisations, rather than the exception (art. 9-13);
5. remove certain requirements to which access to or exercise of a service activity may be subject, such as preliminary case-by-case economic testing or the involvement of competing operators in the procedure (art. 14);
6. assess, and remove if found discriminatory, unnecessary or non-proportional, certain requirements to which access to or exercise of a service activity may be subject, such as quantitative or territorial restrictions, legal form requirements, shareholding requirements, reserve of activities, limitation on the number of establishments in the MS territory, norms on the minimum number of employees, fixed tariffs, or service bundling requirements (art. 15);
7. allow multidisciplinary activities, except for justified cases concerning regulated professions and accreditation and testing activities (art. 25).[145]

The applicability of the SD to within-border situations, i.e. to construction companies operating within their home MS, is not obvious from a legal point of view. The matter was recently discussed before the Court of Justice of the European Union (CJEU) in the joined cases C-340/14 and C-341/14.[146] The referring Court demanded the CJEU whether certain provisions of the SD could be applied in purely internal situations. The Advocate General, in his opinion, suggested the Court to answer affirmatively this question and thus declare the SD applicable even when a cross-border element is missing.[147] However, the Court did not clarify the applicability of the SD, considering that an element of cross-border service provision was present in both cases, at least potentially.[148] While the remaining part of this section does not presuppose *de iure* that the SD is applicable to purely internal situations, the assessment is based on the *de facto* consideration that it would be impossible, if not for political reasons, that procedures, formalities and requirements governing access to and exercise of service activities are simplified only for providers established in another MS, thus 'discriminating' home providers. E.g., the PSC can also be consulted, or e-government solutions, where available, can be exploited also by national operators. Given the relatively low share of construction companies providing cross-border services,[149] most probably the bulk of the simplification benefits due to the SD falls on purely internal operators rather than companies operating cross-border.

In addition to to the application of the SD to purely internal situations, another legal conundrum concerns what regulation of construction activities falls under the SD, that is the applicability of the SD *ratione materiae*. Recital 9 of the SD states that '[t]his Directive applies only to requirements which affect the access to, or the exercise of, a service activity. Therefore, it does not apply to requirements, such as road traffic rules, rules concerning the development or use of land, town and country planning, building […] which do not specifically regulate or specifically affect the service activity but have to be respected by providers in the course of carrying out their economic activity in the same way as by individuals acting in their private capacity.' Product regulation, that is the regulation of the characteristics of a building, would also fall outside its scope. While a grey area remains, because building regulations largely impact both the service activity and the product delivered, the SD is generally assumed to apply to all rules affecting construction companies in their operations

[145] Other SD simplifications are relevant for local operators, such as the generalization of alternative dispute resolution systems. However, in both primary and secondary sources, the Consultants could find no evidence of such issues being relevant for construction companies.
[146] Joined cases C-340/14 and C-341/14, R. L. Trijber v College van burgemeester en wethouders van Amsterdam and J. Harmsen v Burgemeester van Amsterdam.
[147] Joined Cases C-340/14 and C-341/14, Opinion of the Advocate General Maciej Szpunar, at §44 et ff.
[148] Joined Cases C-340/14 and C-341/14, Judgment of the Court, at §40-42.
[149] Discussed below in Section A.6.3.

before building completion (e.g. building permits), but not to rules affecting buildings once completed, and zoning and planning requirements, as excluded by Recital 9.

In several MS, ***the SD was considered as generating a positive effect in terms of simplification***. One stakeholder association commented that '*the SD had positive effects at national level, e.g. for the simplification of certain legal requirements applicable to the construction activity'.* In Italy, several procedures for the construction sector were simplified following the implementation of the SD, including the exclusion of certain construction activities from permit schemes, the introduction of lighter procedures for building permits, the substitution of ex ante with ex post checks, the introduction of e-government procedures, the approval of a nation-wide building code, and the extension of the 'silent is consent' rule. The Mutual Evaluation exercise lists other simplifications relevant to construction operators, such as the abolition of requirements on the minimum number of employees for certain construction services in Spain.[150]

Little evidences could be found concerning the simplification of general authorisation schemes regulating market access for construction companies. These general authorisations do not seem to be imposed in all MS. The Ecorys study could find only 6 countries in which general authorisation schemes for construction operators are in force (out of the 14 MS covered[151]), and some of them (e.g. in Denmark) only apply to specific market segments. [152] Simplifications of these general authorisations under the Services Directive has been minimal or, in most Member States, non-existent.[153] Simplifications of general schemes applicable to specific construction sector segments were reported in the context of the Mutual Evaluation exercise, e.g. in Spain for lifting equipment.[154]

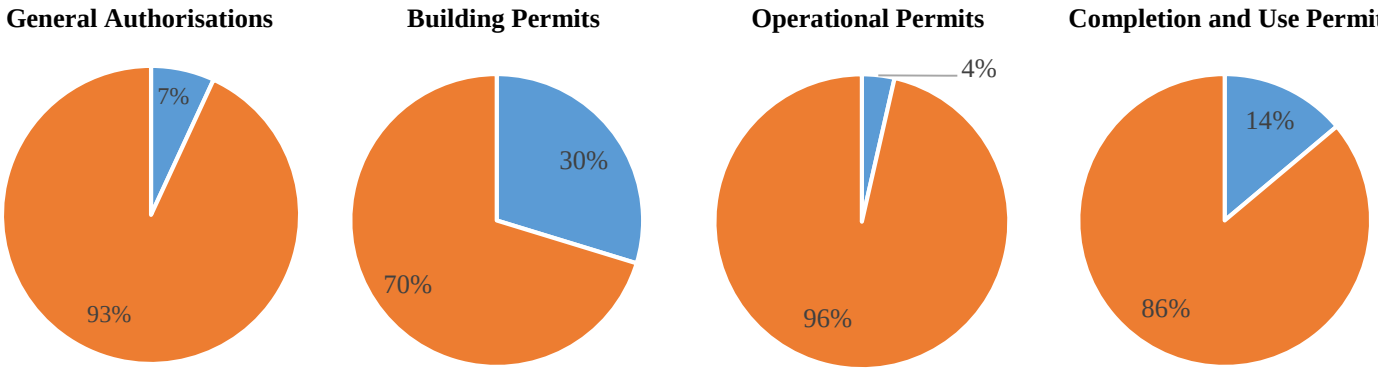
Though simplifications of the regulatory framework for the exercise of the construction activities were clearly introduced following the implementation of the SD, it is clear that they are limited to a small number of MS. And even in relation to those, two key questions remain to be answered. First, to what extent these simplifications can be causally attributed to the SD. Secondly, to what extent these simplifications benefited stakeholders. The two questions are linked, as the attribution of benefits enables to identify the share of benefits of EU origin. However, as it will become apparent below, no quantification is possible; still, the Consultants considered appropriate to report the evidence concerning the causal role of the SD.

The stakeholders' opinions on the attribution of simplifications to the SD were non-conclusive. Certain governments insisted that specific simplifications were adopted because of the overall revision of service regulations triggered by the SD. Other governments mentioned that the simplification of the regulatory framework for construction companies was largely unrelated to the SD, whose role is considerably more relevant in other sectors. For example, one stakeholder association noted that in its country a new building regulation entered into force in 2014, creating a more robust building permit system, largely paperless. Though having a positive view of both the general working of the system and the reform, the latter was claimed not to be related to the implementation of the SD. In France, several simplifications of the building and housing code were introduced from 2008 onwards through various laws aimed at reforming economic regulation,[155] hence also before the implementation of the SD. Other stakeholders associations, also e.g. in Italy, claimed that, though introduced, simplifications could not be attributed to the SD. The Consultants could hardly retrieve any hard evidence concerning attribution, e.g. the mentioning of the SD in the recitals of preparatory documents of national legislation. The attribution is made more complex by the fact that the final beneficiaries of simplifications, i.e. construction companies, barely heard of the SD at all.

[150] Cf. Mutual Evaluation, at p.77.
[151] General authorisations were found in Bulgaria, Denmark, Greece, Italy, Portugal and Spain, and not in Poland, France, Slovenia, Czech Republic, Germany, Finland, Netherlands and United Kingdom.
[152] In Belgium, small and micro enterprises with less than 50 employees active in the construction sector have to apply for a general authorization. Cf. Performance Check of the Construction Sector, at p.4. Cf. Ecorys Study, at p. 30.
[153] Cf. Ecorys Study, at p. 18
[154] Cf. Mutual Evaluation, at p.77.
[155] Cf. *i.a. Loi n° 2008-776 du 4 août 2008 de modernisation de l'économie* (Law for modernising the economy) and *Loi no 2015-990 du 6 août 2015 pour la croissance, l'activité et l'égalité des chances économiques* (Law for growth, economic activities, and equality of economic opportunities).

Irrespective of the attribution being clear or not, ***final beneficiaries, i.e. construction companies, noticed hardly any improvement from a simpler regulatory environment given the limited number of MS which implemented the Services Directive in relation to construction service provision and, in those MS that did so, in view of the limited scope of implementation,*** as opposed to a fully-fledged implementation of the Directive's rules and principles for all rules impacting construction service provision. In the few cases when their answers were positive about a (partial) improvement, beneficiaries could not provide any quantitative estimate. Through the interviews, construction companies, installers, and professionals were surveyed on whether the simplifications of administrative procedures introduced after the implementation of the SD in their country led to an improvement for their business. Exhibit A.5.1 below shows the answers for four types of authorisations: (i) general authorisation schemes; (ii) building permits; (iii) operational permits required for certain activities during construction works; and (iv) completion and use permits.[156] ***Over the four types of authorisation, the perception of improvements for construction business activities is limited***. The most optimistic view concerns the simplification of building permits, which was perceived as leading to an improvement by 30% of the surveyed construction companies, installers and professionals. Very limited simplifications were perceived concerning general authorisations schemes and operational permits.[157]

Exhibit A.5.1. Perception of improvements over four types of authorisations by construction companies



Notes: in red, no improvement; in blue, some improvement.

Specific reasons were identified by stakeholders as possible causes for limited improvements on the ground. Two reasons concern the legal and institutional framework, and in particular the role of local authorities and the fact that the SD was implemented through norms of principle in many MS. Three reasons concern the economics and incentive of construction activities, including the cost of familiarisation with simplified procedures, the role of public authorities in ensuring legal certainty, and the overall impact of simplifications on the cost and time for construction works. The above-mentioned reasons are explored in greater detail below:

1. **Legal principles vs. specific regulation.** First and more importantly**,** in most MS the SD has been implemented by means of horizontal legislation only, thus via legal principles valid for the whole services economy,[158] which have not always translated into detailed procedural norms to be followed by public offices in charge of specific economic activities. This is particularly the case for construction

[156] General authorisation schemes include authorisations or registrations required from construction operators to legally enter and/or operate in the market, not referring to actual construction activities taking place on the ground; building permits include ex-ante procedures through which the construction operator or the professional or the developer/owner demands from or communicates to a public authority the possibility to carry out certain construction activities, including, but not limited to, new buildings; operational permits include procedures through which a construction operator demands from or communicates to a public authority the possibility to carry out certain activities in the course of the construction work (e.g. scaffolding); completion and use permits include all procedures and checks that are carried out on a completed (or close to completion) building and/or in case of other completed (or close to completion) construction works, so that the building or other construction work can be deemed legally completed and/or can be used for residential and non-residential purposes.

[157] Data on building permits and use permits were retrieved from construction companies, installers, and professionals. Data on general authorisations and operational permits were retrieved from construction companies and installers. Respondents were preliminary screened on whether they had experience with each type of authorization after the implementation of the SD. Number of respondents is as follows: 31 for general authorisations; 38 for building permits; 29 for operational permits; 32 for completion and use permits.

[158] *Ibid.* at p. 74.

services[159] . Especially in civil law countries, where public authorities, including local ones, are not used or even allowed to apply new principles, in derogation of pre-existent detailed norms, this has limited the impact of the Services Directive to those MS which have implemented it specifically to the construction sector, and then again limited to the extent of such (partial) implementation.

2. **Role of local authorities.**The simplifications mentioned above largely concern the national legal frameworks. However, in several MS, regional authorities also have legislative competences over building procedures and technical regulations;[160] furthermore, local authorities are called upon to administer most of the building procedures.[161] Certain stakeholders claimed that local authorities lack *'expertise, knowhow and means'* to implement the simplifications introduced. Besides, the regulatory playing field is reportedly uneven, with only a share of local authorities in the same MS administering simplified procedures. For instance, where the provision to set up a local one-stop-shop was introduced at national level, only a minority of municipalities did so.

3. **Legal certainty and cost of familiarisation**. Even when a simplification cuts time and costs for regulatory procedures, companies may prefer to rely on established formalities rather than attempting, for the first time, a new and simplified version. In economic terms, the expected savings should be at least as high as the costs for familiarisation with the new procedure and the uncertainty effect should be sufficiently low. This consideration also implies that simplifications are taken up only progressively and after a certain period of familiarisation and trust building.

4. **Legal certainty and liability.** In several cases, simplifications concerned the abolition of the (express) consent to a construction work granted by a local authority. For instance, in several MS an authorisation is no longer necessary for small works, and a professional can declare that the work complies with local requirements without a public approval. This creates two possible problems: (i) the responsibility for declaring that a work complies with the applicable rules is shifted from the public authority to the professional, which in turn may prefer to obtain a 'rubber-stamp' by a public body even though more costly in terms of time and fees rather than bear the liability; (ii) reportedly, as the building regulatory environment is very complex (also due to the role of legal principles vs. specific regulation), with various layers of overlapping local and national norms, relying on the express act of a public authority, ensuring a higher degree of legal certainty on the lawfulness of construction works, may be preferable.

5. **Share of regulatory costs over the total costs and time of construction works.** Depending on the size of the project, and especially, but not only, in the case of new buildings, construction works usually require a long time for completion and substantial funding. Put in this perspective, both companies and clients may have a limited interest in reducing the lead time due to authorisations by few days or in saving a few hundred € in administrative fees. As already discussed above, for construction works, the legal certainty and a proper allocation of liability for certifying compliance with building regulations may be worth more than savings from simplification.

The PWC report on the untapped potential of the EU Single Market shows that excessive/restrictive regulation is the most prominent obstacle to the development of the construction of buildings market.[162] During the interviews, respondents often complained about the complexity of the regulatory framework governing construction activities. It seems, however, they fail to see the Services Directive as a potential driver for simplification already at their disposal.

The limited perception of the benefits brought about by the simplification of the regulatory environment for construction companies is further confirmed by the fact that ***firms were almost unable to provide any quantitative estimate***. A Belgian company signalled that obtaining a construction permit is now much simpler, though local differences still persist. Another Belgian operator claimed that now all building permits in the

[159] Cf. Ecorys Study at p. 4-19
[160] E.g. Germany, Spain, Italy, and the UK (Ecorys study, at p. 69).
[161] All MS covered in depth by this Study for which Ecorys data are available delegate building permit procedures to local authorities. Cf. Ecorys study, at p. 89.
[162] PWC study, at p. 372.

Wallonia region could consistently be granted in 60 days. Two companies in Italy mentioned that the introduction of lighter procedures for building permits for certain construction works reduced the lead time. Another Italian company mentioned that thanks to the 'silent is consent' rule, obtaining a use permit for residential buildings is now much less burdensome and can take place immediately following the building completion. Similar considerations on the reduction of the lead time and the application of the 'silent is consent' rule to the building permit procedure were made by a French craftsman. A German company also appreciated the application of the 'silent is consent' rule in relation to the use permit for residential houses, pointing out in particular a reduction of fees and out-of-pocket costs ranging from 15% to 20% and a reduction of lead time of 20%. Two UK construction operators, including one professional, praised the possibility of issuing a notice of construction works through electronic means, resulting in a reduction of the procedural steps and days needed to complete the procedure.

In conclusion, the limited perception by construction operators of regulatory simplifications, and the almost complete lack of quantitative parameters concerning the size of these benefits, prevent any realistic quantification of regulatory benefits linked to the purely internal effects of the SD.

A.5.3 The Services Directive and Cross-Border Operations

The first and foremost aim of the SD is to ***reduce barriers to cross-border mobility of service providers, including construction operators***, with regard to both the establishment in another MS and the cross-border provision of service. The reduction of these obstacles is expected to generate new business opportunities for companies. In addition to the simplifications applicable to both local and cross-border activities, discussed above in section A.5.2, , the SD includes the following specific provisions relating to norms specifically targeted at the freedom of establishment and cross-border activities:

1. the simplification of administrative procedures for all cross-border situations, resulting in simple form documents, acceptance of equivalent documents and tacit approval (art. 5 and 13);
2. the elimination of a large group of requirements and formalities concerning the cross-border provision of services on an occasional basis, including the elimination of the requirement of the establishment (article 16). These requirements may remain in place if found non-discriminatory, necessary and proportional; necessity is defined as justified for reasons of public policy, public security, public health, or the protection of the environment;
3. the elimination of the need to hire local staff when operating in another MS (art. 15(2)(f) and 16(2)(d));
4. the elimination of the need to proceed with corporate restructuring to meet entry requirements in another MS (art. 15(2)(b) and (c) and 25);
5. the disapplication of local rules on equipment and materials (art. 16(2)(f)) and of many other host MS requirements (art. 16);
6. the elimination of the need to acquire local insurance coverage when operating in another MS, provided that the provider already has an equivalent coverage in its home MS (art. 23);

The first step to measure the benefits of the SD in reducing cross-border barriers would be an ***estimation of how many construction companies operate in another MS***. However, these data are scarce, from either secondary sources[163] or stakeholder associations and governments. During the interviews, associations and public authorities were asked for additional data or estimates, but no information could be retrieved. Box A.5.1 below summarizes the information retrieved from Italian stakeholders, providing some hints, though partial and broader than the scope of the present Study, at least for Italy.

[163] A recent Commission document provides information on the relative Internal Market openness of several services sector, including construction. This is based on cross-border trade intensity (the average of intra-EU imports and exports over the total turnover of the sector); and intensity of secondary establishment (the share of value added generated by intra-EU foreign affiliates over total value added). Evidence shows that the construction sector is the least open among those covered by the analysis. However, the amount of turnover generated from imports/exports of service activies and the added value generated by intra-EU foreign affiliates do not allow to estimate the flows of construction companies and/or projects providing services abroad, which would be necessary to estimate regulatory barriers and new market opportunities linked to the SD – analogously to the work done in Section A.4 for the PQD. Cf. Commission Staff Working Document, A Single Market Strategy for Europe - Analysis and Evidence, Accompanying the document 'Upgrading the Single Market: more opportunities for people and business Brussels', 28.10.2015, SWD(2015)202. Cf. also Commission Staff Working Document, European Competitiveness Report 2014 'Helping Firms Grow', SWD(2014)277.

Box A.5.1 Cross-border activities of Italian construction companies

ANCE, the Italian construction federation, publishes a yearly report[164] on the activities of 38 large Italian construction companies[165] abroad, covering both construction of buildings and civil engineering. In 2014, Italian companies had a cumulated portfolio of 682 works abroad, worth about €73 bln. 11% of this value is generated in other EU MS,[166] and this share is growing, as the EU represented more than a quarter of new works obtained in 2014. However, only 6.6% of the cumulated portfolio concerns building works, the rest being attributable to civil engineering. Disentangling the share of building works in the EU from the total share of construction works in the EU is impossible.

The Italian commission of construction social security institutions (*Commissione nazionale paritetica per le Casse Edili*) collects data on Italian companies going abroad and posting workers from Italy, which can be used as a proxy for Italian companies providing cross-border services, though only concerning a subset of these companies. These data cover three countries, that are Austria, Germany, and France, with which bilateral agreements between social security institutions were signed. Even though distinguishing between various types of construction works is impossible, over 5 years (2010-2014), 32 Italian companies operated and posted workers in Austria, 69 in France, and 183 in Germany. Considering that both Austria and France are neighbouring countries, and are thus likely to be among the most frequent MS of destination, these data confirm that foreign operations by Italian building companies are quite limited.

Though estimates of foreign activities could not be provided, all stakeholders agreed on one consideration: ***cross-border operations by construction firms are currently very limited***, for structural reasons. The PWC report identifies four main reasons why the mobility of construction companies is limited:

1. **The limited radius of activity of micro and small companies** (representing the majority of firms in the sector), due to the high costs of transport of both workers and construction materials, with one stakeholder estimating this radius at about 50 to 60 km. The limited mobility of construction companies implies that cross-border activities may be relevant mostly in border regions, as confirmed by stakeholders (*'*[the] *cross-border provision of services on an occasional basis is a major issue only for companies in border areas'*);
2. **The high labour intensity**, making it difficult to move a large labour force over a long distance;
3. **The complexity of the supply chain**, as construction activities require multiple competences and professional figures, which are usually not available within a single company, especially if micro or small. As a result, construction companies rely on an established network of trusted counterparts, which can hardly be moved or replicated in distant geographical locations;
4. **Knowledge of the local market**, including both local building customs and demand features, as well as local building regulation.[167]

All in all, in the PWC report ***cross-border activities are considered the least important driver of competitiveness by construction companies.***[168]

However, the PWC report also states that: "[t]*he case of the construction sector is not one of regulatory arriers in certain Member States inhibiting cross-border activity but rather each Member State's plethora of regulations deterring market entry by non-domestic firms*."[169] This is even a more significan barrier for foreign construction service providers intending to enter the market. Several studies (although mostly related to professional services) have shown that: (i) heterogeneity of regulation across the EU is harmful for cross-border activities, and (ii) domestic regulation often has a *de facto* discriminatory effect on foreign service providers.

In any case, some of the drivers for the limited mobility of construction companies (e.g. limited radius of activities and knowledge of local markets) are mostly related to mobile entry modes. ***These obstacles can (at least partially) be overcome by entering the market in a more permanent way*** (e.g. through a branch set up for long-term local business development in the host market). For this reason, some studies have shown that

[164] ANCE (2015), Rapporto 2015 sulla presenza delle imprese di costruzione italiane nel mondo.
[165] These companies are considered representative of most of the foreign revenues generated abroad by Italian construction companies.
[166] Austria, Belgium, Bulgaria, Croazia, Denmark, France, Greece, Malta, Poland, Romania, Slovak Republic, and Sweden.
[167] PWC Report, at p. 336.
[168] Out of a list of 10 possible drivers. *Ibid.* at p. 371.
[169] PWC Report, at p. 340.

construction companies going abroad prefer a permanent establishment when the host market is unfamiliar, risky, with intense competition or with entry restrictions.[170]

Stakeholders largely confirmed these findings and analysis, with respect to both the limited foreign activities of construction companies, especially SME, and the reasons explaining this phenomenon. Several stakeholders mentioned that, for the building market, companies have an incentive to go abroad only for large works, both public (e.g. hospitals) or private (e.g. large industrial plants). This *per se* reduces feasible business opportunities for SME, which are less likely to access these market segments, at least as main contractors. In particular, a stakeholder association reported that the main barrier for a SME to go abroad is the *'lack of capacity in offering "all-inclusive" building services to foreign customers'*. Furthermore, as suggested by one stakeholder, an SME not only lacks the capacity to handle very large projects, but also *'sufficient financial means and* [the] *human resources necessary to operate abroad',* even as sub-contractor. One exception are SME with expertise in specialised construction services operating in niche markets, which are more likely to have a multi-country scope of activities.[171]

Hence, in the current stage of deficient and sometimes inexistent implementation of the Services Directive for construction service provision, allevidence points to the fact that most of foreign construction services are provided by large companies, which, because of their dimensions, are the least impacted by regulatory costs. Several stakeholders concurred that these companies have the structure and expertise to deal with persistent regulatory barriers, and that operations abroad are '*a permanent part of their business strategy'.* In other words, the incentives provided by large building projects abroad and the fact that a company is well positioned to access foreign markets reduce the impact of any regulatory obstacle even if often contrary to internal market legislation.

Importantly, as indicated, construction companies consider ***regulatory barriers are less important in preventing activities abroad than other structural drivers*** mentioned above. One national stakeholder association commented that *'the main reason [for not operating abroad] remains the need to adapt to local building customs, linguistic barriers, cultural barriers, and business practices'.* One stakeholder association even reported that regulatory costs for construction companies may be lower in other EU MS than in the home market, without this being a sufficient incentive for going abroad. When confronted with the hypothetical question about whether lower regulatory barriers would spur an increase in cross-border activities, most of the interviewees signalled that this is unlikely, at least in non-border regions or in non-specialised market segments. . Also, and importantly, a number of avenues exist for tackling regulatory barriers or reducing their possible negative impact. The most used consists in teaming up with local partners, which are knowledgeable of the local regulatory environment, and can thus drastically reduce the costs of familiarisation; also, local partners are already licensed to operate in the host MS (e.g. in case of professionals or craftsmen in regulated segments). Another strategy that was mentioned consists in acquiring local companies, so that the firm intending to operate abroad can incorporate local expertise and avoid the need to proceed with secondary establishments or via occasional a cross-border service provision. However, these strategies have direct (shared profits, acquisition costs) and indirect costs (such as lost market visibility), which deter cross-border activity and limit it to those larger projects, as often mentioned by construction companies, which in turn are only accessible to larger companies.

A limited number of complaints on the functioning of the SD, and more in general of the Internal Market for construction services, at least for companies already benefiting from it, is another reason why regulatory barriers are not perceived as a main obstacle for cross-border activities. This is the case again given the limited knowledge of internal market legislation, particularly by SME, and also due to the fact that larger companies have the means to deal with most regulatory obstacles, irrespective of their legality under internal market legislation, once the most restrictive ones have been scrapped. One stakeholder association commented that '[the] *freedom of establishment is not an issue, though few problems remain concerning the cross-border provision of services'.* Another one commented that the SD *'had a positive effect for cross-border companies: though the Single Market is far from being perfect and implementation is uneven, the most blatant requirements*

[170] Chuan C. (2008), Entry mode selection for international construction markets: the influence of host country related factors, Construction Management and Economics, Vol. 26, No. 3.

[171] Examples provided by various stakeholders concerned SME operating in the segments of construction of wooden houses, construction of top-of-the-league energy efficient buildings, and energy renovations of social houses.

were indeed scrapped' from national legislations. *'Large contractors that intend to work abroad,'* – it was added – *'can do so, without major issues, a part from some specific bilateral problems'.* In a nutshell, large construction companies are used to work in a fragmented market, remaining so across several fault lines including regulatory barriers. A national association praised the Commission's efforts to tackle certain regulatory obstacles, as detailed in the 2015 Communication on upgrading the Single Market.[172] Specifically, the initiatives targeted at easing the identification and provision of information by construction companies (including the 'services passport')[173] and at improving the effectiveness of the SD by reforming the notification procedures were considered as being potentially the most impactful. In addition to that, respondents mentioned that not all problems are linked to, and can thus be solved through, the SD: other pieces of legislation on social security, and the free movement of goods and professionals are relevant as well.[174] Concerning the PSC, one association stated that *'it is useful for secondary establishment, though much less for temporary provision'*, but again due to implementation gaps, because the national PSC are largely not suited to provide information on local building regulations and act as liaison point with the local authorities involved.

Concerning other paperwork duties, the SD requires MS to accept attestations and documents that a company obtained in the home MS, without asking for additional equivalent certifications and verifications. However, the empirical findings suggest that that this acceptance rule is not implemented in some MS. Also, mutual recognition is not working to its full extent in the construction sector, for various reasons. The Ecorys report found e.g. a lack of specific recognition principles and established procedures concerning the use of equipment for building works, and that the mutual recognition of insurance coverage is hampered because of both factual and procedural reasons (as discussed more in detail here below).[175] With regard to the lack of specific procedure,: in most MS, at least where the SD was transposed by means of a horizontal act, the mutual recognition principle is included, but no specific procedures are set out to apply it.[176] When called to toimplement the mutual recognition principle, public authorities, especially at local level, usually lack established procedures to that end. As a result, this provision is only limitedly resorted to. In addition to that, mutual recognition is hampered by the fact that only few MS adopt performance-based standards, as opposed to specific rules.[177]

Insurance requirements. A specific effort was made to identify the effects of insurance requirements on cross-border activities on construction operators. To this purpose, two national insurance federations were also interviewed. The applicable legal framework is as follows. Art. 23 of the SD allows MS to require the subscription of a professional liability insurance or the provision of a financial guarantee from services carrying out activities presenting a risk to health, safety or financial security of recipients. The same article, though, requires that, when a provider establishes itself in its territory, the MS shall accept an equivalent or essentially comparable insurance coverage already subscribed by that provider in its home MS. In particular, insurance or guarantees issued by another MS finance institution or insurance company shall be accepted, as long as equivalent or essentially comparable.[178]

Insurance requirements may indeed create barriers to the free movement of service providers, in case of activities presenting health, safety or financial security risks. This is the case for example for medical professions, tax advisors, lawyers, and construction operators. With respect to the latter, the problems in the mutual recognition of insurance requirements have various roots, linked both to the regulatory framework and the functioning of the insurance market:

[172] Communication from the Commission, Upgrading the Single Market: more opportunities for people and business, COM(2015)550, 28.10.2015.
[173] *Ibid.* at §2.3.
[174] Further than the PQD, two acts were mentioned: (i) Regulation (EC) No 883/2004 of the European Parliament and of the Council on the coordination of social security systems; and (ii) Regulation (EC) No 764/2008 of the european Parliament and of the Council laying down procedures relating to the application of certain national technical rules to products lawfully marketed in another Member State and repealing Decision No 3052/95/EC.
[175] Ecorys study, at p. 74.
[176] *Ibid.* at p.79.
[177] *Ibid.* at p. 72.
[178] Art. 23 SD. Cf. also art 14(7). See Commission Staff Working Document, Access to insurance for services provided in another Member State, SWD(2014)130.

1. ***National regulatory frameworks on insurance requirements are extremely different*** from country to country, and no EU piece of legislation harmonises the professional liability for construction operators. Firstly, national frameworks vary with respect to the operators to which an insurance is mandated, i.e. construction companies, construction professionals, both, or neither of them. Secondly, national frameworks vary to an even greater extent with regard to the duration, the risks to be insured, the choice between joint and several liability, and the coverage of post-completion building defects.[179] As a result, assessing whether an insurance issued in country A can be considered as 'equivalent or essentially comparable' in light of the requirements of country B is very difficult.

2. ***The professional liability insurance is a complex product***, and the coverage granted to the insured company may vary over a large number of parameters, such as the type of insured risk, the insured sums, the ceilings, the deductibles, the coverage of accessory costs, and the exclusions. Consequently, assessing whether each insurance coverage subscribed by a foreign construction operator is 'equivalent or essentially comparable' given the requirements of the host MS is even more difficult. Furthermore, toping-up an existing coverage so that it complies with the host country requirements can be extremely complex, because basic products may present features preventing such addition.[180]

3. Finally, ***insurance markets tend to exclude the coverage of idiosyncratic risks***, i.e. those risks for which an insurer cannot estimate ex ante the statistical (actuarial) distribution of probability of adverse events. This may be the case, for example, if a cross-border service provider asks to its own insurance company to cover risks determined by a foreign regulatory framework, which the insurer does not know; or if a foreign cross-border provider tries to buy a coverage from a host MS insurance company, which does not know the provider. In both cases, distribution risks cannot be estimated and the cross-border service provider may not be able to buy a coverage.

Broadly speaking, insurance requirements are still considered a barrier by stakeholder associations, and some of the interviewees reported that they could not rely on their own insurance coverage when going abroad. However, ***stakeholders concurred that problems are less significant than a few years ago***. In particular, reference were made to the fact that companies intending to operate in France found it very difficult to buy a coverage for the *garantie décennale* required from contractors. A market-based solution was eventually identified, and perceived as a working solution. Currently, in French neighbouring countries, stakeholders report that the purchase of such a coverage is possible, though problems can still exist concerning the insurance costs, which may not be worth to be incurred for small projects or for works with a short duration.Before 2010, buying an insurance coverage for the French *garantie décennale* was difficult, or even impossible, for foreign construction operators. In 2010, the French federation of insurance companies set up a point of contact for foreign companies, providing information about insurance requirements and a guide on how to obtain a coverage.[181] At the same time, agreements were signed between French and other EU insurance companies to ensure the flow of information about insured subjects and risks, and thus to sell, or have sold by a partner company, the coverage requested.

In a nutshell, today a construction company intending to operate in France has three possibilities:

1. If its own insurance company sells the coverage for the *garantie décennale,* the contractor can adapt its existing insurance contract. This service is available only through specialised insurance providers, such as VHV in Germany, offering a coverage for the *garantie décennale* to its German subscribers;
2. If its insurance company is part of a multinational group or one of the agreements mentioned above, the contractor can be redirected to its company's French counterpart and negotiate the purchase of the coverage. This case is also relevant to contractors wishing to operate in any other MS: to top-up or purchase a coverage in compliance with the host country legislation, a contractor may contact its own insurance company, which can redirect the client to an international partner, e.g. within the same insurance group or its network;

[179] For an overview of national practices, Cf. the ELIOS project (2010), liability and insurance regimes in the construction sector: national schemes and guidelines to stimulate innovation and sustainability, Special report on liability and insurance regimes in 27 EU Member States.

[180] Cf. Expert Group on European Insurance Contract Law (2013), Discussion Paper 5: Liability Insurance, Meeting of 9-10 September.

[181] Available at: http://www.ffsa.fr/sites/jcms/p1_1591570/fr/construction-insurance-the-bureau-of-european-manufacturers-set-up-by-the-ffsa?cc=p1_1371900 (last accessed on March, 2016).

3. If neither of these situations applies, the contractor may look for a French insurance broker, and may be supported by the federation's point of contact in doing so.

In any case, the fact remains that, also in relation to insurance, implementation of the SD by MS is virtually non-existent and construction companies are forced to resort to costly alternatives which reduce the number of cross-border activities, limiting it to larger companies which can bear the costs of such alternative solutions.

Insurance federations were also surveyed concerning the number of cross-border coverage provided obtain additional data to measure international flows. Data for two insurance companies were provided, and the number of contracts with foreign contractors entering the French market amounts approximately to a few hundreds per year.

Interviews with companies. As mentioned above in Section A.5.1, efforts were made to include construction companies with cross-border experience within the sample. In line with the analysis and the empirical findings of this chapter, cross-border construction companies are limited in number, and usually not representative of the general universe, as they tend to be (i) larger; (ii) specialised in niche markets; or (iii) established in border regions.

A quarter of the respondents provided cross-border services after 2009, i.e. including the period when the SD had already deployed its effects. Service were provided through the respondents' own company, a subsidiary incorporated in the host MS, or both. The choice depends on the size of the companies, as only two large companies reported having established a subsidiary abroad. One respondent suggested that the easiest way for operating abroad is the following: *'a local subsidiary can be established – just an office – in the host MS, which can take care of all the administrative work, and then subcontract the bulk of the works to the mother company'.* Small companies are more likely to work in their own name, and largely as sub-contractors of larger companies from the same MS.

Few companies could indicate whether certain requirements were abolished after the introduction of SD, e.g. concerning the use of own equipment or the acceptance of equivalent documentation. Most significantly, as in the case of internal simplifications, no company could provide an estimate of the cost savings linked to the elimination or reduction of regulatory barriers. A large Italian company mentioned that it could rely on equivalent documentations issued from the home MS to comply with the host country requirements, reducing the lead time and paperwork costs. In addition to that, several firms mentioned that they were not subject to any requirement concerning the use of own equipment, and that the elimination of the obligation to hire local workers reduced the lead time and the risks linked to the limited knowledge of the local pool of expertise.

A.5.4 The Inward Effects of the Services Directive

Stakeholder associations, governments and companies – both those operating cross-border and those which only operate locally – were also interviewed on the inward effects of the SD, i.e. asking whether they could see an increase in operators coming from other EU countries in their local markets. Since a limited number of construction companies currently operate abroad (as shown in section A.4.3 above), grievances concerning the increase of competition were expected to be limited. Interestingly, this was not the case uniformly across the EU: ***in some countries, and in some market segments, both stakeholder associations and companies reported an increase in competition***. How can these findings be reconciled with those presented above not pointing out a significant effect attributable to the SD? The most plausible answer is that stakeholders perceive the increased competition not so much from actual cross-border construction service providers, but mostly from companies merely posting workers across borders. The posting of workers Directive,[182] is therefore apparently attributed a larger role in bringing competitors from other EU MS in relation to the workforce construction market. The role of irregular jobs, including possible abuses of certain worker status (i.e. the 'fake independent worker')

[182] Directive 96/71/EC of the European Parliament and of the Council concerning the posting of workers in the framework of the provision of services. See also the so-called Enforcement Directive, that is Directive 2014/67/EU of the European Parliament and of the Council on the enforcement of Directive 96/71/EC concerning the posting of workers in the framework of the provision of services and amending Regulation (EU) No 1024/2012 on administrative cooperation through the Internal Market Information System ('the IMI Regulation').

was also mentioned. The largest impacts are thus generated by the flow of foreign employees which falls outside the scope of the SD, as opposed to companies or independent workers covered by the SD.

Again, to the analysis should start from quantitative data or estimates concerning the number of construction operators active in other EU MS. As already discussed in section A.5.3 above, such data are limited Some data is available and was collected concerning posting of workers, [183] which is however out of the scope of the study.

The negative perception of increased competition within the Single Market is not equally spread across countries, firms and market segments. The most affected actors include:

1. **SME**. As discussed above, the bulk of cross-border activities in the construction sector is carried out by larger firms, which are better equipped to work at long distances and in different market environments, also because of a poor or inexistent internal market for construction services To the contrary, the benefit from the opening of the Single Market to SME are more limited, for the same reason. This implies that, in a cost-benefit comparison, SME are more likely to suffer from the increased competitive pressure without enjoying more opportunities in other MS. This cleavage can be noticed both in the firms' opinions, and in the considerations of SME-specific trade associations, both at national and EU level.

2. **Labour-intensive market segments.** The competitive pressure due to labour mobility is higher for certain market segments with a higher labour intensity and a lower skill intensity, as in the case of certain building services such as plasterers, tilers, bricklayers. Those services are more mobile, i.e. can be provided at longer distance without incurring in prohibitive costs, and more fungible, i.e. the use of the firm's local network of competences may not be necessary. On the contrary, contractors, i.e. those firms whose activity has higher capital endowments and added value, rarely complain about the increase in competition. Rather, conctractors may benefit from cheaper sub-contractors originating from other MS, though most of the benefits are usually attributed to the availability of foreign workers rather than firms. Importantly, this cleavage partially overlaps with the one above, as SME are more likely to populate the most affected market segments.

3. **Geographical areas.** The tone of comments and data retrieved shows a variation across geographical areas. First and foremost, the impact of increased competition is mostly felt in the Member States which (i) can be conveniently reached, e.g. are not islands or too peripheric; (ii) have high gross labour costs, i.e. including taxation and social contribution; and (iii) have a healthier and sufficiently large construction market to justify access by foreign companies from an economic point of view. Furthermore, the impact on healthier markets has been exacerbated in recent times due to the economic crisis which has affected severely the construction markets in certain MS.[184] Belgium and France correspond to these descriptions and were among the countries in which both companies and trade associations had the most negative assessment of increased competition, again with a distinction between SME and large companies and stakeholder associations. Italy is a case in point with regard to this difference, as foreign presence is relevant in Northern regions, which are more easily reachable and have a healthier market, but almost absent in Southern areas.

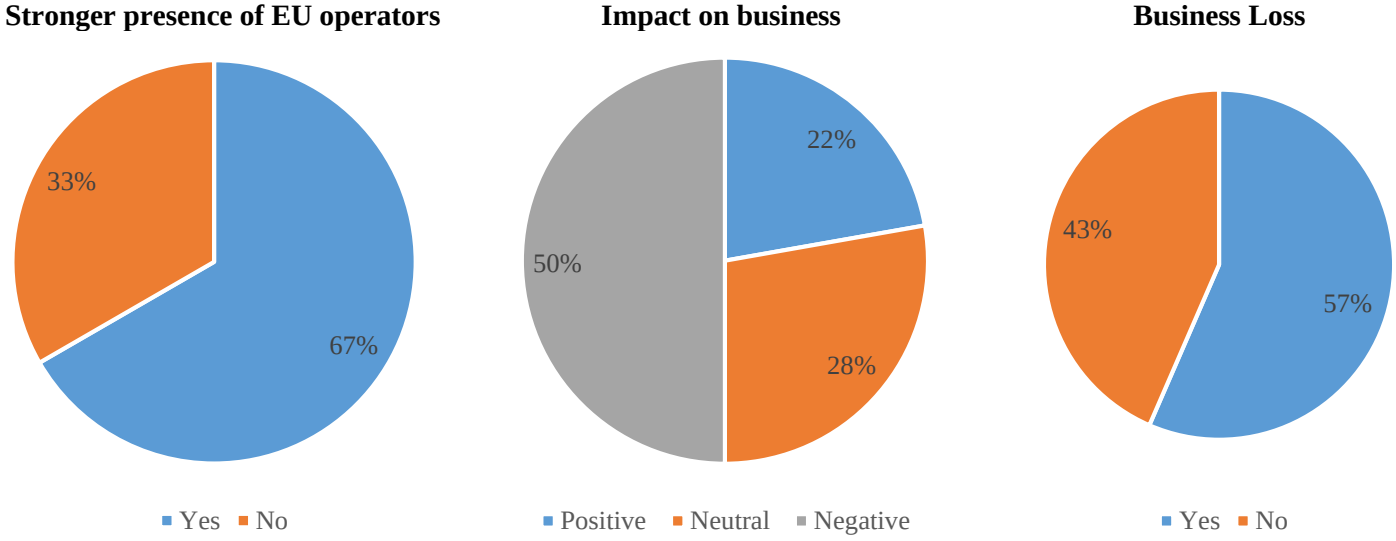
Clearly, ***stakeholders rarely attributed the negative effects of increased and possibly unfair competition to the SD***. Actually, even in one the most affected countries, one SME stakeholder association considered the impacts of the SD as *'marginal',* and that the situation did not significantly change after the implementation of the SD. Stakeholders' grievances were mainly targeted at the posting of workers Directive, with regard to both its provision and its enforcement, and the abuse of workers status by so-called 'fake independents'. As for the former, the posting of workers Directive is perceived as an attempt to create a playing field which is not even, because of substantial differences in wage costs and wage components across MS. Furthermore, both governments and associations underlined that a proper enforcement of the Directive, including a verification that workers respect the conditions required in the host country, is complex and the results are not yet

[183] See http://ec.europa.eu/social/main.jsp?catId=471
[184] See Section A.2.1 above.

satisfactory. At the same time, respondents recognized that the new provisions making the main contractor co-responsible for frauds provides disincentives against misuses or abuses.[185] As for the latter, the abuse of the status of independent worker concerns the case in which a foreign construction worker operates *de facto* as an employee, but, based on its status of independent worker granted in the home MS, is not subject to the local regulation on salaries, taxes, contributions and working conditions for employees. Also in this case, problems relate not only to the EU legislative framework, though the SD has a role in improving conditions for the free movement of independent service providers, but also to the controls at national and local level by labour authorities. The relative importance of the role of the EU framework and enforcement actions is not clear: both a government and a stakeholder association from the same country suggested that enforcement is difficult because the SD allows services providers to operate freely in other MS. However, the verification of whether an independent worker is working as such or is an employee in disguise is not covered by the SD and remains largely within national legislative and administrative competences. Framework control rules recently put in place by the Enforcement Directive of the Posting of Workers Directive are expected to facilitate and streamline controls in this regard.

Interviews with companies. Construction companies and installers were first asked whether they could observe a stronger presence of foreign operators from other EU MS from 2009 onwards with 68% reporting that this was the case. For those who answered affirmatively, subsequent questions asked whether their business was affected by additional competitions from EU operators, and whether they had lost any business for this reason. 22% of respondents reported a positive impact from the increased presence of EU operators, e.g. due to lower price sub-suppliers or the possibility of resorting to a larger pool of expertise; 28% reported no impact from foreign competition; and 50% reported a negative impact. When asked whether the negative impacts translated into lost business, 57% of the respondents answered affirmatively. The results are shown in Exhibit A.5.3 below.

Exhibit A.5.3 Impact of EU competition on construction operators (contractors and installers)[186]



Considering the cleavages discussed above, large companies are less likely to have noticed stronger EU competition over the recent years (50% of affirmative answers against 68% among the total number of respondents). As for geographical areas, 100% of Belgian and French respondents reported an increase in competition, while, at the other end of the spectrum, the share is the lowest for British and German operators.

As anticipated, about one fifth of the respondents did enjoy benefits from a more intense presence of EU operators. The benefit mentioned the most is the availability of cheaper suppliers, reportedly without significant losses in terms of quality of the works. A German respondent mentioned that it could position itself

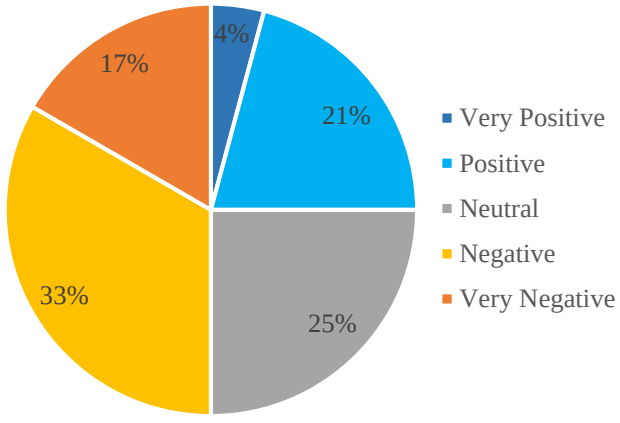
[185] The Enforcement Directive was approved in 2014 and is yet in its trasposition phase, so the findings do not concern the effect of this piece of legislation.
[186] Number of respondents: (i) stronger presence of EU operators: 36; (ii) impact on business: 27; (iii) business loss: 22.

in higher market segments, while foreign operators occupied lower quality segments. A Belgian company had to focus on training and sustainable construction to change market segment and escape the downward pressure on price created by foreign competitors. The comments reported by respondents which are negatively affected largely mirror the previous ones: foreign competitors put a downward pressure on prices, which can hardly be sustained, especially if, as repeatedly pointed out, foreign companies structurally have lower costs (e.g. because of social security contributions) or do not respect local labour legislation. These considerations are almost unanimous across companies and MS. In the words of one of the respondents, *'choosing to open borders without harmonising fiscal and social security systems is a serious fault and a non-understandable error'.* In a nutshell, those firms reporting a negative impact are very likely to perceive this competition us unfair, rather than based on merit. This evidence confirms that the perception of impacts comes rather from labour and social security legislation and not from the impact (or lack thereof) of the SD.

A.5.5 Conclusions

The assessment of the effects of the SD on the construction sector focused on three different areas: (i) simplifications; (ii) new business opportunities for cross-border companies; and (iii) the impact of increased foreign competition. Across all these areas, the effects were discussed, significant data gaps with regard to cross-border construction activities notwithstanding. The impacts are considered not to be significant for various reasons, including the challenge in implementing simplifications at local level and the limited mobility of construction companies. Furthermore, as the regulatory framework for both internal and cross-border construction activities depends on a complex group of intertwined pieces of legislation, at EU, national and local level, attributing specific impacts clearly to the SD based on the evidences retrieved is difficult.
It appears clearly that, due to a very limited and sometimes inexistent specific implementation of the Services Directive for the construction sector, the impact of simplification and new business opportunities is also, accordingly, very limited or inexistent. This, in turn, translates into a lack of perceived impact by construction operators. Due to a generalised lack of knowledge of the SD, its lack of implementation on the ground and to a specific focus on labour and social security issues, the perceived assessment by firms of the impact of the elimination of barriers can only marginally be attributed to the SD itself, instead referring to other fields of EU law governing labour and social security issues.

Exhibit A.5.4 Firm overall assessment of the elimination of barriers to cross-border operations



To conclude, Exhibit A.5.4 (left) portrays the overall assessment of the elimination of barriers to cross-border operations for construction companies and installers. That is, the question takes into account the benefits due to new business opportunities abroad, the benefits due to the entry of other operators in the home market, and the costs due to increased competition. A quarter of the respondents[187] had a positive or very positive view, while 50% held a negative or very negative view. The sample of companies interviewed appears thus split between a group of companies benefiting from Single Market integration, more likely among those operating abroad or benefiting from cheaper sub-contractors, and a majority of companies for which costs overcome benefits.

[187] Number of respondents: 24.

A.6 MARKET OPPORTUNITIES LINKED TO ENERGY EFFICIENCY IN BUILDINGS

A.6.1 Introduction

The analysis carried out at the inception stage suggested that EU legislation, and in particular the EPBD, could result in "New business opportunities linked to the growing demand for energy-efficient buildings, building systems and materials in order to meet energy performance requirements."[188] This section is devoted to the assessment of these market opportunities, through an estimation of the turnover linked to the introduction of stricter energy efficiency (EE) standards, hereinafter referred to as the 'EE market'.

The assessment of the EE market focuses on the residential buildings sub-sector, with a detailed analysis of both new buildings and building renovation. Due to lack of information, no attempt was made to cover the non-residential buildings sub-sector. The analysis relies on the methodology for estimating the effects of EU legislation presented in the Inception Report.[189] In practice, the exercise relied on a combination of elements drawn from secondary sources and information obtained during interviews with stakeholders and firms. In general, the information from secondary sources was used as a starting point, with interviews being used for validation purposes. It is important to note that some of the information used for the analysis presented here is still in the process of being verified. Therefore, all the results presented in this Section must be regarded as provisional, and subject to modification in the following stages of the Study.

The section is structured as follows:

- Section A.6.2 reviews the key developments in the regulatory framework;
- Section A.6.3 provides an overview of the main EE-related support measures;
- Section A.6.4 provides an assessment of the EE market for the new buildings segment;
- Section A.6.5 does the same regarding the EE market for the buildings renovation segment;
- Section A.6.6 summarizes the results and elaborates on the influence exerted by EU legislation.

A.6.2 Developments in the Regulatory Framework[190]

The requirements for energy performance in buildings (EPB) are incorporated in building codes or equivalent regulations developed by governments authorities at the national and/or at the regional/local levels. Most of the countries covered by this Study have a fairly long history of regulating EPB, with the first provisions often dating back to the 1970s or even the 1960s. During the 2004 – 2014 period, the regulatory framework underwent significant changes in all the countries. The main developments in each of the ten countries analyzed in detail are summarized in the following paragraphs.

Belgium. In Belgium, the responsibility for the setting of energy requirements in buildings rests with regional authorities. Until the end of the 1990s, in all the regions EPB requirements mostly consisted of minimum levels of thermal insulation. Subsequent developments led to some differentiation across the regions. In the Flanders, a new set of energy performance requirements was introduced in 2006, covering both new buildings and major renovations. The standards were strengthened in 2008, entailing a 20% reduction in energy requirements. This was followed by a further tightening in 2011, entailing an additional 10% reduction in energy requirements. In Bruxelles and Wallonia the regulatory framework had a similar evolution, although with a time lag of a couple of years. As a result, the EPB parameters in force at the end of the period under consideration were comparatively less stringent (e.g. in Wallonia the transition from the so called E100 to E80 standard for new buildings was to be completed by December 2013, whereas in Flanders this was achieved two years earlier)

Denmark. In Denmark, the first prescriptive provisions on energy requirements for buildings date back to 1961. Requirements were progressively refined over time, with a major tightening in 1995. In 2005, a major

[188] Inception Report (Revised), 19 October 2015, page 17.
[189] See Inception Report (Revised), section 4, in particular the paragraph concerning the estimation of new business opportunities and efficiency gains.
[190] Information for this section was mainly derived from the documents produced in the framework of the Concerted Action Energy Performance of Buildings Directive (hereinafter 'Concerted Action'). In particular, reference was made to the volume Concerted Action, Implementing the Energy Performance of Buildings Directive – Featuring Country Reports 2012, October 2013 (hereinafter, 'Concerted Action 2013') and to the previous implementation reports in the various countries (hereinafter, 'Country Reports').

reform of the Building Code led to a strengthening of technical parameters for both new buildings and renovations, entailing a 25% reduction in energy requirements compared with the 1995 levels. In addition, the implementation of selected measures was made mandatory in all renovations, irrespective of their size. A further tightening of parameters for new buildings took place in 2010, requiring a 25% reduction compared with 2005, with another 25% improvement expected to take place by 2020. In addition, the implementation of measures with a short payback period was made mandatory in all renovations.

France. In France, the first Réglementation Thermique (RT) covering insulation and heating systems in new residential buildings was introduced in 1974 (RT1974). New regulations were adopted in 1988 and 2000, extending the coverage to non-residential buildings and introducing stricter primary energy requirements. After the adoption of the EPBD 2002, a new regulation was passed in 2005 (RT2005), with the lowering of energy requirements to 150 kWh/year/sqm. In 2007, energy requirements were for the first time extended to building renovations and the concept of low energy building was introduced. In the late 2000s, following the adoption by the government of an ambitious environment plan, special measures were introduced for heating systems (2009) and air conditioning (2010). Finally, a new regulation was adopted in 2012 (RT2012), requiring a drastic reduction in energy consumption levels in new buildings, with targets of 50 and 70 kWh/year/sqm for, respectively, residential and non-residential buildings.

Germany. In Germany, requirements concerning the energy performance of buildings have been in place since 1977. Stricter parameters for the thermal insulation of new buildings were introduced in the following two decades, and in 1995 permissible primary energy levels were lowered by some 40%. Energy performance requirements were significantly strengthened in 2002, with the approval of the first Energieeinsparverordnung (EnEV2002), which set a limit of 100 kWh/year/sqm for new buildings and introduced requirements for building renovations. Important changes took place at the end of the 2000s, with the approval of the EnEV2009, which reduced the upper limits for new buildings by 30%, introduced the obligation to generate at least 15% of the energy through RES, and imposed several specific measures for renovations (insulation of attics, replacement of boilers more than 30 years old). Finally, following the adoption of the EPBD 2010, a new regulation was approved at the end of 2013 and became effective in 2014 (EnEV2014). The regulation entails a further tightening of requirements, with the objective of achieving the nearly-zero energy standard in all new buildings by 2021.

Ireland. In Ireland, the first thermal performance standards were introduced in the Building Regulations in 1992. The first performance-based code was adopted in 2002, with the setting of a primary energy requirement target (156 kWh/year/sqm). The parameters for residential buildings were strengthened in 2007, with the introduction of a minimum requirement for RES and a 40% reduction in overall energy requirements compared with 2002 levels. These requirements were extended to non-residential buildings in 2008. A major revision of the Building Regulations took place in 2010, with a further 20% lowering of energy requirements compared with 2002 levels and the introduction of a series of specific provisions for residential buildings (improvements in wall, roof and floor insulation; deployment of higher efficiency oil and gas boilers; etc.).

Italy. Legislation on EPB was first introduced in 1976, with additional measures adopted in the early 1990s. Regulations were modified in 2005, in parallel with EPBD 2002 transposition, with the setting of a set of stricter primary energy requirements to be implemented over a 6-year period, leading to a final value of 71.2 kWh/year/sqm starting from January 2010. The same parameters were applicable for large renovations, while smaller scale renovations were subject to less strict requirements. Minimum requirements regarding RES were introduced in 2009, again to be implemented gradually over a 5-year period. The EPBD 2010 was transposed in 2013, paving the way for the adoption in mid-2015 of new regulations concerning the Near Zero Energy Buildings (NZEB). In Italy, energy policy is a shared competence between the state and the regions and the latter are entitled to adopt stricter regulations. For instance, in Lombardia, a regional law passed in 2012 requires all new buildings to meet the NZEB standards from January 2016, well ahead of what envisaged by national legislation.

Poland. In Poland, energy performance standards were not particularly stringent until the mid-late 1990s. A significant step was undertaken in 1998, with the passing of the Thermo-Modernization Act, which established the first instrument aimed at improving energy efficiency in buildings. Prior to EU accession, a new set of requirements for individual building components was adopted in 2002. The systems was modified in 2008, in

parallel with the EPBD 2002 transposition, when performance-based requirements were also added. However, the coexistence of prescriptive and performance-based approaches resulted in inconsistencies, in certain cases leading to a de facto lowering of standards. Minimum requirements for renewable energy in large building were introduced in 2009. Finally, a new set of stricter parameters was introduced in 2013, with the new requirements to be gradually fulfilled starting from 2014.

Romania. In Romania, technical requirements concerning the energy performance of buildings are set in the so called C107 regulation. Originally approved in 1997 and entered into force in 1998, the regulation was applicable to new buildings and extensions. Some amendments to the C107 regulation were introduced in 2000. The regulation was again amended at the end of 2005, in parallel with the transposition of the EPBD 2002, with the adoption of new requirements for both new buildings and major renovations that entered into force in 2007. The C107 regulation was again modified in October 2010, with the strengthening of thermal resistance parameters for renovations, and the setting of maximum heating energy consumption at 100 kWh/sqm/year.

Spain. In Spain, minimum energy performance standards for new buildings were first introduced in 1979. There were some modifications in 1998, with the adoption of the Reglamento de Instalaciones Térmicas en los Edificios (RITE), but the regulatory framework remained basically unaltered until 2006, when the Código Técnico de la Edificación (CTE) was approved. The adoption of the CTE coincided with the transposition of the EPBD 2002, resulting in the strengthening of minimum standards for new buildings (de facto corresponding to the EPC's D class) and the introduction for the first time of minimum requirements for large renovations. Additional requirements concerning ventilation and other aspects were introduced in 2007, with a modification of the RITE. The CTE/RITE were amended in 2013, as part of the transposition of the EPBD 2010. The new regulations entail a significant strengthening of EE parameters for new buildings, with minimum requirements equivalent to those applicable for the EPC's B class.

United Kingdom.[191] In the UK, prescriptive energy requirements were first introduced in 1976, when a schedule on the 'conservation of fuel and power' was added to the Building Regulations. Over the subsequent two decades, EPB requirements were somewhat strengthened, with significant changes taking place in 1994 and in 2000. The Building Regulations were again modified in 2005 and 2006, in parallel with the transposition of EPBD 2002. These amendments lowered EPB requirements by 20% for residential building and by 23%-28% for non-residential buildings and made mandatory the installation of high efficiency condensing boilers. Following the approval of the Climate Change Act of 2008, a new change occurred in 2010, when the requirements were again lowered by 25% for both residential and non-residential buildings (although leaving largely unchanged the minimum performance for individual building components). Finally, regulations were again modified in 2013. Initially motivated by the ambitious objective of achieving the NZEB stage by 2016, the 2013 revision was originally expected to result in another major cut in energy requirements, but eventually involved a reduction of only 6% for dwellings and 9% for non-residential building. The new provisions became effective in April 2014.

Summing Up. On the regulatory front, the 2004 – 2014 period is characterized by two elements common to all the countries, namely: (i) the significant strengthening of EPB requirements, and (ii) the growing attention paid to building renovations. However, the process was far from uniform, with some countries opting for a more gradual approach and others modifying the levels of ambition 'en route'. Differences also persist in the way in which the EPB requirements are expressed. While there was a general trend towards the adoption of performance-based requirements (i.e. considering the energy performance of buildings as a whole), in several cases prescriptive elements are still present in building codes. While this is justified on several grounds, especially in the case of renovations, it also makes it more difficult to properly compare EPB requirements across countries.

[191] The analysis presented here only refers to developments in England and Wales. In Scotland and Northern Ireland, EE regulations followed a similar pattern, with only marginal differences.

A.6.3 National Financial Support Measures[192]

Changes in the regulatory framework have been paralleled by the deployment of financial measures aimed at supporting EE in buildings. The main programmes implemented over the 2004 – 2014 period in the ten countries covered by the Study are illustrated in the following paragraphs. It is important to note that EE-related measures coexist with a number of other instruments aimed at supporting building construction and/or renovation 'in general'. Notable examples of these general measures include: (i) the preferential VAT regimes adopted for the construction sector in France, Spain and Italy; (ii) the tax deductibility of certain categories of expenses for renovation works in Italy, Ireland and Germany; (iv) the accelerated depreciation scheme used in France for built-to-rent buildings (recently discontinued and replaced with a tax credit mechanism); and (v) various subsidized lending or (more rarely) grant schemes targeted at special categories (e.g. first-time buyers) in all countries. Often, these 'generic' support schemes can be cumulated with EE-related schemes, making it difficult to precisely assess the separate impact of the various instruments.

Belgium. In Belgium, support measures target both renovation and new buildings, and include preferential tax regimes, grants and subsidized loans. At the federal level, a tax deduction scheme for EE measures was introduced in 2004. However, following the fiscal reform of 2012, since 2013 the scheme only applies to roof insulation works. Grant and subsidized lending schemes are managed by regional authorities. Mostly launched in the mid-late 2000s, these schemes have undergone several modifications, with changes in the scope of application and/or in eligibility requirements and/or in the level of subsidy. For instance, in Bruxelles, the grant available under the 'Primes énergie' scheme for the purchase of a 'contruction neuve passive' declined from € 100/sqm in 2009 to a maximum of € 40/sqm in 2014. In the Flemish region, new buildings displaying better than mandatory requirements benefit from a reduction in property tax. Introduced in 2008, the scheme was revised in 2014 to reflect the tighter energy requirements set in EE regulations. Finally, at federal level, since the year 2000 general renovation works benefit from a reduced VAT rate (6% compared with the 21% standard rate). Initially applicable to the renovation of buildings more than five years old, since 2015 this benefit only concerns buildings that are more than ten years old.

Denmark. Denmark is a somewhat special case, as government authorities have scarcely relied on 'direct' support schemes, involving the provision of grants or subsidized loans. The achievement of the EE objectives in the building sector is pursued primarily through tax policy (Danish energy tax rates are among the highest in the world), an extensive reliance on energy efficiency obligation schemes, and information diffusion and awareness increasing tools.

France. In France, government measures supporting EE-related improvements mostly focus on building renovation, although assistance is also extended to new buildings. A tax credit mechanism (crédit d'impôt développement durable – CIDD) was established in 2005 to support a wide range of EE-related interventions, from insulation works to the acquisition and installation of high performance heating systems. The tax deduction rate varied depending upon the nature of the intervention, with higher levels of support reserved to complex interventions. The mechanism was replaced at the end of 2014, with the introduction of the crédit d'impôt pour la transition énergétique (CITE), with a standard 30% rate. A subsidized lending scheme (Eco-prêt à taux zero - eco-PTZ) was introduced in 2009, with the objective of supporting 'deep renovations'. This is a variant of a pre-existing scheme (Prêt à taux zero – PTZ) supporting the acquisition or renovation of buildings by first time owners. EE-related renovation works also benefit from a considerably reduced VAT rate (5.5% and in some years 7%), while generic building renovation benefits from VAT at 10% (recently increased from the previous 7%).

Germany. In Germany, EE-related support measures concern both new buildings and renovations and essentially consist of subsidized loans and grants. Both schemes are managed by Kreditanstalt für Wiederaufbau (KfW). In the case of new buildings, support is provided only for those outperforming the

[192] EE-related financial instruments have been analyzed in a variety of studies. Comprehensive reviews include: ODYSSE – MURE, Synthesis: Energy Efficiency Trends and Policies in the EU, September 2015; Energy Efficiency Financial Institutions Group, Energy Efficiency – the first fuel for the EU Economy - How to drive new finance for energy efficiency investments, February 2015; and BPIE, Energy Efficiency Policies in Buildings – The Use of Financial Instruments at Member State Level, August 2012. This section is based on these reports as well as on other sources (press releases, government documents, etc.) providing information on the latest developments up to end 2014.

minimum statutory limits, and the intensity of subsidy ('grant element') increases with the level of energy performance. The same logic applies to renovations, although in this case the energy performance levels may well remain above the statutory limits for corresponding new buildings. In this case, assistance is mostly provided to comprehensive renovations, although support (in the form of grants) can also be provided to specific measures. Subsidized loans cover up to 30% of the value of the building, with a maximum value of € 100,000, while grants for specific measures cover up to 10% of total renovation costs. EE-related tax deductions were used in the past but have been discontinued, and their possible reintroduction was recently the subject of a heated debate. Instead, generic renovation works carried out by craftsmen still benefit from a 10% tax deduction.

Ireland. Government support schemes focus on building renovation and mostly rely on grant funding. The oldest program, Warmer Homes, launched back in 2000 and implemented through a network of not-for-profit organizations and private contractors, provides free EE upgrades for vulnerable and fuel poor households. A second grant scheme, the Better Energy Homes scheme, was launched in 2011 to replace two previous similar schemes, the Home Energy Savings Scheme and the Greener Homes Scheme. The programme provides small and medium grants (up to € 3,600) to support a wide range of EE interventions, including wall insulation, improvement in heating systems, heating and heating controls upgrades, the installation of solar heating. Starting in 2014, grant programs are complemented by a supplier obligation program, the Energy Efficiency Obligation Scheme (EEOS), resulting from the conversion of a previous voluntary agreement with selected utilities and other energy players.

Italy. EE-related measures mostly focus on building renovation, with limited support provided to the purchase of new buildings. A tax deduction mechanism supporting EE-related renovations was introduced in 2007. The mechanism allowed to deduct over a period of 10 years up to 55% of the total cost incurred by landlords (including VAT). In June 2013, tax deductibility was raised to 65%, subject to maximum value depending upon the nature of the intervention (from € 100,000 for the heating system to € 30,000 for heat pumps). This instrument is often used in conjunction with a similar tax deduction mechanism aimed at supporting building renovation is general. Introduced back in 1998, the scheme was repeatedly modified, with the tax deduction rate ranging from 36% to 50% depending upon the years. The purchase of new or existing EE buildings (A and A+ categories) is supported through a (mildly) subsidized lending scheme, the Plafond Casa. Initially launched in 2003, the scheme was revamped in 2013, but it is scarcely utilized.

Poland. In Poland, government programmes only target building renovation, and financing from national sources is supplemented with EU funds. The main support program is the Thermo-Modernization Fund, operational since 1999 and managed by the Bank Gospodarstwa Krajowego (BGK). In order to be eligible for financing, EE measures must achieve an energy saving ranging between 10% (for interventions on the heating systems) and 25% (for complex renovations). Funding is provided in the form of a subsidized loan, with a 25% grant element. Photovoltaic installations have been supported with subsidized loans, but the scheme was extended to micro-installations only in 2015. Finally, funding for EE initiatives is also provided in the framework of European Regional and Development Fund (ERDF) programmes, but during the period under consideration the focus was primarily on non-residential buildings.

Romania. Support measures only focus on building renovation. The main government scheme, known as 'Warmth and Comfort' program, focuses on the rehabilitation of apartment buildings erected between 1950 and 1990. Launched in 2006, the program was due to expire in 2015 but it was recently prolonged until 2020. Funded by the national budget, the program provides grants worth up to 80% of rehabilitation costs, subject to certain maximum permissible values per sqm. Starting in 2012, the 'warmth and comfort' program was supplemented by a similar scheme partly funded by the ERDF in the framework of the Regional Operational Program 2007 – 2013. The renovation of old apartment blocks is also extensively supported by the EIB, which since 2010 has approved a series of sizeable loans to four municipalities in the Bucharest area. Other measures include a small subsidized lending scheme supporting EE-renovation of houses completed before 2000 and the Casa Verde program, which provides small grants for the installation of RES (heat pumps, photovoltaic).

Spain. In Spain, support measures mostly concern building renovation, although there are also some measures focusing on new buildings. Renovation has been supported with grants provided under various schemes implemented since the early 2000s, such as the Plan de Ahorro y Eficiencia Energética (PAEE) and the

Programa de Ayudas para la Rehabilitación Energética de los Edificios Existentes (PAREER-CRECE). The subsidy has ranged between 20% and 35% of the EE-related expenditure, depending upon the nature of the interventions and/or the energy savings achieved (as attested by an improvement in EPC classification). The adoption of renewable energy solutions is also supported by some small subsidized lending schemes (e.g. Programa Biomcasa). In 2010, the government also introduced a tax rebate scheme (deducción por obras de mejora en la vivienda) allowing for the deduction of up to 20% of the expenditure incurred for EE-related renovations. However, the scheme was discontinued at the end of 2012. Finally, since 2010 EE-related renovations can benefit from a preferential VAT regime (initially at 7% and then raised to 10% compared with the 21% generally applicable rate) introduced to support renovation 'in general'. The construction of new EE buildings (A, B and C categories) was supported by the Plan Estatal de Vivienda y Rehabilitación 2009-2012, with the provision of small grants (between € 2,000 and € 3.500 per dwelling), with additional funding sometimes provided by regional authorities.

United Kingdom. In the UK, government measures are predominantly targeted at supporting building renovation, with new residential construction receiving only marginal support in special cases (namely, exemption from the stamp duty land tax for new housing meeting very high EE parameters). The nature of government programs changed significantly during the period covered by this Study. Until the early 2010s, support to EE-related renovation was provided through a combination of grant schemes (mostly targeted at low income households) and company obligation programs, requiring energy operators to implement measures to reduce energy consumption in households. Starting in 2013, these programs were replaced by two new flagship initiatives, the Green Deal program and the Energy Company Obligation (ECO), inspired to a more market oriented approach. The Green Deal was a lending scheme based on the 'pay-as-you-save' (PAYS) principle, intended to support a wide range of EE interventions, with focus on low cost measures. The scheme experienced a number of difficulties which severely limited its effectiveness and in 2014 the PAYS approach was abandoned, with a return to grant funding. As for ECO, it differs from previous company obligation programs insofar part of the cost of interventions is passed onto consumers through their energy bills. Aimed at supporting more complex EE-renovation measures, such as solid walls insulation and hard-to-treat cavity insulation, ECO also experienced problems in the initial stages of implementation. However, the take up improved overtime and the scheme was renewed until 2017.

Summing Up. Three main elements emerge from the analysis of government support schemes. ***First***, in line with developments in the regulatory framework, in virtually all countries support programs focus primarily (and often increasingly) on building renovation. Support to new buildings is still available in some countries, but typically on a much smaller scale and/or only in selected cases. ***Second***, the range of instruments deployed is extremely varied, reflecting national preferences and traditions. In some cases, the selection of instruments was influenced by considerations that have little to do with EE-related considerations. For instance, the use of reduced VAT schemes in Belgium, Spain and Italy was also (if not primarily) conceived to help combating the phenomenon of the 'grey economy', particularly widespread in the construction industry. ***Third***, there are significant differences across MS regarding the selectivity of government assistance. In some countries/regions (e.g. Germany and the Flanders), support schemes are increasingly geared towards the achievement of progressively higher EPB standards. In other countries, a significant share (sometimes the bulk) of support is provided through 'broad' schemes, that apply to a wide range of EE-related interventions, not necessarily entailing significant improvements in EE standards.

A.6.4 EE-related Market for New Buildings

A.6.4.1 Introduction

The EE-related market for new buildings is defined as the turnover accruing to construction firms as a result of the extra costs linked to the adoption of stricter EPB requirements that are 'passed onto' clients.

Estimating the EE-related market in the new buildings segment is a challenging task due to the presence of various concomitant factors. The two main variables to be considered are: (i) the increase in construction costs associated with the introduction of more stringent EE regulations; and the (ii) the extent to which construction firms are able to compensate higher costs with a corresponding increase in prices (the so called 'pass-on' factor). In turn, the 'pass on' factor is influenced by various factors, including: (a) the very magnitude of the

extra costs determined by more stringent EE regulations (as smaller increases are more easily transferred to clients); (b) general market developments, i.e. the general trend in real estate prices and volume of transactions; (c) presence and scale of government financing schemes aimed at supporting the purchase of more energy efficient buildings; and (d) house buyers' preferences, which may (or may not) result in the willingness to pay a premium for more energy efficient houses.

In practice, the first step in the analysis consists in estimating the increase in construction costs linked to the adoption of EE regulations. The cost increase is estimated with respect to the situation prevailing in 2004 (i.e. at the beginning of the period analyzed), which is regarded as the 'baseline'. As enterprises typically operate on a 'cost plus basis', the cost increase can also be regarded as indicative of the turnover linked to EE regulations. Therefore, as a second step, the cost increase, expressed in percentage terms, is multiplied by the value of the new buildings output, obtaining an initial estimate of the EE-related turnover. Since the 'extra cost' due to EE regulations and the new buildings output both vary overtime, this exercise is done for each year over the 2004 – 2014 period covered by the Study. The third step involves the estimation of the 'pass-on' factor, i.e. the extent to which the cost increase actually did translate into an increase in price. Finally, the 'pass on' factor is used to adjust the initial estimate, providing the final assessment of the EE market. An example illustrating the logic of the approach is provided in Box A.6.1 below.

Box A.6.1 Example

In year X a new EE regulation entered into effect, raising construction costs by 5% compared to the baseline. In that year, the new buildings output was € 100 billion, which prima facie suggests an EE-related turnover of € 5 billion. Year X was a bad year for the construction industry, with a major decline in the demand for new buildings. The situation was aggravated by the discontinuation of certain government programmes, due to budgetary difficulties. As a result, in order to remain competitive, construction companies had to reduce their margins by absorbing about 20% of the cost increase linked to EE regulations (i.e. the increase in the price charged to home buyers was only 4%, not 5%). Therefore, in year X the EE-related turnover can be estimated at € 4 billion.

The above approach incorporates a highly stylized version of the functioning of the new buildings market and this inevitably entails some limitations. For instance, the analysis is based on average values, which obviously does not do justice to extreme diversity of the new buildings market (e.g. detached family houses, semi-detached family houses, medium rise apartment buildings, high rise apartment buildings, etc.). Also, the approach is somewhat 'naïve' in the sense that it assumes that construction firms fully comply with the mandatory EPB requirements, whereas there is significant evidence that this is not always the case, especially in the years immediately following the entry into force of a new EE regulation.[193] Finally, the approach neglects the possibility that the EE-related costs may decline over time, due to some form of 'learning effect'.[194]

A.6.4.2 Country Analysis

Estimating the Extra Costs. The impact of more stringent EPB parameters on construction costs has been the subject of a number of studies. However, the overwhelming majority of these studies are of a prospective nature and involve the building of models aimed at assessing the 'cost optimality' of EE measures, i.e. whether the existing standards can be further strengthened in a cost effective manner. Studies comparing actual construction costs for new buildings 'with' and 'without' the EPB requirements implemented over the period covered by the Study are much scarcer. Whenever possible, information from secondary sources was validated and/or complemented with the evidence collected through interviews with stakeholders and firms. However,

[193] On the issue of compliance with minimum statutory requirements, see the recent European Commission, Energy Performance of Buildings Directive (EPBD) Compliance Study, December 2015 (especially section 3).

[194] It is worth noting that on the magnitude of the learning effect in EE technologies in building views are not unanimous. Some studies assume quite high learning factors, with cost reductions of up to 50% (although over periods of time typically longer than the period covered by this Study). The building construction professionals met so far offer a more nuanced view, suggesting the possibility of significant cost savings for certain components (heating systems, windows and doors), but not for classical construction work. For a fairly optimistic view, see Diana Urge-Vorsatz and others, Monetary Benefits of Ambitious Building Energy Policies. Research report prepared by ABUD for the Global Building Performance Network, January 2015. For a more reserved assessment, see the considerations provided in Giraudet Louis-Gaëtan and others, A model of the French residential demand for heating energy to evaluate the impact of policy instruments, CIRED, 2010.

it must be pointed out that in several cases the estimates of extra costs provided by operators showed a major range of variation and, more often than not, tended to diverge from those presented in studies. Whenever the reconciliation of the two sources of information was not possible, preference was given to data from studies. The sources and the parameters used for the analysis are presented in Exhibit A.6.1 below.

Exhibit A.6.1 Assessment of Extra Costs – Sources and Parameters

Countries	Sources of Information and Parameters Retained for the Analysis
Belgium	The extra costs were estimated primarily on the basis of engineering studies.[195] The estimates provided by the firms interviewed were much higher (with some interviewees reporting extra costs of up to 20%), and appear to be inconsistent with general market developments. A further element of complication in providing an estimate at the national level lies in the different pace of implementation of EPB requirements across regions, with the Flanders moving at a faster pace. The cost increases retained for the analysis are: (i) 2% between 2006 and 2009, (ii) 5% for the 2010 – 2012 period; and (ii) 6% for 2013-2014.
Denmark	The extra costs linked to EE regulations were estimated based on engineering studies and other publications[196] and validated with stakeholders and firms. The cost increases retained for the analysis are: (i) 2% for the 2005 – 2010 period (i.e. in connection with the 25% reduction in energy requirements compared with 1995 levels); and (ii) 8% for the 2011 – 2014 period (linked to a further 25% reduction compared with 2005).
France	Estimates of extra costs were based on engineering studies and other publications,[197] supplemented with information provided by the business associations and construction firms interviewed (whose assessment was less divergent than in other countries). The cost increases retained for the analysis are: (i) 3% over the 2006 – 2009 period (i.e. from the entry into force of the RT2005 until the introduction of additional measures at the end of the 2000s); (ii) 5% over the 2010 – 2012 period (i.e. until the entry into force of the RT2012), and (iii) 8% in the years 2013 – 2014, corresponding to the initial phase of the RT2012.
Germany	The extra costs were estimated based on two studies, one sponsored by business associations and the other commissioned by the government, that - while diverging in many respects - concurred in assessing the extra cost at 6% for the period up to 2014.[198] The firms interviewed typically provided much higher estimates (up to 35%), which were deemed unrealistic. For the purpose of the analysis, the 6% cost increase was subdivided into two steps, namely: (i) a 3% cost increase from 2004 up to 2009 (i.e. up to the approval of the EnEV2009); and (ii) another 3% cost increase for the following years.
Ireland	Estimates of the extra costs are based on the impact assessments for the revision of the Building Regulations.[199] The existence of an increase in construction costs was confirmed by government authorities and stakeholders, who however could not provide any estimate. The cost increases retained for the analysis are: (i) 4.5% from 2008 (when the 2005 Building Regulation revision became effective) until 2010; and (ii) 6% from 2011 onwards. These values refer to a semi-detached house, the most common dwelling type in Ireland.
Italy	The extra costs were estimated based on information provided by business associations and firms, eliminating the most extreme values. The cost increases used for the analysis are: (i) 1% over the 2006 – 2007 period; (ii) 2% for the biennium 2008 – 2009; (iii) 3% for the 2011-2012 period; and (iv) 4% since 2012 (when the renewable energy requirements introduced in 2011 started being implemented). The progressive cost increase reflects the gradual phasing in of the requirements set by the 2005 reform.

[195] See Janssens B and A Verbruggen, Feasibility of upgrading the energy performance of recent massive brick houses, Frontiers of Architectural Research, 2014; and Georges L and others, Environmental and economic performance of heating systems for energy-efficient dwellings: Case of passive and low-energy single-family houses, Energy Policy, 2012

[196] See Aggerholm S, Skærpede krav til nybyggeriet 2010 og fremover: Økonomisk analyse, Statens Byggeforskningsinstitut, 2009; and Thomsen K E and S Aggerholm, Denmark: Impact, compliance and control of legislation, ASIEPI, 31 December 2009.

[197] Ministère de l'Emploi, de la Cohésion sociale et du Logement, Règlementation Thermique 2005 - Réunion départementale d'information (undated) ; Enertech/ADEME, Bâtiments performants – Etude économique – Rapport Final, 2011; Ministère l'Écologie, de l'Énergie, du Développement durable et de la Mer, La réglementation thermique 2012 (undated); FFB, Analyse de l'évolution comparée des prix et des coûts dans le bâtiment - Préconisations en matière de simplifications règlementaires, Juillet 2013.

[198] See ARGE, Kostentreiber für den Wohnungsbau - Untersuchung und Betrachtung der wichtigsten Einflussfaktoren auf die Gestehungskosten und auf die aktuelle Kostenentwicklung von Wohnraum in Deutschland, April 2015; and Wissenschaftliche und technische Begleitung der Baukostensenkungskommission, im Rahmen des Forschungsprogramms „Zukunft Bau" des Bundesministeriums für Umwelt, Naturschutz, Bau und Reaktorsicherheit (BMUB) – Endbericht, November 2015.

[199] Department of the Environment, Heritage and Local Government, Regulatory Impact Assessment - Building Regulations Part L and Technical Guidance Document L, December 2007; and Department of the Environment, Community and Local Government, Regulatory Impact Analysis - Conservation of Fuel and Energy in New Dwellings - Proposed amendments to Building Regulations Part L and Technical Guidance Document L, 26 July 2010.

Poland	It is unclear whether the technical regulations adopted in 2008 resulted in any cost increase. Stakeholders and firms interviewed mentioned some increase in costs, but were unable to provide any quantification. For the purpose of the analysis a minimal extra cost of 1% was assumed starting in 2008. The effects of the technical regulation adopted in 2013 were not considered as the ensuing cost increase mostly materialized after 2014.
Romania	There are no studies on the extra cost and the information collected through interviews is conflicting, as some interviewees did not notice any cost increase while others mentioned a 15% increase. However, this latter figure is derived from the maximum permissible value for renovation works under the 'Warmth and Comfort' program, which is scarcely relevant for new buildings. Considering that until recently Romania's EPB requirements were not particularly stringent, a 3% cost increase was conservatively assumed, applicable to the 2011 – 2014 period (i.e. following the October 2010 revision of the C107 regulation).
Spain	Estimates are based on engineering studies for large apartment buildings[200] and were adjusted upward by about 50% to reflect higher unit costs in smaller buildings. The estimates provided by the firms interviewed were only partly taken into consideration, due to the wide range of variations and the presence of some clear outliers (up to 12% cost increase, which is scarcely credible considering general market developments). The extra costs used for the analysis are: (i) 3% for the 2007 – 2013 period (i.e. following the adoption of CITE in 2006); and (ii) 6% for the year 2014 (i.e. following the 2013 reform).
United Kingdom	Estimates of extra costs are based on the impact assessments for the Buildings Regulations revision,[201] adjusted upward based on information collected through interviews, but without considering the highest values (some suggested up to a 22% cost increase, which is clearly unrealistic). The extra costs considered for the analysis are: (i) 2% for the 2007 – 2010 period (i.e. following the 2005 Building Regulations revision); and (ii) 4% for the 2011 – 2014 period (reflecting the 2010 revision). The cost increase associated with the 2013 revision was not considered as it became effective during 2014 and its effects de facto materialized afterwards.

Estimating the 'Pass on' Factor. The information regarding the magnitude of the 'pass-on' factor can be summarized as follows:

- In ***Belgium, Denmark, France, Germany, Poland and Romania and the UK***, available evidence suggests that construction firms were generally able to incorporate the extra costs into prices, with a corresponding increase in turnover. After the real estate bubble of the mid – late 2000s, all the countries experienced periods of declining prices. However, this mostly resulted in a reduction in the 'real estate rent', and did not fundamentally alter the cost plus pricing mechanism used by construction firms. Also, in France and Germany, the demand for high quality buildings was actively supported by subsidized lending schemes, therefore reducing the downward pressure on prices. Moreover, there are indications that in West European countries home buyers' preferences progressively reoriented towards dwellings with higher EE standards, for which they are prepared to pay a premium.[202] Finally, in the case of Romania and Poland, the estimated extra costs linked to EPB requirements are quite modest, which per se facilitate their 'passing on' to home buyers.
- In contrast, in the case of ***Ireland, Spain and Italy***, there are indications that part of the extra costs linked to more stringent EPB requirements had to be absorbed by construction companies. In these countries the decline in construction activity was deeper and/or more prolonged, resulting in a stronger downward pressure on prices. These negative market developments were only marginally mitigated by government programs targeted at energy efficient new dwellings, that either did not exist (in Ireland), or were short-lived (Spain's Plan de Vivienda was operational only in 2010 - 2012) or proved to be scarcely effective

[200] See PRECOST&E, Evaluación de los costes constructivos y consumos energéticos derivados de la calificación energética de viviendas, Universidad Politécnica de Madrid, Diciembre 2009 ; and García-Navarro J and others, «Estudio Precost&e»: evaluación de los costes constructivos y consumos energéticos derivados de la calificación energética en un edificio de viviendas situado en Madrid, Informes de la Construcción, Julio-Septiembre 2014.

[201] Office of the Deputy Prime Minister, Regulatory Impact Assessment Part L and Approved Document F, 2006, March 2006; Department for Communities and Local Government, Implementation Stage Impact Assessment of Revisions to Parts F and L of the Building Regulations from 2010, March 2010;: and Department for Communities and Local Government, Changes to Part L of the Building Regulations 2013 - Impact Assessment, August 2013.

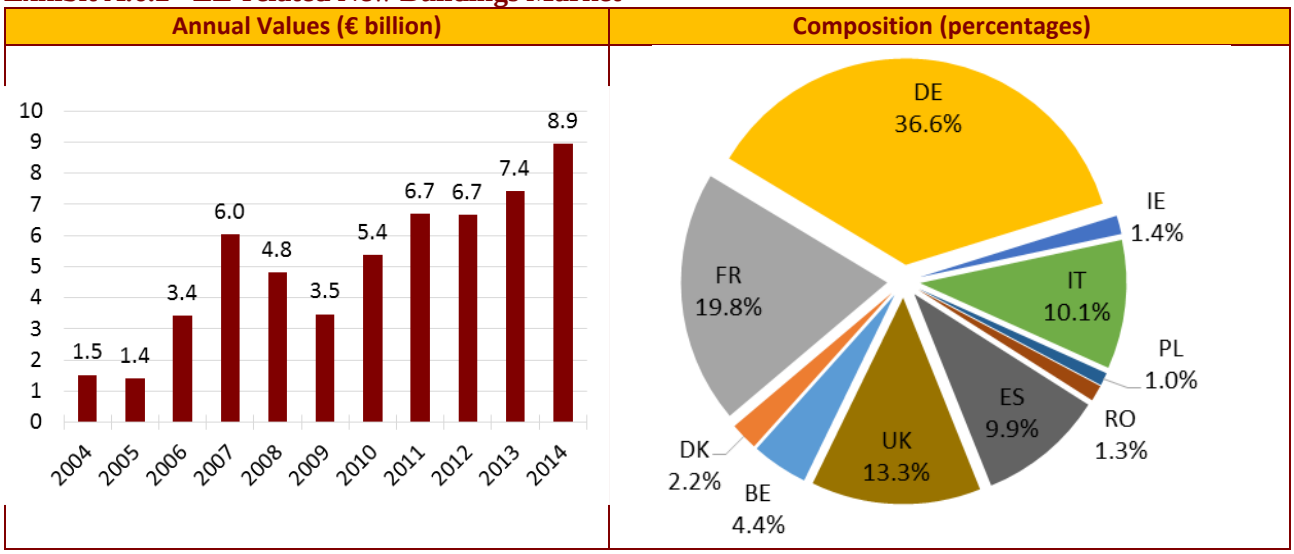
[202] See European Commission - DG Energy, Energy performance certificates in buildings and their impact on transaction prices and rents in selected EU countries – Final Report, 19 April 2013 (hereinafter 'Transaction Prices Study'). The study found a positive effect of higher EE standards on prices in Belgium and France, while results were negative for a local UK market (Oxford). However, other studies suggest the existence of a premium also in the UK. See Department of Energy and Climate Change, An investigation of the effect of EPC ratings on house prices, 17 June 2013.

(Italy's Plafond Casa). Finally, with the partial exception of Ireland,[203] there is scarce evidence of home buyers willing to pay a premium for better energy performance. Under these conditions, it appears plausible to assume that, starting in 2008 (in Ireland and Spain) and 2010 (in Italy), construction firms were able to recoup only three quarters of the EE-related extra costs.

A.6.4.3 Results

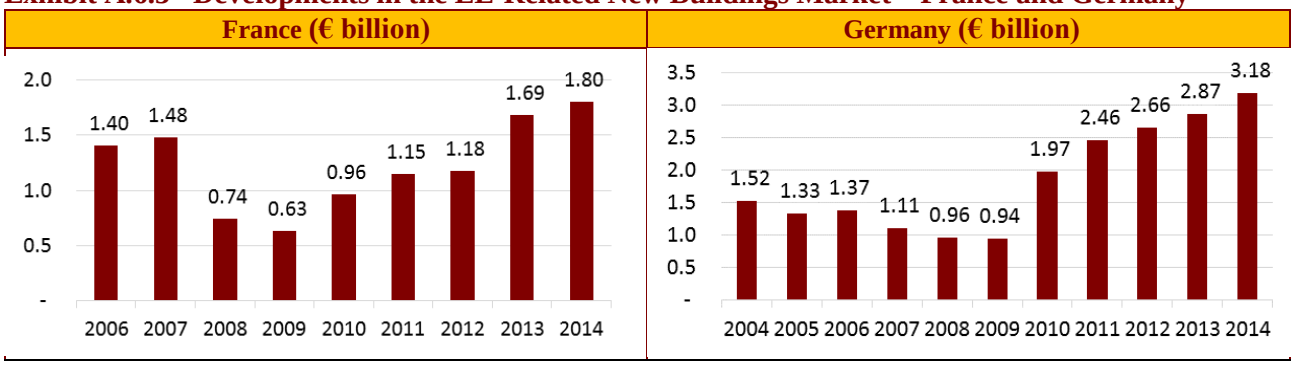
Over the 2004 – 2014 period, the total value of the EE-related market for new buildings is estimated at € 56 billion. This corresponds to about 3% of the total new residential buildings output over the same period. With more than € 20 billion, Germany accounts for more than one third of the total market, followed by France (€ 11 billion, i.e. about 20%) and the UK (€ 7 billion, i.e. 13%).

Exhibit A.6.2 EE-related New Buildings Market



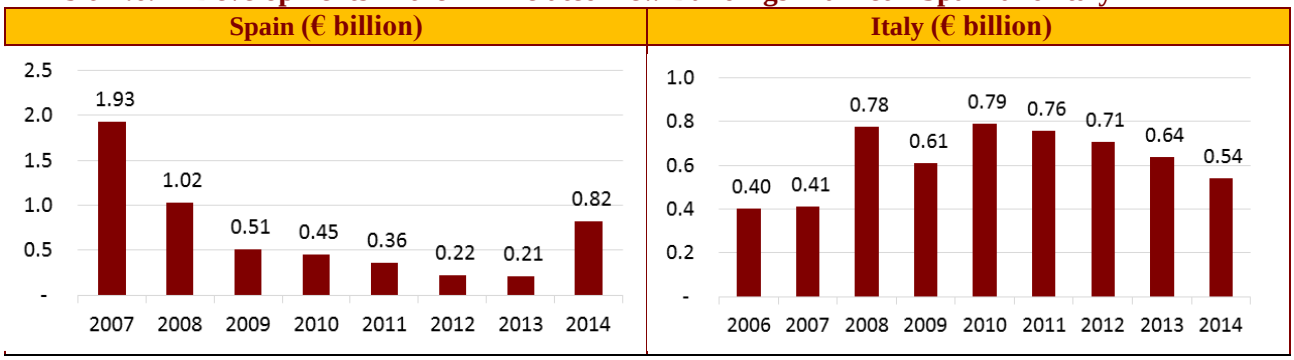
Overtime, the value of the EE market shows a contrasted trend, with a growth until 2007, followed by a decline at the end of the 2000s, and by a recovery since 2010. The trend is the result of the interplay of two factors: (i) the overall evolution in the new building market; and (ii) the tightening of energy efficiency requirements. For instance, in France and Germany, the tightening of EE requirements combined with a recovery in the new buildings market, resulted in an overall growth since 2011. In contrast, in Italy and Spain, the effect of the progressive tightening of EPB is more than compensated by the drastic decline in the overall market, resulting in a negative trend.

Exhibit A.6.3 Developments in the EE-Related New Buildings Market – France and Germany



[203] The Transaction Prices Study found a positive effects also in Ireland, but its magnitude was smaller than in other countries. This is confirmed by other studies, in particular Stanley S, R C Lyons and S Lyons, Price Effect of Building Energy Ratings in the Dublin Residential Market, Trinity Economics Papers - Working Paper No. 0415, June 2015.

Exhibit A.6.4 Developments in the EE-Related New Buildings Market – Spain and Italy



Box A.6.2 Important Caveat

The analysis presented in the preceding section is in line with the methodology discussed and agreed in the early stages of the Study. However, discussions with certain stakeholders and firms suggest the existence of a problem of perception, as the equation increased costs = increased turnover is not always immediately understood. In other cases, the analysis has been considered as scarcely relevant for enterprises, as an increase in turnover fully driven by costs, is not regarded as a 'new business opportunity'. In contrast, some interlocutors have focused their attention on the fact that some firms may not be in the position to fully recoup the extra costs linked to EE regulations, with ensuing losses. It is proposed that these aspects be discussed with the Client, so as to assess the appropriateness of keeping the current approach vs. the possibility of introducing modifications to accommodate the concerns voiced.

A.6.5 EE-related Market for Buildings Renovation

A.6.5.1 Introduction

The EE-related market for buildings renovations is defined as the value of the works and related goods and services utilized to upgrade the energy efficiency of dwellings.

There is little systematic information on the value of EE-related renovations and the analysis had to rely on a variety of sources. Comprehensive studies are available for only few countries and even in these cases there are at times discrepancies among the various sources. In most (though not all) the countries analysed the EE-related renovation activities are driven by government support programmes and, therefore, in certain cases the market was estimated based on data on the assistance provided. The information collected from stakeholders and firms was usually of limited use, as either they were not able to provide any quantification or the figures provided showed a wide range of variation, reflecting peculiar situations or distorted perceptions. Still, in few cases, information from interviews was the only one available forcing the Consultant to resort to fairly rough 'guess estimates'.

Two points are worth noting. First, irrespective of the sources, sometimes the EE-related market was estimated as a share of the total renovation market. In these cases, the total market value was computed by multiplying the estimated share by the total value of residential renovations taken from sector statistics. Second, the definitions of 'EE-related renovation' used by the various sources utilized sometimes differ. The main difference refers to expenditures for renewable energy sources, and in particular photovoltaic (PV) domestic installations, that are covered in some cases and excluded in others.

The sources of information utilized and the main findings for each of the ten MS analysed in detail are illustrated in the following paragraphs.

A.6.5.2 Country Analysis

Belgium. There are no studies on EE-related renovations in Belgium. Figures provided by construction firms invariably show a significant growth in the value of the EE renovation market (in some cases with a fivefold increase between 2009 and 2014), but coming from specialized operators, they overestimate the total market. The growth is confirmed by some real estate professionals, who grossly estimated the share of EE-related works accounted for some 15% of total renovation expenditures, up from about 10% in the late 2000s. Using these rough estimates and considering the total value of residential building renovations, the market for EE-related renovation was estimated at € 7.4 billion over the 2009 – 2014 period, with an annual average of € 1.2 billion.

Denmark. There are no comprehensive studies on the market for EE-related renovations in Denmark. The national construction industry association estimates that EE-related renovations accounted on average for 35% of the total renovation market over the 2006 – 2014 period.[204] This estimate was discussed with some construction firms who, despite somewhat diverging views (for some it was too high, for others too low), on 'average' concurred with the assessment of the association. Considering the total value of residential building renovations, the market for EE-related renovations can be estimated at some € 32 billion, with an annual average of almost € 3.4 billion.

France. In France, the market for EE-related renovation is monitored by the Agence de l'environnement et de la maîtrise de l'énergie (ADEME), through surveys carried out at regular intervals and special studies. According to the latest report published,[205] over the 2006 – 2014 period, the total value of EE-related renovations was € 116 billion, with an average of nearly € 13 billion per year. These figures cover insulation, replacement of boilers and windows, as well as expenditure for ventilation and heating control systems. The estimate does not include expenditure for PV home systems, for which no separate figure is available, and therefore underestimate the actual market value.

Germany. Information on the value of the EE-related renovation market was taken from the reports published annually by DIW, which cover the period since the year 2010.[206] Information on earlier years is provided in a study from a consulting firm.[207] However, these data are not comparable with those of DIW due to major differences in the definition of 'EE-related renovation' and therefore could not be considered for the analysis. Therefore, according to DIW data, regarded as the most reliable source by all the stakeholders interviewed, the total value of the EE market over the 2010 – 2014 period was nearly € 188 billion, with an annual average of almost € 38 billion.

Ireland. In Ireland, the main source of information on EE renovations is the Sustainable Energy Authority of Ireland (SEAI), which recently published a report covering developments since 2009.[208] Regarding the previous years, the value of EE renovations was estimated based on the funds disbursed by the government schemes operational at that time.[209] Overall, the total value of the EE-related market from 2006 through 2014 can be estimated at some € 1.5 billion, with an annual average of about € 170 million.

Italy. In Italy, developments in the building renovations market are monitored by the Parliament, to assess the influence of government support measures. According to the latest report published,[210] over the 2007 – 2014 period some € 25 billion were invested in EE-related renovations. However, this figure only refers to

[204] Dansk Byggeri, Byggeriets Energianalyse 2015, København, 2015.
[205] ADEME, Marchés et emplois liés à l'efficacité énergétique et aux énergies renouvelables: situation 2012-2013 et perspectives à court terme, November 2014. Data for 2014 are estimates. There are some discrepancies in the figures provided in different parts of the study. The figures presented here are from the tables presented on page 273.
[206] Gornig M and others, German construction industry: refurbishment lacks momentum, new residential construction gets second wind, DIW Economic Bulletin 49, 2015.
[207] Prognos, Ermittlung der Wachstumswirkungen der KfW-Programme zum Energieeffizienten Bauen und Sanieren, 8 March 2013.
[208] Ricardo-AEA, Ireland's Sustainable Energy Supply Chain Opportunity, June 2014.
[209] Estimate, based on: (i) the value of the Warmer Houses grants disbursed; and (ii) the double of the value of the grants provided under the Greener Houses scheme. Data on grant disbursements are from the SEAI annual reports for 2006 through 2008.
[210] Camera dei deputati, Il recupero e la riqualificazione energetica del patrimonio edilizio: una stima dell'impatto delle misure di incentivazione, 8 October 2015. The analysis of the building renovation market is carried out by CRESME

renovations benefitting from a scheme specifically targeted at EE-renovation and does not consider the effects of another scheme supporting 'general' building renovation. Once this aspect is taken into account, the EE renovation market is estimated to total € 48 billion for the 2007 – 2014 period, with an annual average of € 6 billion.

Poland. In Poland, building renovation is driven by government incentives. Based on data from the national development bank, a recent study provided an assessment of the value of the EE-related renovation market for the 2006 – 2013 period.[211] The study does not cover investments in renewable sources, but this appears to be a minor omission, as most the funding provided to RES was not in the residential sector. Overall, the total value of EE-related renovations over the 2006 – 2014 period is estimated at 5 billion, with annual average of € 500 million.

Romania. There are no studies on EE-related renovations in Romania and little useful information could be retrieved from interviews with stakeholders and firms. As in Poland, EE-renovation is primarily triggered by support programs and therefore, the value of the market was estimated based on disbursement data concerning the main assistance schemes ('Warmth and Comfort' program, ERDF co-financed program, and EIB lending program for building renovation in Bucharest).[212] Overall, the total value of the EE renovations for the 2009 – 2014 period was estimated at € 366 million, with an average of some € 60 million per year.

Spain. Little is known about the value of EE-related renovations in Spain. The theme is dealt with in several studies, which however only speculate about the future market potential, providing virtual no information on the past and current situation.[213] The figures provided by the construction firms and professionals interviewed show major variations (from nihil to more than 80%), reflecting the interviewees' peculiarities, and therefore cannot be generalized. Under these conditions, EE-renovations were 'guess estimated' to account for 10% of the total renovation market in the years 2007-2012, with an increase to 15% in 2013-2014. Accordingly, the total value of EE-related renovations can be estimated at some € 16 billion, with an average of € 2.4 billion per year.

United Kingdom. In the UK, information on EE renovations is scarce, and the data presented in the few studies and government documents available are outdated and/or refer only to some market segments.[214] Therefore, the market for the main EE interventions (various types of insulation, replacement of boilers, doors and windows) was estimated on the basis of the annual number of installations and the average prices per installation, with data originating from the Committee on Climate Change and the Energy Saving Trust.[215] Overall, the total value of the EE renovation market is estimated at € 39 billion over the 2008 – 2014 period, with an average of € 5.6 billion/year.

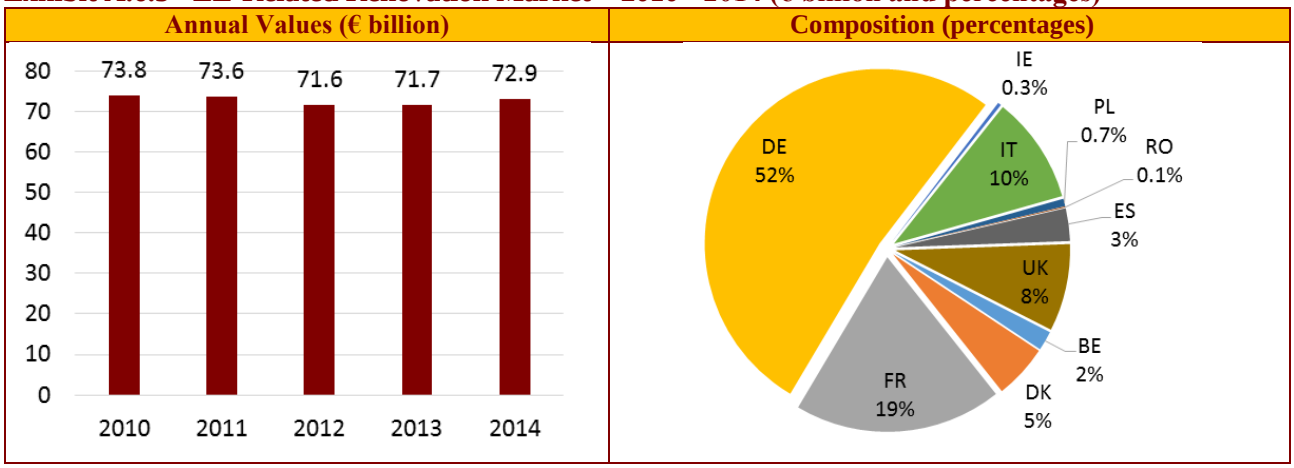
A.6.5.3 Results

Over the 2010 – 2014 sub-period, the only one for which data are available for all the ten MS, the total value of the EE-related renovation market is estimated at nearly € 364 billion. This accounts for about 23% of the total residential renovation market. With € 189 billion, Germany is by far the leading market, accounting for 52% of the total, followed by France (€ 70 billion, i.e. 19%) and Italy (€ 36 billion, i.e. 10%). Obviously, the ranking of countries largely reflects the total size of the market, but it is also influenced by the intensity of the

[211] BPIE, Financing Building Energy Performance Improvement in Poland – Status Report, January 2016.
[212] EIB, The EIB in Romania in 2014, undated (but 2015).
[213] See for instance, Asociación de Empresas de Eficiencia Energética, Estudio sobre el Mercado de la Eficiencia Energética en España (undated, but probably 2012); Grupo de Trabajo sobre Rehabilitación, Strategy for Buildings Renovation - Keys to Transform Spain's Buildings Sector, December 2013; and CEOE, La rehabilitación de edificios como motor de crecimiento y empleo, Septiembre 2014.
[214] See for instance, Energy Efficiency Partnership for Homes, An assessment of the size of the UK household energy efficiency market, November 2008.
[215] Data on installations for cavity wall insulation, solid wall insulation, loft/roof insulation and condensing boilers) were taken from Committee on Climate Change. Meeting Carbon Budgets – Progress in reducing the UK's emissions - 2015 Report to Parliament, June 2015. Average prices were calculated on the basis of information published by the Energy Saving Trust http://www.energysavingtrust.org.uk/. In the case of doors and windows, no data on installations could be located and the value of the market was estimated to average at £ 0.8 billion/year based on various press reports (e.g. http://www.olympicglass.co.uk/Information/News/976-/Rising-demand-for-conservatories-and-glazed-extensions-in-the-UK and http://www.windowsactive.com/domestic-replacement-market-returns-to-growth/).

EE renovation effort, with Denmark posting a value (€ 18 billion) that is more than 50% higher than that of Spain (€ 11 billion).

Exhibit A.6.5 EE-Related Renovation Market – 2010 - 2014 (€ billion and percentages)



Annual figures are in the € 74 – 72 billion range, with a marginally declining trend from 2010 through 2013, with a partial rebound in 2014. However, this is the result of widely divergent trends at the national level. Developments were globally negative in Germany, where the EE renovation market contracted from some € 40 billion in 2014 to less than € 35 billion in 2014. This appears to be due to a decline in the renewable energy segment, as the reduction of government incentives led to a major decline in the value of RES installations. The decline in Germany is partly compensated by an increase in Italy, where the market grew from about € 6 billion in 2010 – 2012 to nearly € 8 billion in 2014, largely in connection with the increase of tax deductions for EE interventions starting in mid-2013. In France, after the strong growth recorded in the late 2000s, over the 2010 – 2014 period the market increased only marginally, by some € 0.5 billion. Positive developments can be noticed also in Belgium and Denmark, but as the EE market was estimated as a fraction of the total renovation market, in these countries the trend is explained primarily by general market developments. The same applies to Spain, where the marginally declining trend until 2013 is due to a contraction in the general market, with a rebound in 2014. The UK constitutes a special case, as the globally positive trend started in the late 2000s, was interrupted in 2013 due to the problems encountered by the Green Deal programme, which led to drastic decline in the insulation segment (whose value passed from more than € 2 billion to € 0.5 billion, with only a partial recovery to € 1.2 billion in 2014).

Exhibit A.6.6 Developments in the EE-Related Renovation Market – France and Germany

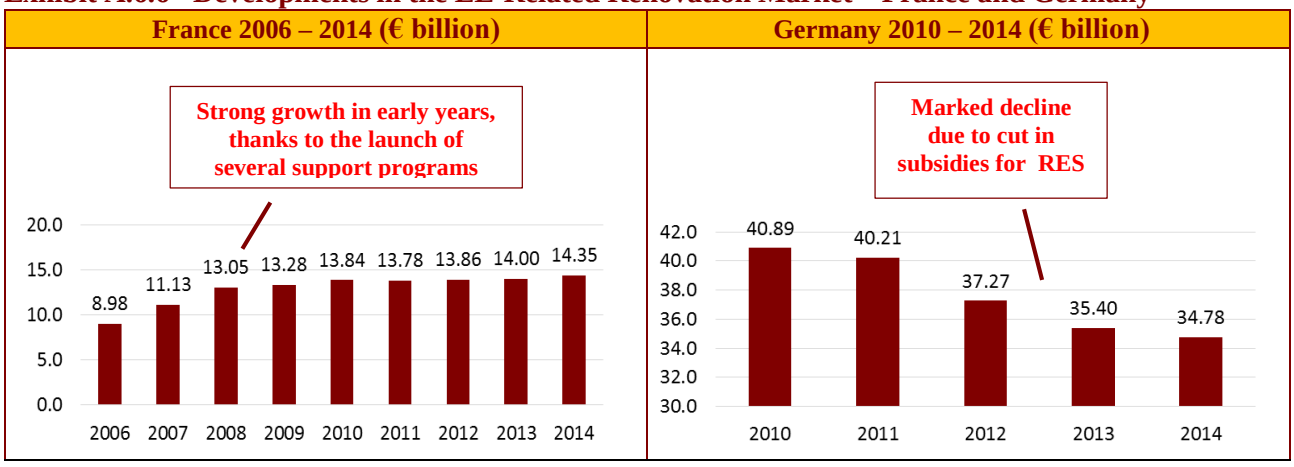
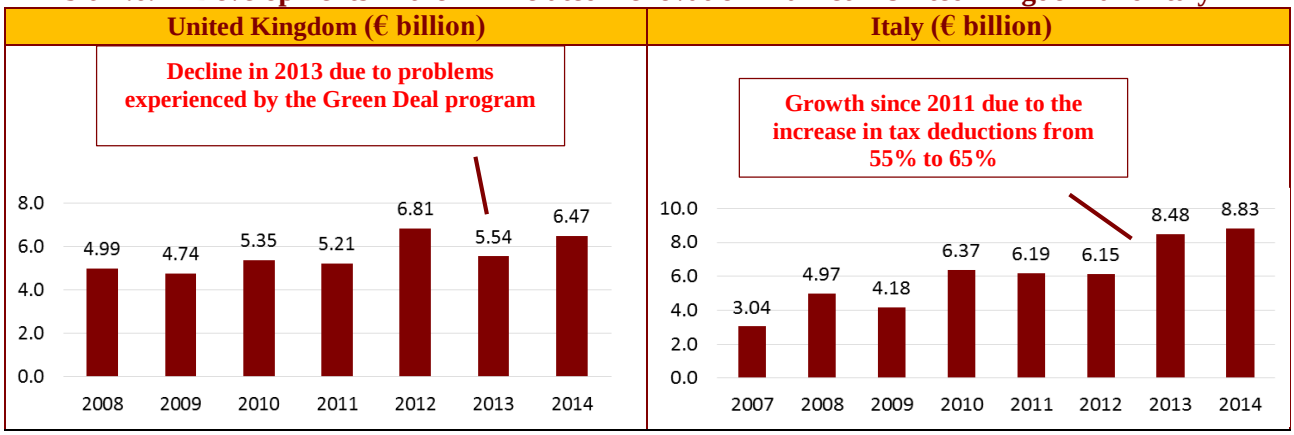


Exhibit A.6.7 Developments in the EE-Related Renovation Market – United Kingdom and Italy

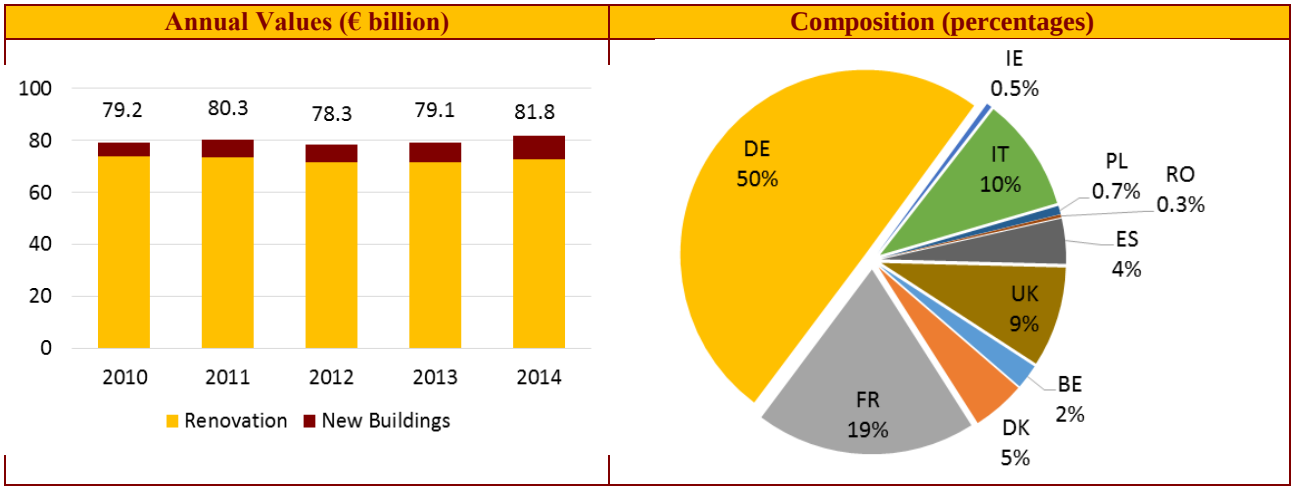


A.6.6 Overall Assessment

A.6.6.1 Cumulated Results

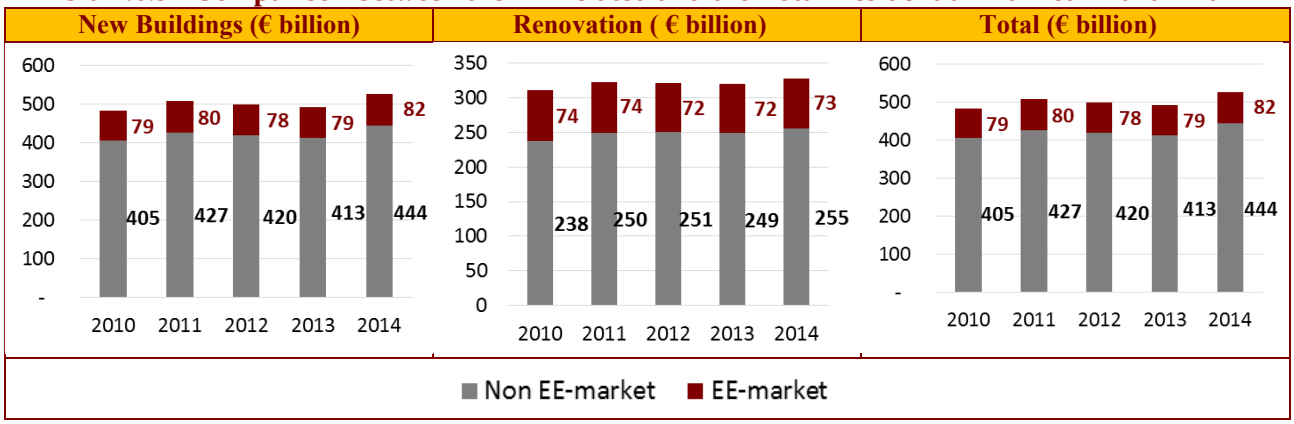
Based on the results presented in the preceding two sections, for the sub-period 2010 – 2014 for which there are comprehensive data, the total EE-related turnover for new and existing buildings is in the order of € 399 billion, of which about 91% (€ 364 billion) refer to renovation and € 35 billion (9%) to new buildings. Predictably, Germany is the country with the largest share, about 50% of the total, followed by France (19%) and by the UK and Italy almost at par, with respectively 10% and 9% of the total. The trend is somewhat oscillating, with annual values ranging between € 78 billion and € 82 billion per year. While renovation is always by far the largest segment, the share of turnover in the new buildings segment shows a clear upward trend, passing from some 7% in 2010 to about 11% in 2014. This result, however, is heavily influenced by developments in Germany which is one of the two only countries (the other being Spain) to record a decline in the value of EE-related renovations.

Exhibit A.6.8 Total EE-related Market – 2010 – 2014



In relative terms, over the 2010 – 2014 period, the EE-related market accounts for about 16% of the total residential buildings market, a share that remained stable overtime. EE-related business is comparatively more important in renovation, where it accounts for about 23% of the total, again with little variation overtime. Instead, the share of EE-related business in new buildings, while minimal, is on the rise, passing from 3% in 2010 to 5% in 2014.

Exhibit A.6.9 Comparison between the EE-related and the Total Residential Market – 2010 – 2014



A.6.6.2 Attribution Analysis

Introduction. The relative importance of EU legislation in generating the EE-related market cannot be neatly determined. The nature of the obligations imposed by the EPBD (and, whenever relevant, the EED and the RESD) upon MS is such that national authorities have a great degree of latitude. In particular, the progressive tightening of EPB requirements is indeed a requirement (albeit implicit, via the cost optimality mechanism) of EU legislation. However, EU legislation does not set any specific performance standards to be fulfilled by the building sector (e.g. in terms of total energy requirements or transmittance parameters for, say, windows) and this prevents the establishment of an 'EU benchmark' (and the estimation of the associated EE market) against which the performance standards actually adopted at national level (and the associated markets) could be compared. Similar considerations apply to the deployment of financial support measures. The establishment of these measures is indeed contemplated by relevant EU legislation. However, national authorities retain fully autonomy in determining the nature, scale and intensity of these support measures and this prevents, again, the setting of any 'EU benchmark' against which the situation in the various MS could be assessed.

Under these conditions, the assessment of attribution becomes an eminently qualitative exercise, involving the consideration of the various factors at play, in order to achieve an assessment of the relative importance of EU legislation relative to national legislation and policy. As the quantification of the effects of EU legislation is at the core of this Study, the qualitative exercise was structured so as to provide a ranking of the influence of EU legislation, with the successive transformation of the ranking into a quantitative assessment. In operational terms, the assessment was based on a five-level scale, ranging from 'very low' to 'very high', with a percentage value attached to each level of the scale. In turn, such a percentage is used to measure the estimated contribution of EU legislation to a certain market (new buildings or renovation) in a certain MS over the 2004 – 2014 period (Exhibit A.6.10). As in any other similar exercise, involving not only a precise rating of complex phenomena but also the transformation of ratings into quantitative results, the analysis is inevitably exposed to the risk of subjectivity.

Exhibit A.6.10 Rating for Attribution Analysis

Rating	Meaning	Corresponding share of relevant market
Very Low	EU legislation exerted a ***marginal influence*** on the factors driving the market developments compared with national legislation and policy	10%
Low	EU legislation exerted a ***limited influence*** on the factors driving the market developments compared with national legislation and policy	30%
Medium	EU legislation exerted a ***medium influence*** on the factors driving the market developments compared with national legislation and policy	50%
High	EU legislation exerted an ***important influence*** on the factors driving the market developments compared with national legislation and policy	70%
Very High	EU legislation exerted a ***crucial influence*** on the factors driving the market developments compared with national legislation and policy	90%

Rating Exercise. The rating exercise took into considerations various aspects that allow to gauge the possible contribution of EU legislation relative to national legislation and policy, namely:

- The influence exerted by EU legislation on the setting and/or tightening of EPB requirements, on the basis of the temporal and logical sequence of events (e.g. was a certain requirement set before or after the adoption of the EPBD?)
- The influence exerted by EU legislation in directing the attention of national authorities towards the theme of EE-renovation, again looking at the temporal and logical sequence of events (e.g. did country X adopted or tightened specific requirements for renovations in connection with transposition?);
- The extent to which the EE market is influenced by support programmes involving a significant mobilization of government resources (i.e. supported with national taxpayers' money);
- The timing and the salient features of these support programmes (e.g. when were the support programmes conceived and deployed? To what extent they pursue objectives other than EE in building, such as supporting the construction industry in general or combating the grey economy in construction?);
- The presence and scale of EU-funded support programs (such as ERDF-funded programsme, EIB lending schemes, etc.).

The results of the exercise are summarized in Exhibit A.6.11 below, which for each country provides separate ratings for the new buildings and the renovation markets as well as a summary justification of the ratings.

Exhibit A.6.11 Results of the Rating Exercise

Countries	Ratings		Comments
	New Buildings	Renovations	
Belgium	Low	Low	Limited influence of EPBD in Flanders, where works for the strengthening of EPB had started in the late 1990s (but no plans for ventilation). Greater influence in Wallonia and Brussels region. EPBD contributed to focus attention on EE renovation, but the most widespread support measure (VAT rebate) was conceived back in 2000 and without any connection with EE objectives
Denmark	Very Low	Very Low	Long history of strict EPB requirements. Early focus on building renovation, with strict rules well beyond what envisaged in EU legislation (e.g. mandatory implementation of measures with short payback period).
France	Low	Low	Regulations adopted in parallel with EPBD transposition, but preparatory works started well before (e.g. preparation of RT2012 began immediately after adoption of RT2005) as a result of domestic policy debate (Grenelle I and II). EPBD contributed to focus attention on EE renovation, but the market is highly dependent upon substantial budgetary allocations and some instruments are the evolution of pre-existing schemes (Prêt à taux zero and Eco-prêt à taux zero)
Germany	Low	Low	Limited influence of EU legislation on EPB requirements: the two key regulations in force during the period considered (EnEV2002 and EnEV2009) both pre date EPBD transposition (and minimum requirement for RES pore dates RESD). Requirements for EE renovations already present in EnEV2002. KfW programmes launched well before adoption of EU legislation and massive deployment of national funds.
Ireland	Medium	Low	Partial influence of EU legislation on the tightening of EPB requirements (building code revision of 2007 linked to Kyoto, and EPBD 2002 scarcely mentioned in the impact assessment, whereas EPBD Recast plays a greater role in subsequent building code revisions). EU legislation contributed to focus attention on EE renovation, but some provisions were already in the code. Publicly funded renovation programmes, also with social orientation.
Italy	High	Low	EPBD played an important role in modernizing EPB requirements that had remained largely unchanged since 1993, and the same applies to RESD regarding renewables. EU legislation also contributed to focus attention on EE renovation but the market is largely driven by public schemes, including one that has been in force since the 1990s.

Poland	High	Medium	EU legislation played an important role in strengthening EPD requirements, but the 2008 reform triggered by EPBD transposition was only partly successful. First measures to support EE renovation go back to the 1990s, pre dating EPBD. Limited amount of EU funding (ERDF financing mostly for RES in non-residential and slow disbursement of EIB loans).
Romania	Very High	Very High	EPBD played a major role in strengthening of energy requirements, including the renovation of existing buildings. EIB funding contributed to a significant increase in the volume of renovation works
Spain	High	Medium	EPBD played an important role in the adoption of the 2006 code, with tighter standards and introduction for the first time of provisions for EE renovations. Some support measures also linked to EPBD (PAEE) although the market is also influenced by other measures aimed at supporting construction activity in general.
United Kingdom	Low	Low	Limited influence of EU legislation with the setting of reduction targets clearly influenced by domestic policy (and political) debate (Energy White Paper 2003, 2014 decision to lower level of ambition). The EE renovation market is mostly influenced by energy commitment schemes that were introduced already in the mid-1990s.

Results – The Market Attributable to EU Legislation. The share of the EE-related market attributable to the EU legislation was computed using the percentages associated to each rating. Overall, making again reference to the 2010 – 2014 period, the EE-related market attributable to EU legislation (the 'EU value') is assessed at nearly € 137 billion, of which € 123 billion for the renovation segment and € 14 billion for the new buildings segment. Comparing these values with those presented in Section A.6.6.2 above, EU legislation can be attributed considered to have contributed to 34% of the total EE market, with little differences between the two segments (41% for the new buildings segment and 34% for renovations). When considering the overall residential market in the ten countries, EU legislation can be attributed some 5% of the total market, with a higher incidence in the renovation segment (almost 8%) and a marginal contribution to the new buildings segment (less than 2%).

Exhibit A.6.12 Estimated Contribution of EU Legislation – 2010 – 2014 (€ billion and percentages)

	EU Value	Value Attributable to National Policy and Other Factors	EU Value as a Share of the EE Market	EU Value as a Share of the Total Market
New Buildings Market	14.1	20.9	40.5%	1.6%
Renovation Market	122.8	240.8	33.8%	7.6%
Total Market	136.9	261.7	34.4%	5.5%

A.7 BUSINESS OPPORTUNITIES AND COSTS OF THE ENERGY PERFORMANCE CERTIFICATES

A.7.1 Introduction

This section discusses three of the cost and benefits items generated by the EPBD:[216]

1. Administrative costs linked to the obligation to obtain and display Energy Performance Certificates (EPC) of buildings (articles 11-13);
2. Substantive compliance costs to become a qualified or accredited expert for building certification (article 17);
3. New business opportunities linked to issuance of energy performance certificates (articles 11-16).

The analysis relies on the methodology for the estimation of effects presented in the Inception Report.[217] As it will become evident below, construction companies, manufacturers, installers and professionals other than energy auditors are only lightly concerned by the EPC; the main effects of EPBD on these operators pass through energy efficiency requirements and support measures.[218] For this reason, information on EPC could hardly be retrieved through interviews with firms, and this section relies on the following sources:

1. Primary information obtained through ***interviews with trade associations, public authorities and other stakeholders***;
2. ***Secondary sources***, including the Evaluation of the EPBD,[219] the Open Public Consultation on the EPBD,[220] the Concerted Action on EPBD (CA EPBD) and its publications,[221] the project ZEBRA2020,[222] the BPIE study on national approaches to EPC,[223] country specific databases, and market surveys.

In line with the scope of the Study, the evaluation of these items is done from the point of view of the construction sector, including in particular construction companies and professionals involved in the certification of building energy performance. Such a scope has two main implications: (i) costs and benefits falling on other subjects, such as building owners, tenants, or public authorities are not considered in the quantification; (ii) substantive issues linked to the working of the EPC framework, such as its quality and effectiveness, are not covered systematically, but only in relation to their effect on construction value chain operators.[224]

The section is structured as follows:

- Section A.7.2 presents in broad terms the legal framework whose effects are going to be assessed and quantified;
- Section A.7.3 quantifies the administrative costs linked to the obligation to display energy performance certificates of buildings
- Section A.7.4 assesses the substantive compliance costs to become a qualified or accredited expert for building certification;
- Section A.7.5 quantifies the new business opportunities linked to issuance of energy performance certificates.

[216] Cf. Section A.1 above for the full list of regulatory effects.
[217] Cf. Inception Report (Revised), 19 October 2015, at Section 4, in particular the sub-sections on substantive and administrative costs.
[218] See Section A.6 above
[219] Ecofys (2015), Ex-post evaluation of the application of Directive 2010/31/EU, Final report for DG ENER. Hereinafter, EPBD Evaluation.
[220] Ecofys (2015), Public Consultation on the Evaluation of Directive 2010/31/EU, Final synthesis report for DG ENER. Hereinafter, 'Open Public Consultation'.
[221] Available at: http://www.epbd-ca.eu/ (last accessed on March, 2016).
[222] Available at: http://zebra2020.eu/ (last accessed on March, 2016).
[223] BPIE (2014), Energy Performance Certificates Across the EU, A Mapping of National Approaches, hereinafter 'BPIE Study'
[224] For further information on these aspects, the ex post evaluation of the EBPD has been recently published. Cf. EPBD Evalaution and BPIE Study.

A.7.2 The legal framework

The EPC was introduced by the EPBD 2002. In certain countries or regions, such as the Netherlands, Denmark Germany, and certain parts of Austria, certificates on the energy performance of buildings had already been introduced before, though with a different format and different requirements.[225] The EPBD 2002 required that, when buildings or buildings units are constructed sold or rented out, an energy performance certificate is made available to the owner or by the owner to the prospective buyer or tenant.[226]. Issuance and of EPC was also made mandatory for frequently visited buildings larger than 1000 m2 occupied by public authorities.

Such a provision was then amended by EPBD 2010, by adding the following elements:

1. In case of rent or sale of buildings, including newly constructed ones, the energy performance indicator is to be displayed together with the advertisement;
2. The EPC shall include technically-feasible recommendations for the cost-optimal or cost-effective improvement of the energy performance of the building unless there is no reasonable potential for such improvement compared to the energy performance requirements in force;
3. The threshold for EPC display in frequently-visited public buildings was progressively lowered to 500 m^2 and then 250 m^2.[227]

Concerning professionals issuing the EPC, the EPBD 2002 mandated that the certification of buildings should be carried out 'in an independent manner by qualified and/or accredited experts'.[228] The EPBD 2010 confirms this provision and requires that Member States make available a list of qualified and/or accredited experts providing building certification services.[229] Modalities for accreditation or certification, including minimum requirements, trainings and life-long learning have been defined at national or regional level.

A.7.3 Administrative costs linked to the obligation to display energy performance certificates of buildings

The costs for issuing and displaying the EPC can fall upon different subjects:

1) Owners, for existing buildings or building units put for sale or rent;
2) Project developers for new construction buildings;
3) Real estate agents (at least for the duty to display and supply the EPC) involved in the sale or rent of buildings or building units;
4) Construction companies, when they operate as both constructors and sellers of new buildings.

According to the scope of this Assignment, administrative costs falling upon construction companies are calculated here below. As such, only part of the EPC issued for new buildings are relevant, excluding those issued for rent, sale of existing buildings, or for frequently-visited public buildings.

To estimate these costs, the following parameters are needed:

1. Average price of EPC per country;
2. Number of EPC per country issued for new buildings;
3. Share of buildings sold directly by construction companies.

To a large extent, EPC prices are set on a market basis, and they depend on the size of the building as well as on whether it is a new or existing one.[230] Official regulation of the EPC price is in force only in 4 MS (Croatia, Denmark, Hungary, and Slovenia). In Exhibit A.7.1 here below, the range of prices for the 10 MS in scope of the study are presented, based on experts' estimation.[231]

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[225] Cf. BPIE Study and CA EPBD.
[226] Art. 7 EPBD 2002.
[227] Art. 11-13 EPBD 2010.
[228] Art. 10 EPBD2002.
[229] Art. 17 EPBD2010.
[230] In general, EPC for new buildings are more expensive than for existing ones. Prices reported in Exhibit A.7.1 refer to average prices. Cf. Santos P. and K. B. Wittchen (2011), The price of energy performance certificates, CA EPBD.
[231] Cf. BPIE Study. Country-specific sources are used where available: for BE (Flanders), VEA (2014), Evaluatie van de energieprestatiecertificatieregelgeving; for BE (Wallonia), Record Bank (2013), Le Certificat PEB À La Loupe, available at: https://blog.recordbank.be/fr/article/le-certificat-peb-%C3%A0-la-loupe (last accessed on March 2016); for FR, ADENE (2015), Le

Exhibit A.7.1. Average EPC prices

MS	Range
BE	Belgium €100 – 500 Wallonia : €200 – 450 Flanders: - apartment (if plans are available): € 120.79 - apartment (if plans are not available): € 138.24 - single-family house (if plans are available): € 158.30 - single-family house (if plans are not available): € 221.47
DE	€ 200 – 500
DK	€ 730 – 875
ES	€ 150 (apartments and small buildings) € 1200 (large: ~1000 m^2)
FR	€ 100 – 250
IE	€ 99 – 300. Average value for semi-detached houses: € 165 Average value for apartments: € 156
IT	€ 50 – 450. Average value: € 120
PL	€ 15 – 120
RO	€ 50 – 150
UK	€ 50 – 90

Source: BPIE and national surveys

To estimate the number of new buildings, the number of completed houses the period 2010-2014 is retrieved from Euroconstruct (data are not available for Romania) and are shown in Exhibit A.7.2 here below.[232]

Exhibit A.7.2. Number of new houses 2010 - 2014 ('000)

MS		2010	2011	2012	2013	2014
BE	*Family Dwellings*	21	22.3	20.1	20.6	20.8
	Flats	23	24.2	22.3	23.8	26.3
	Total	**44**	**46.5**	**42.4**	**44.4**	**47.1**
DK	*Family Dwellings*	7.2	8.2	6.8	6.6	6.4
	Flats	4.7	4.3	9.9	8.5	7.2
	Total	**11.9**	**12.5**	**16.7**	**15.1**	**13.6**
DE	*Family Dwellings*	85.4	97	100.3	102.2	106.8
	Flats	54.7	64.2	76.3	86.2	109.3
	Total	**140.1**	**161.2**	**176.6**	**188.4**	**216.1**
ES	*Family Dwellings*	48	34	25	16	12.5
	Flats	192.9	123.4	90	48.8	34.3
	Total	**240.9**	**157.4**	**115**	**64.8**	**46.8**
FR	*Family Dwellings*	170	182	207.3	203.1	179.6
	Flats	146	154	206.9	231.8	232.4
	Total	**316**	**336**	**414.2**	**434.9**	**412**
IE	*Family Dwellings*	8.6	5.2	6	5.9	7
	Flats	2.1	1.3	0.8	0.7	1.8
	Total	**10.7**	**6.5**	**6.8**	**6.6**	**8.8**
IT	*Family Dwellings*	36.5	32.1	32.4	32.4	31.4
	Flats	164.6	126.7	101.5	86.3	72.2
	Total	**201.1**	**158.8**	**133.9**	**118.7**	**103.6**

Diagnostic de Performance Énergétique, available at: http://www.ademe.fr/sites/default/files/_assets/documents/guide-pratique-diagnostic-performance-energetique.pdf (last accessed on March 2016); for IE, Competition and Consumer Protection Commission (2013), Do you need a Building Energy Rating (BER) Certificate?, available at http://www.consumerhelp.ie/index.jsp?a=1005&n=475&p=121 (last accessed on March 2016); for IT, ProntoPro (2016), Certificazione Energetica: in Italia la spesa media è 120€, available at http://press.prontopro.it/index.php/2016/ (last accessed on March 2016).

[232] Data on how many EPC refer to new or existing buildings are available for some countries. However, as shown in A.7.3 below, data gaps exist both concerning the MS covered in this study and the years in scope of the analysis. For this reason, Euroconstruct series on the number of completed houses is used.

PL	*Family Dwellings*	70.4	73.1	81.1	81.2	76.6
	Flats	65.4	58	71.8	63.9	66.8
	Total	**135.8**	**131.1**	**152.9**	**145.1**	**143.4**
UK	*Family Dwellings*	71.7	87.1	88	87.3	99.7
	Flats	57.8	47.1	47.9	42.7	40.6
	Total	129.5	134.2	135.9	130	140.3

Source: CRESME Elaboration on Euroconstruct Data

As discussed above, relevant costs are only those borne by construction companies, i.e. they refer to the case in which a constructor is also operating as developer and trader. Such operating modality is far from being the dominant modality in the real estate market: though it is more diffused in Southern countries, it represents a small share of total new buildings at EU level. Though data on the share of houses both built and sold by construction companies are not available, the following estimates are provided, based on evidences from stakeholders:

1) 30% of the new construction market for Italy;
2) 25% of the new construction market for Spain;
3) 20% of the new construction market for France;
4) 5% of the new construction market for all other MS.

Based on these assumptions administrative costs are calculated by multiplying the average prices,[233] the number of new completed houses, and the share of houses both built and sold by construction companies. As for the BAU factor, it is assumed to be 0%, meaning that construction companies would not adopt such a certification without a mandatory requirement. Hence, administrative costs and burdens coincide and are shown in Exhibit A.7.3 below.

Exhibit A.7.3. EPC administrative burdens for construction companies 2010 – 2014 ('000)

MS	2010	2011	2012	2013	2014
BE	€ 354	€ 374	€ 342	€ 359	€ 384
DK	€ 477	€ 502	€ 670	€ 606	€ 546
DE	€ 1,821	€ 2,096	€ 2,296	€ 2,449	€ 2,809
ES	€ 9,034	€ 5,903	€ 4,313	€ 2,430	€ 1,755
FR	€ 11,060	€ 11,760	€ 14,497	€ 15,222	€ 14,420
IE	€ 88	€ 54	€ 56	€ 54	€ 73
IT	€ 7,240	€ 5,717	€ 4,820	€ 4,273	€ 3,730
PL	€ 458	€ 442	€ 516	€ 490	€ 484
UK	€ 453	€ 470	€ 476	€ 455	€ 491
Total	**€ 30,986**	**€ 27,316**	**€ 27,985**	**€ 26,338**	**€ 24,692**

To finalise the quantification, the share of costs attributable to the EU level needs to be estimated. Out of the 10 MS covered in-depth by this Study, 8 of them have introduced mandatory energy performance certification for buildings only after the EPBD 2002. For them, the share of costs of EU origin is considered at 100%. In Denmark and Germany, some form of energy certifications had already been introduced before; for these MS, the share of EU costs is estimated at 50%, as the EPBD 2002 and then 2010 still had an impact on the coverage of the obligation, and the format and content of the certification. Administrative burdens of EU origin are shown in Exhibit A.7.4 below. Across the five years for which data are available, total administrative burdens of EU origins amounted to €20 to €30 million per year.

[233] Different prices for dwellings and apartment are used where available, i.e. for Belgium and Ireland; where price ranges are provided, the median point is used; for Belgium, Flemish median prices for apartments and dwellings are used. It is assumed that prices for certification of flat remains the same regardless of the number of units within the same building. Though, for large group of dwellings (e.g. residential complex) built by the same company, the price of the EPC may be lower due to high and to replicability of input data.

Exhibit A.7.4. EPC administrative burdens of EU origin for construction companies 2010 – 2014 ('000)

MS	2010	2011	2012	2013	2014
BE	€ 354	€ 374	€ 342	€ 359	€ 384
DK	€ 239	€ 251	€ 335	€ 303	€ 273
DE	€ 911	€ 1,048	€ 1,148	€ 1,225	€ 1,405
ES	€ 9,034	€ 5,903	€ 4,313	€ 2,430	€ 1,755
FR	€ 11,060	€ 11,760	€ 14,497	€ 15,222	€ 14,420
IE	€ 88	€ 54	€ 56	€ 54	€ 73
IT	€ 7,240	€ 5,717	€ 4,820	€ 4,273	€ 3,730
PL	€ 458	€ 442	€ 516	€ 490	€ 484
UK	€ 453	€ 470	€ 476	€ 455	€ 491
Total	**€ 29,837**	**€ 26,018**	**€ 26,503**	**€ 24,811**	**€ 23,014**

A.7.4 Substantive compliance costs to become a qualified or accredited expert for building certification

Here below, the substantive compliance costs linked to becoming a qualified or accredited expert for building energy performance certification are discussed. All these costs fall upon construction professionals, namely on those undertaking such activity. The following items are discussed:

1. Modalities for getting certification or accreditation in the 10 MS in scope of this assignment;
2. Population, i.e. number of professionals accredited or certified in the 10 MS;
3. Price, i.e. cost for accreditation or certification.

Exhibit A.7.5 below shows the minimum requirements for qualified and/or accredited experts in the 10 MS in scope of this assignment. The main and most immediate message is that accreditation and certification modalities vary widely across MS, and at country level it often depends also on the types of buildings to be accredited for and the professional background of the expert, as expected given the lack of binding provisions in the EPBD on this issue. More in detail;

1. As for minimum education requirements, they are not provided for in Denmark and the UK, where the system is competence based. Engineering degree is required in Spain, Romania, as well as in Belgium (only for non-residential buildings). Higher education is required in Poland (except for certified specialists) and France (only for non-residential buildings). Italy, Germany and Ireland require technical education (or equivalent training in the case of Belgium). This choice determines the remaining part of the accreditation and certification system: where there is no education requirement, certification and accreditation procedures are likely to be more demanding; where the education requirement is very strict (e.g. engineering degree), the certification and accreditation procedures are likely to be less demanding. Furthermore, in some countries (e.g. Germany, Italy), the higher the educational background, the less demanding the accreditation or certification procedure.[234]
2. With respect to professional experience, it is required in Denmark, France and Romania; in Germany and Belgium, it is necessary when the professional does not have a higher degree,
3. Training is mandatory in all countries, except from Spain and Poland, indeed two countries where an engineering or higher education degree is mandatory. In certain MS, it is mandatory only in case the professional does not have a higher education degree or other certifications, or for some categories of certifiers;
4. To obtain the accreditation or certification, exams are required in all countries, except, again, for Spain. Engineers or certain categories of accredited professionals are exempted in Germany, the UK, and in certain Italian regions;
5. Accreditation may be required or not, and the approach is very much MS specific: it may not be required at all, it may be granted based on exam results, on qualification, or on external certification (e.g. in Denmark and the United Kingdom);
6. With regards to renewal of the accreditation or certification, this is not required in Belgium (Brussels Region), Germany, Spain, Italy and Poland. Renewal is paper-based in Romania and Belgium (Flemish and Walloon Regions). In Ireland, renewal is linked to a bi-annual exam; in Denmark, France and the UK, renewal is linked to mandatory re-training, with a frequency varying from every 3 to every 10 years;

[234] This conclusion concerns the 10 MS in scope of the analysis. Though, there are also EU countries where both an engineering degree and training are required.

7. All MS, except for Germany, make available an official public list of certifiers and/or certifying companies; in Spain, Italy, and Belgium, the lists are available at sub-national level.

Exhibit A.7.5. Overview of the minimum requirements for qualified and/or accredited experts

MS	Minimum education requirements	Prior Professional experience and/or additional training		Verification of experts' competences (i.e. mandatory exam)	Accreditation of the certifiers	Continuous Professional Development; renewal of the licence	Public availability of certifiers and/or certifying companies' lists
		Professional experience	Training (Mandatory or Voluntary)				
BE Brussels Region	Engineering degree required for the certifiers of non-residential buildings	Not required	Mandatory	Yes	Based on exam results	Not required [2]	Distinguished per type of existing buildings and for new buildings or renovations
BE Flanders	Engineering degree required for the certifiers of non-residential buildings	2 years of prior professional experience (if no engineering degree)	Mandatory	Yes	Based on exam results	Desk support for certifiers (i.e. FAQ, phone line)	Distinguished for existing residential buildings and public buildings
BE Wallonia	Engineering degree required for the certifiers of non-residential buildings	2 years of prior professional experience (if no engineering degree)	Mandatory (if no engineering degree)	Yes	Based on exam results	Desk support for certifiers	Distinguished for existing and new buildings
DE	Technical education required or relevant training	2 years of prior professional experience (if no engineering degree)	Mandatory (if no engineering degree)	Yes (if no engineering degree)	Not required [3]	Not required	Not required [5]
DK[4]	No minimum requirements, provided competence-based accreditation procedure	Required according to the type of certifier	Mandatory; additional training required as alternative to professional experience	Yes	Established by accredited companies (EN ISO 9001)	Mandatory training every 3 years	Distinguished per type of buildings
ES	Engineering degree	Not required	Voluntary	Not required	Not required [1]	Not required	List of certifiers provided by region/province
FR	2 years of relevant higher education required for the certifiers of non-residential buildings	1-3 years of prior professional experience (depending on the level of education)	Mandatory	Yes	Based on exam results	Renewal of accreditation every 5 years based on mandatory training	Distinguished per type of buildings
IE	Technical education required	Not required	Mandatory (for certifiers of residential buildings)	Yes	Based on exam results and professional certification (if certifier for non-residential buildings)	Renewal of accreditation based on mandatory exam every 2 years and support of certifiers; [6]	Distinguished per type of certifier

IT	Technical education required	Not required	Mandatory (if no professional certification)	Yes (if training required)	Depend on region; not required [1] or based on exam results	Not required	List of certifiers provided by region/province
PL	Relevant higher education required (except for certified building specialist)	Not required	Voluntary	Yes	Based on qualification	Not required	Distinguished per type of certifier
RO	Engineering degree required	3-5 years (depending on the type of certifier)	Mandatory	Yes	Based on exam results	Renewal of accreditation every 5 years (i.e. proof of experience)	Distinguished per type of certifier
UK England, Wales and Northern Ireland	No minimum requirements, provided competence-based accreditation procedure	Not required	Depending on the type of certifier and accreditation	Yes (except in case of accreditation through APEL)	Based on exam results or Accreditation of Prior Experiential Learning (APEL) which is requested for certifiers of the most complex buildings	Mandatory training (minimum 5-10 hours of CPD per year)	Distinguished per type of certifier for residential buildings (Northern Ireland, England and Wales) or non-residential buildings (Northern Ireland, England and Wales)
UK Scotland	No minimum requirements, provided competence-based accreditation procedure	Not required	Voluntary	Yes (except in case of accreditation through APEL)	Based on exam results or APEL	Mandatory periodic training and desk support	Distinguished per certifier or company

Source: BPIE 2015

Notes: [1] Based on trade licenses; [2] Complementary training required for certifiers accredited before June 2014 in Brussels Capital Region; [3] Based on self-declarations of certifiers; [4] New provisions by the Danish Energy Agency concerning certifiers trained after October 4, 2014; [5] Multiple voluntary lists available; [6] The penalty point system for certifiers that may lead to loss of the license

While information on the modalities of accreditation or certification are comprehensive, data on the number of certifiers and the costs for such accreditation and certifications are not. Exhibit A.7.6 below show the estimated number of certifiers in the 10 MS covered in-depth by the Study. Statistics on number of annual registered certifier are hardly available, apart from some countries (e.g. Romania) or specific years. Furthermore there is a significant difference between the number of registered certifiers and the number of certifiers who have actually issued at least an EPC in the same year (as e.g. in the Flemish data, where the number of active certifiers is also detailed). Estimates, where possible, have been calculated based on the number of certifications issued each year and the average number of EPC issued by certifiers.

Exhibit A.7.6 Number of certifiers per MS - estimated values in italics

MS	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
BE [1]		**Start**	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	*6,428*	n.a.	n.a.	9,328
DE [2] [3]	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	28,000
DK [4]	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	*240*	n.a.	*249*	260	n.a.
ES	*No exam or accreditation process required. List of certifiers publicly available only for some regions.*											
FR			**Start**	n.a.	n.a.	n.a.	4,000	n.a.	n.a.	9,700	n.a.	n.a.
IE			**Start**	*n.a.*	*n.a.*	*526*	n.a.	n.a.	n.a.	n.a.	n.a.	575
IT [5]			**Start**	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	71,822	n.a.
PL [6]						**Start**	7,000	n.a	n.a.	n.a.	10,593	n.a.
RO			**Start**	127	214	247	397	696	892	1,146	1.386	n.a.
UK			**Start**	n.a.	n.a.	n.a.	n.a.	*23,500*	n.a.	n.a.	*67,222*	n.a.

Source: BPIE

*Notes: Start: year of start of the EPC system; n.a.: not available; [1] Flanders and Wallonia; [2] The figure refers only to professionals (including architects and engineers) which have been appointed 'buildings energy consultant' (*Gebäudeenergieberater*) by the federal organisation of craftsmen (ZDH); available statistics does not define how many of them are also registered with KfW and BAFA support programmes, which currently include 13447 experts; [3] Statistics for 2015 include also certifiers of HVAC systems; [4] Data refer to accredited companies and not certifiers; before 2009 there were approximately 1000 experts in Denmark; [5] Data refer to 7 regions or provinces: Lombardy, Piedmont, Liguria, Emilia Romagna, Sicily, Valle d'Aosta, and the Province of Trento; [6] 2010 data refer to experts certified between January 2009 and September 2010.*

Only anecdotal information is available on the cost of training. The BPIE study reports only some training costs, which represent only one of the steps of the accreditation/certification process. Training costs, as well as duration, vary from MS to MS, and also within MS across regions[235]. Reported costs go from about €300 in Greece to €1,200 in Austria (for 5.5 days of training) and €1,600 in Estonia (for 10 days). Due to high variability of such parameters, precise information on other costs and time spent by certifiers on this task cannot be retrieved. Given the relatively poorer data concerning the population of certifiers, the lack of data on the cost of the obligation, and the low priority of this cost item for the overall construction industry, Consultants consider that there is no sufficient ground to provide any tentative quantification.

A.7.5 New business opportunities linked to issuance of energy performance certificates

The EPC generate new business opportunities for both professionals and construction companies:

1. For professionals active in the market for EPC, new opportunities are represented by the revenues generated by the EPC, i.e. by the market size. Since our analysis takes into account the intra-value chain distributional effects, this amount needs to be lowered by the share of the market paid for by construction companies (as discussed in Section A.7.3 above).
2. For construction companies and specialised construction service providers, the EPC may generate new business opportunities in two ways: (i) for new buildings and renovation works with improved energy efficiency performance (ii) by triggering additional renovations in existing buildings via the recommendations included in the EPC.[236]

With respect for professionals, the market size can be calculated by multiplying the number of EPC issued per country with the average price. Average prices in the 10 MS have already been reported in Exhibit A.7.1 above. As for the number of EPC per country, data over the 2004-2015 period are reported in Exhibit A.7.7 below. Data provided concern the number of EPC issued, including both new and existing buildings, public buildings, and both for rent and sale transactions; for all countries except Poland, at least one data point for one year is available. The statistics provided are the EPC databases,[237] provided by the ZEBRA2020 project or extracted directly from national sources. Additional information has been extracted from Concerted Action EPBD.

Exhibit A.7.7 EPC issued in each year – estimated value in italics

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
BE [1]			4,565 **Start**	21,095	35,439	197,493	184,027	224,488	243,784	212,391	*253,015*	*243,326*
DE [2]	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	321,996	438,416
DK [3]	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	61,201	51,502	64,078	n.a.	n.a.
ES [4]				**Start**	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	856,100	n.a.
FR [5]			**Start**	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	850,000	n.a.	1,098,979
IE			**Start**	127	3,794	97,054	93,134	109,441	77,696	108,537	119,982	106,005
IT [6] [7]			**Start**	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	419,650	1,246,567	n.a.
PL	*EPC become mandatory in 2009 but until 2012 there was no central register; data on issued EPCs are still not available*											
RO				**Start**	n.a.	n.a.	n.a.	n.a.	*68,126*	*143,281*	n.a.	n.a.
UK [8]				**Start**	1,644,816	2,242,496	1,763,677	1,573,807	1,556,675	2,107,068	2,300,09	1,865,165

Source: BPIE elaboration on ZEBRA 2020, CA EPBD, and own data.

Notes: Start: year of start of the EPC system; n.a.: not available; [1] Flanders and Wallonia, which correspond to more than 90% of the total stock of EPCs; [2] First EPC was issued in 2002, but registration of EPCs has been introduced as of 01.05.2014; [3] The EPC scheme has undergone a major revision in 2010 and a revised scheme has been published in 2011; [4] Registration of EPCs is responsibility of the Autonomous Communities; [5] 2014 data refer to the number of EPC issued refers to the period June 2014 – June 2015; [6] Before 2012, it was allowed to omit the certification of the building if its performance was in the lowest class (G) [7] 2013 data refer to 11 regions; [8] Number of EPCs regards only England and Wales which correspond to more than 90% of the total stock of EPC,

[235] This is particularly the case for country like Italy where training courses and administrative costs vary considerably across the country as showed in "Prospetto 26" and "Prospetto 27" of the report on the status of implementation of EPC in Italy. Cf. CTI (2014), Rapporto 2014 - Attuazione della certificazione energetica degli edifici in Italia.

[236] Though recommendations are not excluded for new buildings, they are of little practical uses and more often neglected, since it is expected that new buildings already comply with energy performance requirements.

[237] EPC databases are part of the quality check process required by EPBD 2010. Since there are no specific requirements, MS are free to develop EPC databases according to national circumstances, and this has resulted in a wide spectrum of approaches. Cf. BPIE Study.

New business opportunities for professionals issuing EPC are calculated in Exhibit A.7.8 below.[238] To fill data gaps in the number of certificates per country, several options were considered. First of all, the number of EPC is not correlated only to the size of the construction market, since EPC are also issued for sale and rent of existing buildings and for frequently-visited public buildings. For this reason, data gaps where only filled for countries in which at least one data point is available, and only for the years following the first data point. Given the lack of good proxies, the data-fill rule is as simple as possible: EPC in year t+1 in Country A are estimated to be equal to EPC in year t. For Poland, no estimation was considered possible or realistic. As done for administrative burdens generated by EPC provisions, business opportunities of EU origin have been obtained by discounting by 50% values in Denmark and Germany, where energy performance certificates were required before the introduction of the EPC. In addition, as already anticipated, to take into account for intra-value chain distributional effects, those values are lowered by the amount of EPC paid for by construction companies (see Section A.7.3 above).[239] The market size, or, in other word,s the revenues generated for EPC professionals, amount to €614 mln in 2014, the only year in which data for 9 MS are available. The steady amount is largely due to the increase of data coverage from additional MS, especially for larger MS, in 2013 and 2014, and should not be interpreted a sign of market increase.

Exhibit A.7.8 EPC: New Business Opportunities of EU Origin for professionals ('000)

MS	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
BE	-	-	€ 913	€ 4,219	€ 7,088	€ 39,499	€ 29,718	€ 37,414	€ 41,919	€ 35,291	€ 42,915
DE	-	-	-	-	-	-	-	-	-	-	€ 34,672
DK	-	-	-	-	-	-	-	€ 15,007	€ 10,634	€ 12,310	€ 13,594
ES	-	-	-	-	-	-	-	-	-	-	€ 121,395
FR	-	-	-	-	-	-	-	-	-	€ 72,643	€ 76,650
IE	-	-	-	€ 21	€ 626	€ 16,014	€ 13,602	€ 16,985	€ 11,698	€ 16,820	€ 18,345
IT	-	-	-	-	-	-	-	-	-	€ 36,114	€ 137,156
PL	-	-	-	-	-	-	-	-	-	-	-
RO	-	-	-	-	-	-	-	-	€ 6,813	€ 14,328	€ 14,328
UK	-	-	-	-	€ 115,137	€ 156,975	€ 123,457	€ 101,101	€ 99,573	€ 137,982	€ 151,906
Total	**-**	**-**	**€ 913**	**€ 4,240**	**€ 122,851**	**€ 212,487**	**€ 166,777**	**€ 170,508**	**€ 170,637**	**€ 325,486**	**€ 610,961**

With respect to new business opportunities for construction companies linked to EPC, those linked to new construction and renovation of buildings with better energy efficiency performance are already discussed at length in Section A.6 above. With respect to benefits generated by recommendations included in the EPC, Exhibit A.7.9 below shows the relevant features of the various national implementation modalities.

[238] Different prices for dwellings and apartment are not used; where price ranges are provided, the median point is used; for Belgium, Flemish prices are used.
[239] From 2010 onwards, and with the exception of Romania, for which no data on new housing completion is available.

Exhibit A.7.9 Content of recommendations included in EPC

	Type of recommendations	Forecasted Energy Performance	Recommendation for cost optimal improvements or cost effective	Estimates on payback period	Cost benefits over life cycle	Financing possibilities	Others
BE	Tailor-made and/or standardised	Yes	Yes	N.a.	N.a.	No	N.a.
DE	Tailor-made	Yes	Yes	Yes	Costs per saved kWh	No	Differentiation of proposed measure between "recommended as a single measure" or "as part of a major renovation"
DK	Tailor made	Yes	Yes	Yes	No	No	No
ES	Yes tailor made and/or standardised		No	No	No	No	N.a.
FR	Tailor made and standardised		It depends on the software used and data flows, but not required in the regulations	It depends on the software used and data flows, but not required in the regulations	It depends on the software used and data flows, but not required in the regulations	No, just link to website	Advice for eco-responsible use, definitions, link to website for more information
IE	Standardised	No	No	Short-medium-long	No	No	N.a.
IT	Tailor made	Yes	No	Yes	No	No	N.a.
PL	Standardised	Yes	No	No	No	No	No
RO	Tailor made (EPC building), standardised (EPC apartment)	Yes. Final energy, per services & cumulated	Cost effective	No	No	No	N.a.
UK	Different approach according to the country (England, Wales, Scotland or Northern Ireland)						

Source: BPIE Survey 2014 and additional exchanges with national experts.

In the period within the scope of our study, the conclusive data regarding new business opportunities generated by EPC recommendations are lacking. The stakeholders did not specifically mention effects from these recommendations. To the contrary, recommendations were sometimes criticised as '*being of little or no use'* or '*too general*'. The recent summary of the EPBD Open Public Consultation reports that *'recommendations […] are neither tailor-made, nor part of a holistic plan for the building'*, and this might have prevented the EPC to fulfil the role as a *'renovation accelerator'*.[240] The EPBD evaluation considered the EPC not to have triggered more ambitious renovations or more renovations.[241] All in all, the impact of EPC on the rate and depth of renovation is estimated by stakeholders to be limited.[242] Up until now the recommendations have therefore not been able to generate new business opportunities.

[240] Consultation Report, at p. 7.
[241] Evaluation Report, at p. 74.
[242] Consultation Report, at p. 34.

A.8 OTHER ENERGY EFFICIENCY MEASURES

A.8.1 Introduction

In section, other issues related to the energy efficiency policy area, namely to the EED, RESD, and EPBD are discussed, in particular

- Section A.8.2 deals with the regulatory effects generated by the EED, and in particular: (i) new business opportunities linked to the 3% target for renovating central government buildings; (ii) new business opportunities linked to the increase in public demand for energy-efficient goods and services; and (iii) new business opportunities linked to the obligation for energy distributors to reduce their sales by 1.5%;
- Section A.8.3 deals with the accreditation and certification of (i) inspectors of heating and cooling systems (EPBD); and (ii) RES installers (RESD);
- Section A.8.4 deals with the impacts of energy efficiency provisions, in particular energy performance requirements and support measures, on construction product manufacturers.

A.8.2 The Energy Efficiency Directive

A.8.2.1 Introduction

The present sub-section explores the regulatory impacts of EED on the construction sector, and more specifically of three items identified during the previous steps of the assignment[243] as possibly generating costs or benefits for construction operators, that are:

1. New business opportunities linked to the obligation to renovate the stock of existing public buildings, including the 3% target for central government buildings (articles 4 and 5);
2. New business opportunities linked to the increase in the demand for high energy efficiency goods and services (including construction) by public bodies (article 6);
3. New business opportunities linked to the increase in the demand for energy efficiency services associated to the obligation for energy distributors to reduce their sales by 1.5% per annum (article 7).

As item 1. was introduced by the EED, and was not included in its predecessor,[244] the provision only applies to one year out of those covered by the study, as it is applicable from January, 1st 2014. Item 2 was deeply amended by the EED, compared to the previous version;[245] the new provisions have been in force as of June 5th 2014. For these reasons, the effects are unfolding only now, and the likelihood of retrieving information was considered very low. Furthermore, those business opportunities are only relevant for the share of interviewees working, directly or indirectly, for the public sector. For this reason, information on these effects was retrieved via:

1. Primary information obtained through ***interviews with trade associations, public authorities and other stakeholders***;
2. ***Secondary sources***, including the 2011 IA on EPBD, [246] National Energy Efficiency Action Plans (NEEAP) submitted by the MS to the European Commission in 2014[247], and the National Green Public Procurement (GPP) Action Plans (policies and guidelines).[248]

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[243] Cf. Revised First Progress Report, 15 January 2016, at p. 11.

[244] Directive 2006/32/EC of the European Parliament and of the Council on energy end-use efficiency and energy services and repealing Council Directive 93/76/EEC, hereinafter 'EED 2006'.

[245] Art. 5 of the EED 2006 required MS to ensure that the public sector fulfilled an 'exemplary role' with respect to energy efficiency. This obligation included the duty to select at least two measures from a least of six, reported in Annex VI to the Directive. One of these measures concerned rental and purchase of energy efficient buildings.

[246] Commission Staff Working Paper – Impact Assessment, accompanying the Directive of the European Parliament and of the Council on energy efficiency and amending and subsequently repealing Directives 2004/8/EC and 2006/32/EC, SEC(2011)779. Hereinafter, 'EPBD IA'. https://ec.europa.eu/energy/sites/ener/files/documents/sec_2011_0779_impact_assessment.pdf

[247] http://ec.europa.eu/energy/en/topics/energy-efficiency/energy-efficiency-directive/national-energy-efficiency-action-plans

[248] The National GPP Action Plans (policies and guidelines) document provides a comprehensive overview of the state of affairs in the 28 EU Member States with regard to Green Public Procurement. This document is available at: http://ec.europa.eu/environment/gpp/action_plan_en.htm (last accessed in March, 2016).

The situation is different for the obligation for energy distributors to achieve energy savings. Similar provisions were already included in the Energy End-Use Directive, though the EED introduced the quantitative mandatory target of 1.5% of annual savings. However, also in this case, early findings indicated that these provisions affected construction operators only in certain MS, and especially the installer segment. For this reason, those effects were not studied through firm interviews, but based on the following sources:

1. Primary information obtained through ***interviews with trade associations, public authorities and other stakeholders***;
2. ***Secondary sources***, including the national reports submitted in force of Art. 7 EED,[249] and the Concerted Action EPBD (CA EPBD) and its publications[250].

The sub-section is structured as follows

1. Section A.8.2.2 analyses the impacts of the 3% renovation rate for public buildings;
2. Section A.8.2.3 assesses whether new business opportunities arose from the obligation for public authorities to purchase energy-efficient goods and services;
3. Section A.8.2.4 discusses the impacts of energy distributor obligations with regard to energy savings.

A.8.2.2 The 3% renovation target for public buildings

Art. 5(1) of the EED requires all Member States, as of 1 January 2014, to renovate (on a yearly basis) 3% of the total floor area of heated and/or cooled buildings owned and occupied by its central government. Such renovations have to be carried out in compliance with the Minimum Energy Performance Requirements (MEPR) set by national requirements set in line with Art.4 of EPBD. More specifically, Art.5 of the EED applies to buildings owned and used by the central government with a usable floor area larger than 500 m^2 and, as of July 2015, also with floor areas of more than 250 m^2. However, the 3% requirement may be opted out of, in case a MS decides to implement other cost-effective measures (e.g. energy audits, deep renovations, behavioural changes of occupants) leading at least to an equivalent amount of energy savings (Art. 5(6) EED).

While not implying any significant direct and/or indirect cost for the industry, Art. 5 EED may instead generate benefits to firms involved in building renovations as well as to the entire construction value chain through an increased demand for renovation services. In fact, as the BAU energy-efficiency renovation rate is only 1.7%, the 3% target set in the EED could pave the way for new business opportunities. Such benefits are expected to decrease over time as the total floor area not meeting the MEPR is likely to be gradually reduced.[251]

However, actual benefits for the construction sector fully depend on the extent to which Member States have opted for other 'alternative' measures that do not involve construction and renovation activities (e.g. behavioural changes); in this respect, one industry associations highlighted how the choice not to implement the 3% renovation target significantly limited the impact of the Directive on the national construction sector. Member States that have chosen the 'default' approach should have made available to the Commission a complete inventory of heated and/or cooled central government buildings by 31 December 2013; conversely, in the case of 'alternative' approaches, they should have notified the 'alternative' measures by the same date. In the latter case, Member States should have reported an energy saving target rather than a target expressed in floor area to be renovated. In any case, while a building inventory was not mandatory for MS notifying 'alternative' measures, it was highly recommended in order to ensure the accuracy of the energy saving target itself. At the current date, 11 Member States decided to opt for the 3% renovation rate while 17 Member States opted for 'alternative' measures (Exhibit A.8.1). As the implementation deadline of Article 5 was set to 1 January 2014, tangible effects are likely to have been produced only during the last year of the time horizon covered by the present Study.

[249] Available on the Commission's website, at https://ec.europa.eu/energy/en/topics/energy-efficiency-directive/obligation-schemes-and-alternative-measures (last accessed on March, 2016).
[250] Available at: http://www.epbd-ca.eu/ (last accessed on March, 2016).
[251] EED IA.

Exhibit A.8.1 Current status of implementation of Art. 5 EED

Default approach (i.e. 3% renovation rate)	Alternative approach
Bulgaria	Austria
Cyprus*	**Belgium**
Estonia*	Croatia
Greece	Czech Republic
Hungary	**Denmark**
Latvia*	Finland
Lithuania*	**France**
Luxembourg*	**Germany**
Romania	**Ireland**
Slovenia	**Italy**
Spain*	Malta
	Nederland
	Poland
	Portugal
	Slovakia
	Sweden
	UK

Source: The Coalition for Energy Savings (2015).[252] Notes: in bold, MS covered in-depth by this Assignment;
**Member States that have officially notified the required inventory to the Commission*

Default approach under Art. 5(1) EED

Among the sampled countries, only Romania and Spain adopted the 'default' approach under Art. 5 EED. Nevertheless, while Spain reports a complete list of all central government buildings with their floor area and Energy Performance Certificates (EPC), the Romanian inventory only provides aggregated information per group of buildings under the authority of one government body. More specifically, Spain officially notified the required inventory to the European Commission while Romania reported its inventory only in the NEEAP (Exhibit A.8.2).[253]

Exhibit A.8.2 Inventory of total floor area reported as Art. 5(5) EED ('000 m²)

Country	Total floor area	3% annual renovation target in 2014
Romania	6,739.2	202.2
Spain	11,200.2	336.0
Total	**17,939.4**	**538.2**

Source: MDRAP and Ministerio De Industria, Energia y Turismo

In these countries, the size of the regulation-induced market stemming from Art. 5(1) EED can be estimated by multiplying the floor area under renovation in 2014 by the costs per m^2 to renovate such area. Estimates for costs of renovations in compliance with energy efficiency requirements are available on the ENTRANZE database of energy efficient technologies.[254] In this respect, average renovation costs for Spain and Romania have been calculated as the average cost of 20 different energy efficiency interventions for a representative office building of 2,340 m^2 in Madrid and Bucharest respectively.

In this context, for Spain the total useful area, as of 1 January 2014, was equal to 11,200 thousand m^2 with a renovation obligation of 336.0 thousand m^2 in the same year. Estimated costs for energy efficiency renovation are equal to €391.4/m^2. This leads to revenues for the construction sectors of €131.5 mln in 2014. To calculate

[252] The Coalition for Energy Savings (2015) - Implementing the EU Energy Efficiency Directive: Analysis of Member States plans to implement Article 5. Available at: http://energycoalition.eu/sites/default/files/20150520%20Coalition%20for%20Energy%20Savings%20-%20Article%205%20analysis%20Report.pdf (last accessed in April, 2016).

[253] For Romania see: MDRAP (2015), Annex to Government Resolution No. 122/2015 for the approval of the National Energy Efficiency Action Plan, at p. 72 - Official Journal of Romania, Year 183 (XXVII) – No. 169 bis. Available at: https://ec.europa.eu/energy/sites/ener/files/documents/NEEAP%20Romania_en%20version.pdf (last accessed in April, 2016). For Spain see: Ministerio De Industria, Energia y Turismo (2014), - 2014–2020 National Energy Efficiency Action Plan, at p.102. Available at: https://ec.europa.eu/energy/sites/ener/files/documents/2014_neeap_en_spain.pdf (last accessed in April, 2016).
Differently from Romania, Spain combines EPC with other energy indicators, such as kWh/m^2/year.

[254] These data are accessible at: http://www.entranze.eu/pub/pub-optimality (last accessed in March, 2016).

the additionality of the 3% requirement over the normal renovation rate, the EU renovation rate of is 1.7% is used;[255] hence, the remaining 1.3% of renovations is attributed to the EED's renovation target. Accordingly, the additional revenues for the construction industry deriving from the implementation of art. 5(1) EED in Spain amounted to some €57.1 mln in 2014. Nevertheless, according to industry associations, the impact of Art. 5(1) EED on the Spanish industry still remained limited so far.

In the same vein, the Romanian total floor area of 6,739.2 thousand m² under inventory required renovation works on 202.2 thousand m² in 2014.[256] Estimated costs for renovation in Romania are equal to €251.1/m². Hence, in 2014 total revenues for the construction sectors from renovating buildings owned and used by the central government were equal to €50.7 mln and, applying a BAU renovation rate equal to 1.7%, €22.0 mln can be considered additional Art. 5(1) revenues.

Alternative approach under Art. 5(6) EED

The majority of countries within the sample have opted for the 'alternative' approach that should deliver at least the same amount of savings of the 'default' one (Art. 5(6) EED).[257] As Exhibit A.8.3 shows, these measures appear to be highly variegated and not following a specific pattern. In addition, even when construction and/or renovation activities are involved (e.g. in case of deep renovations or building envelope renovations), the lack of information regarding the interested building area does not allow to estimate benefits for the construction industry.

Exhibit A.8.3 Alternative measures adopted by country under the Art. 5(6) EED

Alternative measures	Countries										
	BE (Federal Government)	BE (Brussels Region)	BE (Flemish Region)	BE (Walloon Region)	FR	DK	DE	IT	PL	IR	UK
Behavioural changes	x		x	x	x	x	x	x	x	x	x
Deep renovations				x				x			
Building envelope renovations (e.g. insulation works)			x	x	x	x		x			
Technical systems renovations			x	x	x	x		x			
Renewable generation (e.g. installations and incentives)	x			x				x	x		
Office space rationalization and selling off	x				x						
Installation of EE technologies						x					x
Other(s)[258]	x	x				x	x	x	x		x
Expected annual savings (GWh)	na	na	na	na	na	na	na	na	2.12	1.3	na
Equivalent 2014-2020 cumulative savings (GWh)	na	na	na	na	2,447	na	na	459	na	na	na

Source: NEEAP

[255] EPBD IA.

[256] No information regarding the prospective energy savings was provided in the NEEAP.

[257] Alternative measures are reported in the Notifications and/or in the National Energy Efficiency Plans (NEEAP) submitted to the Commission. For France see Ministry of Ecology, Sustainable development and Energy (2013), *Transposition de l'article 5 de la directive européenne 2012/27/UE relative à l'efficacité énergétique. Rôle exemplaire des bâtiments appartenant à des organismes publics. fiche de synthèse*, at pp.14-18. For Belgium see Belgian Energy Efficiency Action Plan According to the Directives 2006/32/EC and 2012/27/EU article 24.2 Annex XIV part 2, at p. 23. For the Brussels, Flemish, and Walloon regions see *Notification belge du rôle exemplaire des bâtiments appartenant à des organismes public. Conformément à l'article 5 de la directive Efficacité Energétique 2012/27/EU* at pp. 26-28. For Denmark see Danish Energy Agency (2013), Notification to the Commission regarding Denmark's anticipated implementation of Article 5 of the Energy Efficiency Directive, at p. 3. For Italy see Ministry of Economic Development (2014), Application of Article 5 of Directive 2012/27/EU on the exemplary role of public bodies' buildings, at pp. 9-13. For Poland see Information for the European Commission on the alternative approach adopted to implement Article 5(1)-(5) of Directive 2012/27/EU of the European Parliament and of the Council of 25 October 2012 on energy efficiency, amending Directives 2009/125/EC and 2010/30/EU and repealing Directives 2004/8/EC and 2006/32/EC (OJ L 315, 14.11.2012, p. 1), For Ireland see Department for communications, Energy and Natural Resources (2013), National Energy Efficiency Action Plan 2014, at pp.26-27. For Germany see 3rd National Energy Efficiency Action Plan (NEEAP) 2014 for the Federal Republic of Germany, at p.32. For UK see Department of Energy and Climate Change (2014), UK National Energy Efficiency Action Plan, pp. 32-34.

[258] Other measures include investment contracts (Belgian Fed. Gov.), PLAGE programme (Brussels Region), operations and land use optimization (Denmark), ESB programme (Germany), energy saving funds and energy savings targets (Italy), support programmes to thermal modernization projects implemented by the National Fund for Environmental Protection and Water Management (Poland), support to projects for energy efficiency and renewable energy use in the public and housing sectors (Poland) and facility management (UK).

All the sampled countries have notified behavioural changes as an alternative measure to be implemented. Interestingly, Ireland plans to achieve equivalent savings through these 'softer' measures only and, more exactly, through the so-called 'Optimising Power @Work staff energy awareness campaign' managed by the Office of Public Works (OPW).[259] At the moment of the notification, €9 mln in Government funding were already made available for the expansion of the programme, which has been running already since 2008.

In Belgium competence for adopting energy efficiency measures are shared by the federal and regional government. For instance, the Brussels Region envisages the implementation of the PLAGE programme which declines energy savings targets within selected organizations,[260] thus strongly relying on a principle of subsidiarity. Introduced in 2005, the PLAGE is a methodology working on a cyclic basis (i.e. every 5 years). During a first phase (year 1), the coordinator of the programme within the organization establishes an energy inventory for each building, selects priorities and establishes an action plan. This may contain diverse measures such as regulations and small or heavy renovations to achieve the minimum target set in the Brussels' legislation. These actions are meant to be implemented during the second phase of the cycle (2014-2010); between the first two phases and after the second one, an auditor controls both the action programme and the project implementation report. If necessary, penalties are applied to non-compliant organisations.

Deep renovations, technical systems and building envelope renovations are among the alternative measures that are more interesting for the construction sector. They have been adopted in France, Denmark, in the Flemish and Walloon Region as well as in Italy. In particular, the Italian Government established a national energy fund of €380 mln in order to support such renovations.[261] In the same vein, as confirmed by several national stakeholders, renewable generation promotion schemes for public bodies (e.g. the Italian "Conto Termico")[262] are expected to positively impact the construction sector through the benefits accruing to energy auditors and installers.

To be sure, the specific impact of Art. 5 EED, in countries such as France and UK, might be difficult to be disentangled from the effects of national provisions insofar as in those Member States compliance took place with measures already agreed upon and planned before the entry into force of the Directive.[263] Similarly, Germany's effort to increase energy efficiency of buildings converged into the wider 2011's "Energy refurbishment roadmap for Federal Government properties" (ESB) aimed at reaching the Federal Government's energy objectives to develop a climate-neutral building stock.

To conclude, it is worth highlighting that, under the 'alternative' approach, no guidance on timing is provided. In fact, even though the Directive clearly specifies that Member States opting for the alternative approach must notify their measures to the Commission by 31 December 2013, the same gives no indication on how the related savings should be temporally spread after this date. More specifically, savings should ideally follow a linear increase; however, the lack of detail in the current Guidance Document[264] allows Member State to achieve them only at the beginning or at the end of the 2014-2020 period and this may be reflected in "stops-and-goes" policies as well as discontinuous benefits for the construction sector. Furthermore, out of the 17 countries that opted for the 'alternative' approach only five provided a clear estimate of savings per individual

[259] OPW will be responsible for delivering the target savings. Its duties include the management and maintenance of the State's property portfolio.
[260] The organizations falling under the scope of the PLAGE Programme are indicated in the Annex V 4 of the COBRACE (*Code bruxellois de l'air, du climat et de la maîtrise de l'énergie*), namely: any company owning and/or occupying buildings on the territory of Bruxelles Region together representing a total area of over 100,000 m²; non-profit associations, international non-profit associations and foundations, owning and/or occupying buildings on the territory of the Bruxelles Region representing together a total area of over 100,000 m²; public powers owning and/or occupying buildings representing together a total area of 50,000 m²; federal, regional and European authorities owning and/or occupying buildings.
[261] However the National Energy Efficiency Fund could be used also for financing behavioural changes policies.
[262] The "Conto Termico" provided incentives equal to €23.8 mln over the period 2013-2014 of which €3.6 mln to public administrations.
[263] Namely the "*Grenelle de l'Environnement*" and the "Greening Government Commitments" respectively.
[264] See Commission Staff Working Document - Guidance note on Directive 2012/27/EU on energy efficiency, amending Directives 2009/125/EC and 2010/30/EC, and repealing Directives 2004/8/EC and 2006/32/EC.

action (only Ireland and Poland among MS covered in-depth) and only five calculated the equivalence with the default approach (only France and Italy among MS covered in-depth).[265]

A.8.2.3 Purchase of high efficiency goods and services (including construction) by public bodies

Article 6 of the EED requires Member States to ensure that central governments purchase or rent buildings with high energy-efficiency performance and compliant with the (non-exhaustive) list of standards contained in Annex III and in particular the MEPR set under Article 4 of the EPBD. The resulting procurement rules must be consistent with the principles of cost-effectiveness, economic feasibility, wider sustainability, technical suitability, and sufficient competition. By its very nature, Art. 6 EED is strictly connected to the Public Procurement Directives (Directive 2014/24/EU and Directive 2014/25/EU which replaced Directive 2004/17/EC and Directive 2004/18/EC) as well as to the 2008 Sustainable Consumption and Production and Sustainable Industrial Policy Action Plan.[266] This legislation, while not setting mandatory requirements and/or targets, clarify how awarding authorities can embed environmental considerations in their call for tenders; accordingly, the European Commission has developed EU common Green Public Procurement (GPP) criteria inviting authorities to include them into their tendering procedures. These criteria are not binding. Moreover, the Commission encouraged the adoption of National Action Plans (NAP) containing an assessment of the existing situation, ambitious targets for the following three years and a specification of what GPP criteria will be adopted. NAP are not legally-binding, but they are supposed to create awareness and help the process of implementing greener public procurement.

Implementation of GPP criteria in the construction industry

Interim results collected by the Commission show that energy efficiency requirements in public procurement are not fully understood by all agents and that the transposition of Art. 6 EED is not yet finalized in some countries.[267] Exhibit A.8.4 illustrates the different approaches followed by the sample countries in tendering procedures for construction and/or renovation works. It is worth stressing that, even without transposing Art. 6 EED, certain Member States might still be considered compliant with the rule insofar as they integrate GPP criteria (EU or national) in their public procurement procedures on a mandatory basis.[268]

[265] The Coalition for Energy Savings (2015) - Implementing the EU Energy Efficiency Directive: Analysis of Member States plans to implement Article 5. Available at: http://energycoalition.eu/sites/default/files/20150520%20Coalition%20for%20Energy%20Savings%20%20Article%205%20analysis%20Report.pdf (last accessed in April, 2016)

[266] Communication from the Commission on the Sustainable Consumption and Production and Sustainable Industrial Policy Action Plan. 16.7.2008, COM(2008)397.

[267] See Communication from the Commission, Assessment of the progress made by Member States towards the national energy efficiency targets for 2020 and towards the implementation of the Energy Efficiency Directive 2012/27/EU as required by Article 24 (3) of Energy Efficiency Directive 2012/27/EU, COM (2015)574, at pp. 8-9.

[268] A complete overview of criteria adopted by each Member State is available at: http://ec.europa.eu/environment/gpp/pdf/national_gpp_strategies_en.pdf (last accessed on March, 2016).

Exhibit A.8.4. Implementation of GPP criteria in the construction industry

Status for the construction industry	Countries												
	BE (Federal Government)	BE (Brussels Region)	BE (Flemish Region)	BE (Walloon Region)	FR	DK	DE	IT	ES	PL	RO	IE	UK
Art. 6 EED transposed	x												x
Art. 6 EED under transposition									x				
Mandatory EU GPP criteria													
Mandatory National GPP criteria				x			x						x
Recommended EU GPP criteria						x				x		x	
Recommended National GPP criteria			x		x				x	x			
GPP criteria under development								x			x		
Notes		GPP criteria not adopted for constructions			Option to conclude Energy Performance Contracts						Draft law establishing GPP framework under consultation		

Source: Authors' elaboration on NEEAP[269] and national legislation.

UK transposed Art. 6 EED through a Procurement Policy Note, published on 3 June 2014,[270] for which "[o]nly buildings that comply with the minimum standards that are set out in Annex 2 of [the] PPN may be purchased or rented".[271] For existing buildings, the exact EPC rating requirement, broken down by building type, is indicated; conversely "new buildings […] will […] automatically comply with the minimum energy performance requirements under Article 5(1) of the Energy Efficiency Directive".[272] In the same vein, the Belgian Federal Government approved a Royal Decree which obliges central government offices to buy, rent, or establish real rights[273] only on buildings conform to the applicable MEPR.[274]

Other sampled countries only either mention Art. 6 EED in their NEEAPs or rely on GPP criteria in their public procurement procedures; however, in the latter case it has to be noticed that such criteria are rarely binding. For instance, the Romanian NEEAP states that public procurement of products, buildings and services will be carried out so as to ensure high energy efficiency by meeting the standards listed in Annex III of the EED and "by taking into account the return on investments and ensuring a loyal competition";[275] however, no GPP criteria has been developed yet, neither a NAP or equivalent document has been issued so far. Similarly, Spain is carrying out the necessary legislative process to be compliant with Art. 6 EED; however no binding rule has been approved during the time span covered by the Assignment.[276] In Ireland EU GPP for construction are in the form of recommendations and this is also the case in Poland and Denmark.[277] Italy envisages the implementation of Environmental Minimum Requirements which should extensively cover all the aspects of

[269] See note 257.
[270] Cabinet Office (2014), PPN 07/14 on implementing Article 6 of the Energy Efficiency Directive - Action Note 07/14 3 rd June 2014, at p.4.
[271] Exceptions are buildings purchased for deep renovation, demolition, or for resale without being used for an In Scope Organisation's purposes, or to preserve listed buildings
[272] It has to be noticed that, even though being extremely consistent with the energy efficiency principles, the Procurement Policy Note does not make any explicit reference to cost-effectiveness, economic feasibility, wider sustainability, technical suitability and sufficient competition, neither how these principles should be reconciled with energy efficiency considerations. UK envisages also the use of National GPP criteria which are mandatory only for centralized contracts.
[273] Thus expanding the scope of Art. 6 EED.
[274] See Art. 8 of *Arrêté royal relatif aux exigences d'efficacité énergétique dans le cadre de certains marchés publics portant sur l'acquisition de produits, de services et de bâtiments* - 13 July 2014.
[275] MDRAP (2015), Annex to Government Resolution No. 122/2015 for the approval of the National Energy Efficiency Action Plan, at p. 75 - Official Journal of Romania, Year 183 (XXVII) – No. 169 bis.
[276] See Ministerio De Industria, Energia y Turismo (2014), - 2014–2020 National Energy Efficiency Action Plan, at p.108.
[277] In Denmark a National Strategy on GPP is in force and an indicative political target of 50% of GPP exists; however the default rule is the recommendation (not the obligation) of EU GPP criteria where non-national criteria is developed. For more information see http://ec.europa.eu/environment/gpp/pdf/national_gpp_strategies_en.pdf at p.8

public procurement within the country.[278] Nevertheless, only with the enactment of Law 221/2015, EMR have become mandatory for all procurement of goods, services, and works with end-use energy efficiency requirements.[279] Moreover, this obligation is set just for central purchasing bodies at a national and regional level (e.g. CONSIP). More importantly, Environmental Minimum Requirements on construction, renovation, and maintenance of buildings have been developed after 2014.[280] In a nutshell, as confirmed by Italian stakeholders, the uptake of green public procurement criteria in tendering procedures for renovation and/or construction works is still limited if not negligible so far, and the impacts of the 2015 legislative reform cannot yet be measured.

Finally, countries like Germany already complied with Art. 6 EED through existing legislation. In fact, the German Public Procurement Regulation already obliged all public contracting authorities, in Europe-wide calls for tender, to demand the highest level of energy efficiency and, where available, the highest energy-efficiency class when procuring goods that have a bearing on energy consumption. Energy efficiency must also be used as one of the evaluation criteria when determining the most economical bid.[281] Additionally to these obligations, the Unfair Competition Act (*Gesetz gegen Wettbewerbsbeschränkungen*) called specifically for energy-efficient procurement in Part A for Construction and in Part A for Services.[282]

To conclude, the adoption of MEPR in public procurement rules regarding buildings is fragmented and still lagging behind in several countries included in the sample. Even in countries where full transposition of art. 6 EED has taken place, the actual impact on the time frame covered by this Study might have been limited. In this regard, it is worth remarking that potential benefits most probably will accrue in coming years, especially when considering that the Directive applies to call for tenders issued after 5 June 2014 and that public tenders usually require several months to be awarded and years to be completed. In addition, the analysis above shows that Art. 6 EED overlaps with others EU Directives and this makes it more difficult to disentangle the benefits of the EED from those stemming from other EU rules or generated by national legislation.

A.8.2.4 Obligations for energy distributors to achieve energy savings

Article 7 of the EED requires MS to set up an energy efficiency obligation scheme, ensuring that energy distributors and retail companies (cd. 'obligated parties') reduce the sale of energy, by volume, at least by 1.5% per year. Broadly speaking, the savings are to be obtained by reducing the energy consumption of final users, including both households and industrial customers. However, MS can opt out from this provision and choose from a list of alternative policies, demonstrating that they obtain the same energy savings as the 1.5% reduction. Alternatively, under Art 7(9) Member States can adopt other policy measures to achieve an equivalent amount of energy savings. This provision, as the entire EED, is to be transposed by June, 2014. A provision with a similar scope and aim was included in article 6 of the Directive on end-use of energy. However, it included voluntary agreements as opposed as to mandatory targets.

Among the 10 MS in the scope of the analysis, only two countries have completely opted out from setting up an energy efficiency obligation scheme for distributors and retail companies, namely Germany and Romania; in Spain, the government expressed the intention to establish such a scheme but still has not done so. In all other MS, schemes were set up (including by regional governments in Belgium), to at least partly achieve the article 7 targets. Usually, these schemes are then complemented by other alternative policies, which contribute to achieving the mandatory savings.[283] In six MS (Denmark, France, Ireland, Italy, Poland, and UK), these schemes have switched from voluntary to mandatory measures over the recent years, and in particular following the adoption of the EED.[284] Obligated parties have to either contribute to the funding of these schemes, or implement energy saving measure themselves. In several cases, the duty to implement energy-efficient measures is coupled with a market for so-called 'white certificates', i.e. tradable certificates

[278] See Ministry of Economic Development (2014), Italian Energy Efficiency Energy Action Plan, § 3.3.4.
[279] At least in technical specifications and contract performance clauses. This obligation covers the overall tender value.
[280] Just Environmental Minimum Requirements regarding energy services for buildings already existed.
[281] See section 4(4) to (6) of the Vergabeverordnung – VgV.
[282] See 3rd National Energy Efficiency Action Plan (NEEAP) 2014 for the Federal Republic of Germany, at pp.25-26.
[283] Cf. Art. 7 National Reports.
[284] CA EBPD (2016), Implementing the EPBD featuring country reports, at p. 100.

corresponding to a certain amount of energy saved.[285] The redemption of these certificates, based on the projects undertaken, allows obligated parties to comply with their obligation; in case the energy saved is lower than the mandatory target, certificates can be bought on the market (or a penalty is imposed – the two options being financially equivalent for the company). All in all, article 7 obligation schemes are estimated to generate about one third of the whole EU energy savings, as identified in the NEEAP.[286]

Where schemes require energy distributors and retailers to undertake energy savings actions, great attention is paid to small refurbishments in existing buildings, and in particular to heating systems, especially boilers, other building systems, such as ventilation and air-conditioning, windows, and insulation are among the most common measures. These interventions are explicitly mentioned in the article 7 reports of e.g. Belgium, Ireland, and Denmark. Indeed, such interventions in existing buildings are deemed to be cost-effective, and energy distributors and retailers are already in contact with end users for marketing and billing reasons, and hence have the means and capacity to propose small-scale improvements. Furthermore, these interventions can be standardised and the expected energy saving easily estimated. Other areas of intervention not relevant for the building sector include lighting and projects for the efficiency of industrial processes.

Where energy obligations of this kind were imposed on energy companies, this resulted in new business opportunities for the construction sector, in particular for installers of building systems (especially heating) and windows, and to a lesser extent for construction operators, in case of insulation works or other larger interventions. Information on the market effect of article 7 schemes could be retrieved for three countries, i.e. France, Italy, and the UK. The information refers to 2014, which is the year when the EED entered into force.

1. In **France,** 88% of article 7 energy savings were obtained via the '*Certificats d'économies d'énergie'*, i.e. the obligation schemes for energy distributors and traders. Those certificates foresee a penalty equal to €0.02 for kWh of missed saving. This price can be considered as the maximum value of those certificates (i.e. an obligated party will undertake savings that cost less than €0.02/kWh, or rather pay the fine). In 2014, 11.2 TWh of savings were certified, amounting to €224 mln. 90.1%, that is about € 202 mln, were invested in interventions on existing buildings, especially interventions on heating systems and building envelopes.[287] Based on these schemes, large French energy companies set up networks of operators: the energy operator sells energy-efficiency interventions to its customers, who can pay in instalments via the energy bills, and has its partner craftsmen carrying out the intervention on its behalf. For example, EDF set up the *Blue Ciel* platform,[288] in which more than 4,000 French artisans, mainly installers, take part. While these networks create business opportunities for small craftsmen, EDF obviously enjoys a higher bargaining power, and is thus able to demand access requirements, fees, and other service requirements. French artisans are reportedly gladly participating in these networks, because of the business opportunities and because they can reach to EDF network of customers.

2. In **Italy,** energy distributors and traders participate in the *'Certificati Bianchi'* scheme. In 2014, more than 7.5 mln white certificates were issued, with a value of about €830 mln. Small-scale interventions, in particular in heating and hot water systems, and interventions on the building envelope accounted for about 16% of this value, i.e. about €130 mln. The most common standard interventions include wall insulations, the substitution of boilers, and other improvements of the heating and cooling systems. Also in Italy, large energy companies try to leverage on their commercial and financial capacity and customers' knowledge to sell energy-efficiency interventions in building. Previously, the Italian legislation had prevented energy distributors from carrying out installation activities to avoid unfair competition and economic dependency. However, the provision was found in breach of the EU

[285] E.g. in France, Italy, and the UK.
[286] *Ibid.,* at p. 101.
[287] Cf. Gouvernment Français (2015), Rapport annuel 2015, dû au titre de l'article 24 de la Directive Efficacité Energétique (DEE); and cf. Art. 7 Report – France.
[288] http://travaux.edf.fr/construction-et-renovation/les-partenaires-bleu-ciel-d-edf (last accessed on March, 2016). Another network managed by EDF is Synerciel (http://www.synerciel.fr/), encompassing 1,800 construction professionals, which participate to the capital of a joint stock company.

treaties. Since then, large companies, e.g. Enelenergia, have been offering energy-efficiency interventions to their customers.[289]

3. In the **UK**, several company obligation schemes required energy operators to achieve energy savings via interventions in households' and other buildings (e.g. the Carbon Emission Reduction Target and the Community Energy Saving Program). In 2013, these programmes were replaced by two new initiatives, the Green Deal programme and the Energy Company Obligation. In 2014, under the various programmes the following interventions were financed: (i) 320,000 cavity wall insulations; (ii) 60,000 solid wall insulations; (iii) 220,000 loft insulations; and (iv) 1,510,000 interventions on boilers and heating systems.[290]

In conclusion, energy efficiency obligations for energy traders and distributors may represent a source of business opportunities for construction companies, and especially installers, as energy companies are very likely to suggest small-scale interventions to their residential customers, leveraging on their financial capacity and customer relationship. Even in MS where these programmes were not specifically targeted to the building sector, a significant or prevailing share eventually involved the stock of existing houses, especially with regard to heating systems, windows, and insulation. These benefits, however, can only partially be attributed to the EU framework because of at least two reasons:

1. Some of these requirements for energy traders and distributors existed before they became obligatory under the EED;
2. They are strongly dependent on the implementation modalities chosen by the MS, including the possible focus on small-scale interventions in buildings.

A.8.3 Accreditation and certification of inspectors of building systems and RES installers

A.8.3.1 Introduction

The present sub-section explores two cost items which are relevant for a segment of the construction value chain, i.e. installers:

1. A cost item generated by the EPBD (art. 17), that is 'substantive compliance costs to become a qualified or accredited expert for system inspections (initial and continuous training, software licence, audit by administrations)';
2. A cost item generated by the RESD (art. 14(3)), that is 'substantive costs for the installers of renewable energy systems to meet requirements of certification or equivalent qualification schemes'.

The above-mentioned cost items are assessed based on:

1. Primary information obtained through ***interviews with installers***;
2. Primary information obtained through ***interviews with trade associations, public authorities and other stakeholders***;
3. ***Secondary sources***, including the evaluation of the EPBD,[291] the mid-term evaluation of the RESD,[292] the Concerted Action on EPBD (CA EPBD) and its publications,[293] the Concerted Action on RESD (CA RESD) and its publications,[294] and the Impact Assessment of the EPBD. [295]

[289] https://www.enelenergia.it/mercato/libero/it-IT/casa/energia-intelligente (last accessed on March, 2016).
[290] Committee on Climate Change (2015), Meeting Carbon Budgets – Progress in reducing the UK's emissions - 2015 Report to Parliament. No data is available concerning interventions on windows, also eligible under the programmes. Cf also. Rosenow, J. and N. Eyre (2014), Re-energising the UK's approach to domestic energy efficiency, ECEEE Summer Study Proceedings, pp. 281-289.
[291] Ecofys (2015), Ex-post evaluation of the application of Directive 2010/31/EU, Final report for DG ENER. Hereinafter, 'EPBD Evaluation'.
[292] CE-Delft (2015), Mid-term evaluation of the Renewable Energy Directive, A study in the context of the REFIT programme, report for DG ENER. Hereinafter 'RESD Evaluation'.
[293] Available at: http://www.epbd-ca.eu/ (last accessed on March, 2016).
[294] Available at: http://www.ca-res.eu/ (last accessed on March, 2016).
[295] Commission Staff Working Paper – Impact Assessment, accompanying the Directive of the European Parliament and of the Council on energy efficiency and amending and subsequently repealing Directives 2004/8/EC and 2006/32/EC, SEC(2011)779. Hereinafter, 'EPBD IA'.

In line with the scope of the Study, the evaluation of these items is carried out from the point of view of construction sector operators, in this case installers. As a result, the following aspects are not discussed below: (i) costs and benefits falling on other subjects, such as building owners, tenants, or public authorities;[296] (ii) substantive issues linked to the EBPD framework, and in particular the working of the inspection regime; and (iii) substantive issues linked to the RESD framework, and in particular the uptake of RES in buildings.

The sub-section is structured as follows:

- Section A.8.3.2 focuses on the costs for becoming a qualified or accredited expert for system inspections;
- Section A.8.3.3 deals with the costs incurred by RES installers to obtain a certification or an equivalent qualification;

A.8.3.2 Accreditation and certification of inspectors of building systems

Articles 14 and 15 of the EPBD 2010 state that both heating and air-conditioning systems with an effective rated output over a certain threshold[297] shall be subject to regular inspections of their accessible parts. Similar provisions were already included in the EPBD 2002 in articles 8 and 9,[298] and were to be implemented as of January 2009.[299] MS can opt out from the provisions on inspections and introduce other measures with an equivalent impact.[300] As a consequence, 13 MS introduced alternative approaches for heating systems, and 7 for air-conditioning systems.[301] Among the MS covered by this Study, Ireland opted for alternative measures for both cooling and heating inspections, while France, Denmark,[302] Germany, and the UK opted for alternative measures for heating inspections.

Article 17 of the EPBD 2010 requires that these inspections are carried out 'by qualified and/or accredited experts, whether operating in a self-employed capacity or employed by public bodies or private enterprises'. The same requirement was provided for by the EPBD 2002.[303] The EPBD 2010 adds the obligation for MS to make available public information on training and accreditation, and to publish and update lists of accredited companies/experts.

The requirements concerning the qualification or accreditation of inspectors of both heating and air-conditioning systems are very different across MS.[304] In particular, accreditation or qualification may be based on training, exams, professional experience or attestation of competence. In addition to that, qualification may be 'automatically' granted to installers already operating in these market segments. Furthermore, in certain MS, these requirements are set and/or managed at regional level, e.g. in Italy, Spain, and Belgium.

In most countries, a prior level of educational qualification is mandatory, and a secondary education diploma is usually necessary for installers. Professional experience is another common requirement to access the market.[305] Qualifying examinations, where mandatory, are different in coverage and depth. Here below, secondary evidence available for the MS covered by this Study[306] is provided:[307]

1. In **Belgium**, no mandatory external certification for installers and inspectors is required; very few operators opted for a voluntary certification, with SME having a limited interest. In general, the

[296] For further information on these aspects, cf. EPBD Evaluation.
[297] I.e. for heating systems, those with boilers whose effective rated output is higher than 20 kW; for air-conditioning systems, those with an effective rated output higher than 12 kW.
[298] Though there was no provision for alternative measures to inspections of air-conditioning systems.
[299] 23 MS opted for such extended transposition deadline, as provided by art. 15 EPBD 2002. Cf. EPBD IA, at p. 21.
[300] Alternatives are spelled out in art. 13(4) and 14(4) and include: (i) provision of advice to users concerning the replacement of boilers/air conditioning systems; (ii) other modifications to the heating/air-conditioning systems; and (iii) and alternative solutions to assess the efficiency and appropriate size of the boilers/air-conditioning systems.
[301] EPBD Evaluation, at p. 48.
[302] In Denmark, the scheme of inspection of air-conditioning systems was discontinued as of 1st of January 2016 (cf. *infra*).
[303] At art. 10.
[304] Cf. EPBD IA, at p .48.
[305] CA EPBD (2011), Implementing the Energy Performance of Buildings Directive featuring country reports, at p. II-76.
[306] Ireland has opted for alternatives measures for inspections of both heating and air-conditioning systems.
[307] Cf. CA EPBD and interviews with stakeholder associations, governments and installers.

procedures for market access are considered easy to comply with and non-burdensome. More specifically, in the Brussels region, the legislation provides for five types of qualified experts for heating systems, depending on the type of inspections and boilers. All types of experts have to be accredited by 'Bruxelles Environment – IBGE', and the accreditation system foresees a training programme and a test of competences. The accreditation is valid for 5 years and can be renewed for 5 more years. In Flanders, inspectors of air conditioning systems have to: (i) possess a degree in electromechanics; (ii) be specialist in climate control or cooling technology; (iii) be a certified climate control expert; or (iv) be an air conditioning or cooling technician recognised by the Flemish government. In addition to that, experts from other EU MS may demand access to the profession, as well as craftsmen with at least three years of experience with cooling and air-conditioning systems with power >12 kW.

2. In **Denmark**, the inspection of heating and air-conditioning systems has to be carried out by qualified or accredited experts, in compliance with the EPBD.[308] Four categories of experts are foreseen, depending on whether they can only inspect the boiler or the whole heating system, and on the fuel used. All categories must attend a training period and sit a qualification exam. Installers, technicians and chimney sweepers (the latter not for gas-fired boilers and systems) may demand access to the profession.

3. **France** is the only MS among those covered in-depth in which an ISO certification is required for inspectors of air-conditioning systems, who have to be certified according to the ISO standard 17024, by a body accredited by the French committee of accreditation (COFRAC). Two certifications exist, for smaller or larger systems. The certification is granted for five years upon passing a theoretical and practical exam. The certified inspector is then subject to audits, both on the reports issued and during inspections. France opted out from inspections of heating systems.

4. In **Germany,** no accreditation for inspectors of heating and air-conditioning systems is required. The requirements for inspectors are spelled out in the law on Energy Efficiency.[309] Germany opted out from inspections of heating systems.

5. In **Italy,** the operators qualified for the installation and maintenance of heating and air-conditioning systems can also perform inspections without additional requirements, at least for systems with a nominal power lower than 350 kW (for systems over this threshold, companies must have an ISO 9001 certification).[310]

6. In **Spain**, accreditation is not required for qualified industrial engineers, including companies having an industrial engineer as employee. Otherwise, accreditation is necessary according to the *Reglamento de Instalaciones Térmicas en los Edificios* and foresees (i) training; (ii) professional experiences; and (iii) an exam. The administration of the accreditation system is competence of regions and communities.

7. In **Poland,** the inspection of boilers, heating, and air-conditioning systems can be performed by engineers or technicians competent for supervising installation works. No evidence could be found concerning mandatory accreditation for inspectors.

8. In **Romania,** only technical experts certified in heating and ventilation systems can perform inspections. The list of accredited experts is published by the Ministry for regional development and public administration.[311]

[308] A mandatory inspection scheme for cooling systems, called 'Eftersynsordning for ventilasions- og klimanlaeg' came into force in 2008 and was abolished as of of January, 1st 2016.
[309] *Energieeinsparverordnung – EnEV.*
[310] Cf. the applicable regulation, that are (i) *Decreto del Presidente Della Repubblica 16 aprile 2013, n. 74*; and (ii) *Decreto del Ministero dello Sviluppo Economico del 22 gennaio 2008*, n. 37.
[311] Cf. http://www.mdrap.ro/constructii/atestari-tehnico-profesionale/experti-tehnici (last accessed on March, 2016).

9. In the **UK,** air-conditioning systems over 12 kW must be inspected by accredited assessors. The accreditation requires (i) demonstration of competences, though a recognized qualification or professional experience; (ii) proof of professional insurance; (iii) continuous training; (iv) quality assurance systems; and (v) compliance with the accreditation scheme guidance. Twelve accreditation schemes were approved by the government.[312]

Information on costs was retrieved via interviews with installers and stakeholder associations. However, given the diversity of schemes across MS, the number of data points are not sufficient to perform a quantification. In any case, ***the attribution of these costs to the EU framework would considerably fall below 100%***; indeed, while the EPBD mandates accreditation or certification, the choice between the two alternatives and the modalities for implementation, and thus the costs generated, depend on the national, and sometimes regional, governments. This clearly results from available evidences, as some MS extended previous accreditations for heating and air-conditioning installers, at no or limited costs for the operators, while other implemented *ex novo* accreditation schemes requiring training and the passing of exams, including France which mandated external ISO certification for air-conditioning system inspectors. Information retrieved can be summarized as follows:

1. In Italy, no relevant costs are incurred concerning the inspection of heating systems, as any operator qualified for installing and maintaining such systems is entitled to carry out inspections. For cooling systems, the *FGas* certification – concerning the use of fluorinated gases and thus out of the scope of the EPBD – is a market standard and *de facto* mandatory. The *FGas* certification is valid for one year and costs about €2,000. The yearly renewal costs significantly less. This certification system is currently under review, precisely because of operators complaining about its cost.
2. In Spain, obtaining the RITE certifications for subjects not meeting the educational requirements (e.g. a degree in engineering) is very demanding and costly.
3. In Poland, though no mandatory training was identified, attendance of public and private training was reported by the interviewees. Though training is usually paid for by private parties (e.g. boiler producers) or public money (e.g. via EU funds), the interviewees reported a loss of 1-2 days of work, and out-of-pocket expenses concerning travel and sometimes accommodation. Training is usually attended on a yearly basis.

A.8.3.3 Accreditation and certification of RES installers

The installation of small-scale biomass generators is largely carried out by installers and providers of specialised construction services included in the NACE Group 43, though specialized firms also exist, installing RES generation capacity without carrying out other construction services. Indeed, the installation and maintenance of RES plants in buildings are closely integrated with the installation and maintenance of building systems, and in particular heating, cooling, and electricity systems.

The accreditation and certification of RES installers is regulated by the RESD, which is not an act specifically designed for buildings or the building sector. The regulation of this aspect is quite loose, as article 14(3) RESD 'only' provides for MS to ensure that ***certification or equivalent qualification schemes are or become available by 2012 for installers of small-scale RES generation capacity***, including biomass boilers and stoves, solar photovoltaic and thermals systems, shallow geothermal systems, and heat pumps. These schemes shall take into account existing ones, where available, and shall be based on the criteria laid down in Annex IV to the Directive. Annex IV gives MS great flexibility in the organization of the certification and qualification process, provided that it includes training and a final exam. With regard to training, the Annex details the conditions and the content. Finally, article 14(3) require MS to recognize certifications awarded in other MS which comply with these criteria.

[312] Building Engineering Services Competence Assessment, Building Research Establishment, Chartered Institute of Building Services Engineers, ECMK Ltd, Heating and Ventilation Certificated Associates, National Energy Services, Northgate, Quidos. Sterling Accreditation, and Stroma.

The lack of certification or equivalent qualification schemes, and the insufficient availability of trainings, was considered as a barrier to the deployment of RES small-scale generation capacity.[313] Furthermore, certification or equivalent qualification is expected to deliver benefits to the installers, including a signaling function of higher expertise in RES deployment and additional trust by consumers.[314] ***As the measure is not binding, in this case no regulatory costs can be attributed to EU legislation***.

The uptake of this provision is still limited. According to CA RES data, 13 MS introduced a certification scheme for experts, and 3 MS a qualification. These schemes vary to a large extent among MS, in particular concerning: (i) content/competencies; (ii) the subjects (companies or individuals); (iii) the responsible body; (iv) the length of training; (v) the demonstration of competences; (vi) the administration of the scheme; and (vii) the duration of the qualification and the requirement for continuous professional development. Furthermore, schemes may be mandatory or voluntary. Voluntary schemes may still be linked to the subsidy/incentive schemes established at national level, providing much stronger incentives to obtain the qualification / accreditation.[315] Information on the 6 MS covered in-depth by the Study where a certification or qualification scheme exists is provided here below:[316]

1. In **Belgium**, a voluntary certification scheme exists as from January 2014, for both individual and companies. The development and implementation of the schemes are left to regional governments. The scheme foresees 35-40 hours of training and a theoretical and practical examination. Stakeholder associations considered the scheme easy to comply with, and reported that there is no demand from SME to have it mandatory in the future.

2. In **Denmark,** a voluntary scheme is in place for companies,[317] including 32 hours of training, an exam, and the approval of the company's quality management by audit companies. Pre-existing competence can be taken into account to reduce training requirements. The participants to the training must have a background in the field of electricity, heating, or ventilation systems.

3. In **France,** a certification scheme, the so-called RGE,[318] was set up; though not mandatory, resorting to an RGE-certified company is a prerequisite for customers to access public financial support for building renovation and RES deployment. RGE is not a certification *per se*, but a certification of existing accreditation or equivalent schemes (e.g. *Quali'Sol* for thermal solar, *Quali'Pac* for heat pumps, and *Quali'PV* for photovoltaic). Companies possessing these first-level qualifications can be RGE-certified.

4. In **Germany, the** installation of RES can be carried out by specialized craftsmen or engineers. No accreditation system exists.

5. In **Italy,** the accreditation is not yet operational**.**[319] As of August 2013, new professionals/companies intending to work in the RES market and, in certain cases, companies already operating, have to comply with the following requirements: (i) the person responsible for RES installation within a company (or as an independent professional) needs to attend a 80 hour-training course; and (ii) all RES certifiers within a company need to attend a 16-hour-lifelong training course. However, since professional training is a shared competence between the central and regional governments, a regional legal framework is required for the provision to be operational. So far, training has not yet started in

[313] In 2010, most of MS lacked certification schemes for one or more of the RES small-scale technologies, and a majority of MS did not provide sufficient training schemes, either within existing education curricula, or through lifelong education for technicians and professionals. Cf. Ecorys (2010), Assessment of non-cost barriers to renewable energy growth in EU Member States – Report for DG TREN.
[314] Cf. RESD Evaluation, at p. 129 and ff.
[315] CA RES (2015), Core Theme Interim Report, Core Theme 3: RES Heat..
[316] Cf. CA RES and interviews with stakeholder associations, governments and installers.
[317] *'Frivillig godkendelsesordning for virksomheder, der monterer små vedvarende energianlæg'.*
[318] *Reconnu Garant de l'Environment.* The RGE scheme concerns not only RES installers, but also other construction operators, such as professionals, companies providing energy-efficient renovation services, installers of insulation materials, and of heating systems.
[319] Access to the RES installation market is currently allowed for companies meeting the requirements to work as installers of building systems, i.e. to individuals (or companies employing individuals) with (i) a scientific university degree; (ii) a secondary degree and working experience; (iii) specific training and professional experience; (iv) professional experience as specialised operator.

any region, and only few regions have already adopted the necessary legislative acts (Lombardy, Piedmont, and Veneto).

6. In **Poland,** a voluntary scheme is in place, based on the competence criteria provided for in national legislation. The certification requires (i) either vocational education or professional experience; (ii) training; and (iii) passing an exam. The training varies across the training centres, which have to be accredited by the Office of Technical Inspection. Once obtained, the certificate is valid for 5 years.

7. In **Spain,** no certification or accreditation is required for companies or individuals with a sufficient educational background (e.g. building engineers). Those who do not meet the minimum educational requirements must be accredited according to the *Reglamento de Instalaciones Térmicas en los Edificios*, requiring (i) training; (ii) professional experiences; and (iii) an exam. The Administration of the accreditation system is competence of regions and communities.

8. In the **UK,** a voluntary scheme is in place for companies designing, supplying, installing and commissioning microgeneration RES systems. The framework is managed by accredited bodies and based on competence criteria set in national standards. The accreditation includes both training (between 30 and 120 hours) and knowledge assessment. Electrician, plumbers, and heating engineers may accede to the scheme.

As the EU legislation does not only mandates the existence of these schemes, but not their mandatory application, this prevents the assessment of regulatory costs and benefits. Arguably, a scheme linked to incentives is still voluntary, but may create *de facto* market standards, and hence a barrier to market access. For this reason, companies, and especially SME, may be sensitive to the costs generated by the scheme. This is the case in France. Though the RGE is a second-level certification, hence relying on existing certifications rather than setting up a new scheme, and simplifications were introduced (e.g. in terms of single audits for multiple technologies and systems), costs may still be significant for smaller operators, amounting to approximately €1,000 for obtaining the qualification.

Information on costs was retrieved via interviews with installers and stakeholder associations. However, as in the case of the accreditation/certification of heating and cooling inspectors, given the diversity of schemes across MS, the number of data points are not sufficient to quantify costs. Information retrieved is as follows:

1. In Denmark, the voluntary certification costs about 10,000 DKK (~ € 1,350);
2. In Italy, the costs of training is not always borne by participants. In certain cases, European funds for professional development are used; most importantly, in a majority of cases, the costs of training will be sponsored, fully or partly, by the manufacturers of RES materials;
3. In the UK, one installer reported the following costs for certification: (i) € 2,500 for fees; (ii) € 2,500 for training costs; and (iii) €1,500 for the purchase of documentation, instruments, and software;
4. In Poland, one installer is planning to undertake a training for RES installation to broaden his scope of activity; training costs are estimated at €400.

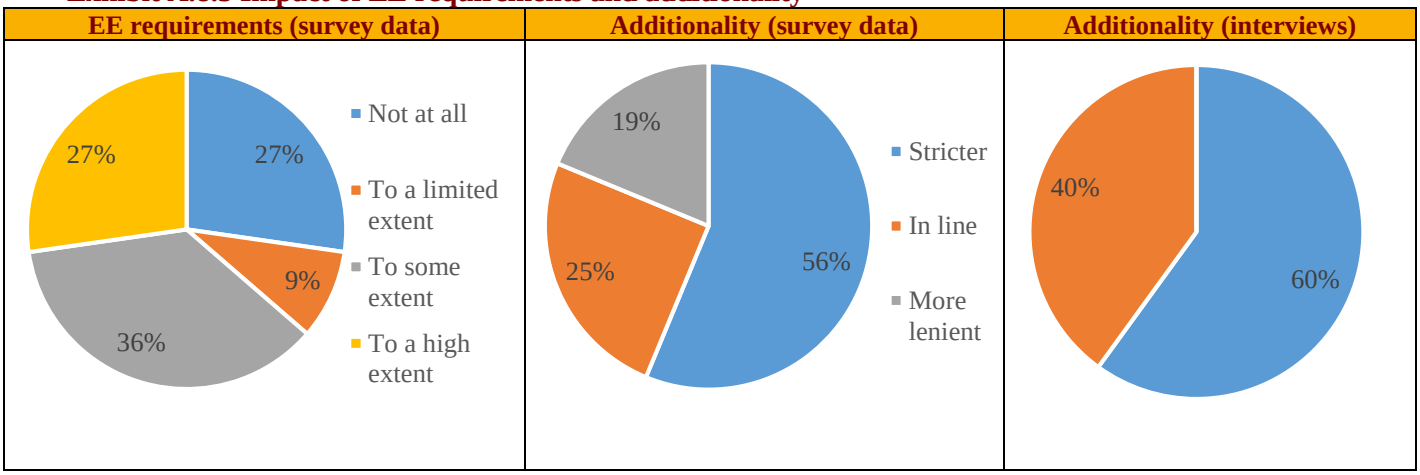
A.8.4 The Impact of Energy Efficiency Legislation on Construction Product Manufacturers

The present sub-section deals with the impacts of Energy Efficiency (EE) legislation on the upper part of the value chain, i.e. on construction product manufacturers. Manufacturing companies were surveyed and asked about their assessment of and the impacts originating from both EE requirements for construction products, systems and buildings, and EE support measures undertaken at national level. These impacts were not included in the analysis of the effects of the EPBD on construction companies, which is dealt with in Section A.6 above.

As already mentioned in Section A.3 above, EE measures are not relevant or equally relevant for all manufacturers. While in principle they all benefit from support measures targeted at supporting EE renovation, at this indirectly increases their market demand, only a subset of them is concerned with EE requirements, depending on the product scope. Ten out of 17 of the interviewed companies reported to be affected by EE requirements. Furthermore, questions on the impact of EE legislation were also included in the survey targeted at construction product associations and other stakeholders, with 16 respondents reporting an impact on their market segments. Here below, survey and interview data are presented.

Exhibit A.8.5 below shows the assessment of the product associations and other stakeholders on the impact of EE requirements on their sector.[320] About a quarter of respondents signalled a high impact, and more than one third signalled some impacts; to the contrary, slightly less than 40% of those respondents considered that EE requirements have no or limited impact on their activity. When asked about the MS where the impacts of EE requirements are larger, Germany is the most mentioned, followed by Austria, France, the Netherlands, and the UK. Both stakeholders and companies were also surveyed on the additionality of these requirements compared to business-as-usual market demand.[321] All companies considered the requirements in line or additional compared to market demand; in particular, a majority of them considered them as stricter. As for other stakeholders, about one fifth of the respondents considered that customers' demand for EE performance would actually be higher than mandatory level, but the prevailing majority considered them in line or stricter, and a majority considered them stricter. Based on these findings, EE requirements present a significant degree of additionality, and thus a low BAU factor, from the point of view of the construction product sector. One interviewed company qualified the situation by stating that *'regulation, including support measures, is the main driver of EE in buildings'.*

Exhibit A.8.5 Impact of EE requirements and additionality[322]

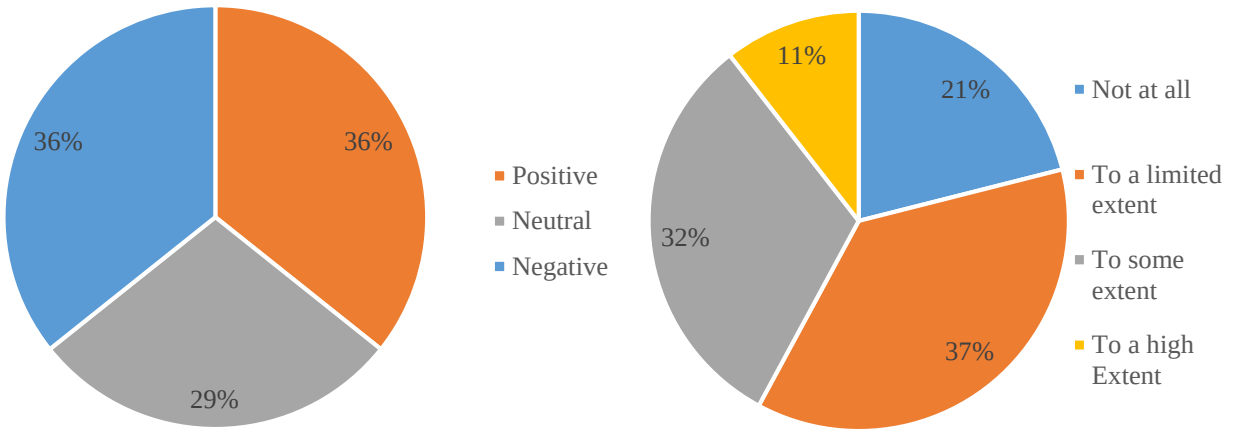


Source: Stakeholder survey (left, centre) and company interviews (right)

Stakeholders were also asked about the effect of the EE requirements on turnover and margins. Several cases could apply, in theory: EE requirements can increase manufacturers' profits by increasing demand for EE-performant construction products, increase the demand for substitute products, and thus negatively affect the turnover of a company or sector, or increase the costs of new buildings and renovation, and thus indirectly lower the demand for the whole sector. Exhibit A.8.6 (left) shows the empirical findings with respect to this aspect. On average, stakeholders are split almost equally over positive, neutral and negative answers, and in particular the positive and the negative camps have the same weight in the sample. The view of the companies interviewed – keeping in mind that only those working in a sector affected by EE requirement are among the respondents – are much more upbeat, signalling a positive effect on turnover. In the right side of Exhibit A.8.6 below, the results of the survey with stakeholders on whether EE support measures targeted at the construction sector trickled-up the value chain are shown. There, 58% of the sample consider the effect as none or limited, showing that support measures apparently matter less than EE requirements (see Exhibit A.8.5 above).

[320] As companies were specifically targeted to cover sectors affected by EE legislation, data from interviews show a prevailing majority of companies affected to a high extent and are thus not significant.
[321] Namely, in both the questionnaire and the survey respondents were asked whether in their opinion, EE mandatory requirements are stricter, more lenient, or in line with customers' typical demand.
[322] Number of respondents: (i) EE requirements (survey data): 22 respondents; (ii) additionality (survey data): 16 respondents; (iii) additionality (interviews): 10 respondents

Exhibit A.8.6 Impact of EE requirements on turnover (left); impact of EE support measures on product manufacturers (right)



Source: Stakeholder survey

Interviewed companies also cautioned against making a direct link between EE requirements and support measures and the turnover of product manufactures. The market for construction product is affected by many factors, including the general economic situation, and the relative bargaining power of customers, construction companies, and manufacturers. In particular, whether EE requirements translate not only into higher turnover, but also into higher margins for companies is unclear, as this depends on the competition on each market segment and the demand being sufficient to generate economies of scale over a long period. For this reason, respondents pointed out that the stability of the legal framework is an enabler of competitiveness for the construction product industry. Obviously, companies welcomed subsidies and funding for EE renovation provided at MS level, and underlined again that the best working schemes are those stable and long-term.

A.9 COST SAVINGS OF THE LATE PAYMENTS DIRECTIVE

A.9.1 Introduction

Directive 2011/7/EU on combating late payment in commercial transactions (hereafter 'LPD') aims at ***reducing payment delays as well as mitigating the negative effects of payments taking place later than agreed*** in contracts or laid down in the general commercial conditions. Late payments have a negative impact on liquidity and financial management of economic operators and constitute a substantial obstacle to the competitiveness and profitability of EU companies, especially when creditors are obliged to resort to external financial sources in order to cope with issues of accounting liquidity.[323] The scope of the LPD is limited to payments made as remuneration for commercial transactions, i.e. both business-to-business (B2B) and business-to-public authorities (PA2B) transactions,[324] leading to the delivery of goods or provision of services in exchange for remuneration.[325]

The LPD, in its current formulation, affects only the very last part of the time period covered by this Assignment, as it is a recast for reasons of clarity and rationalisation of the Directive 2000/35/EC[326] (hereafter 'LPD 2000') and its transposition was due by 16 March 2013. Whereas no regulatory costs for the construction sector are expected to result from this piece of legislation,[327] article 3, 4, 6 and 7 of the LPD are likely to generate benefits for companies operating in the construction value chain. In particular, according to the effects identified and validated in the previous phases of the Assignment, two benefit items can be identified in the LPD (both the old and recast version):

1. Financial savings (efficiency gains) linked to the setting of maximum and default payment terms in transactions with public entities and guidelines for transactions with private clients (articles 4, 5, and 7);
2. Substantive cost savings in the form of reduced litigation costs linked to automatic entitlement to late payment interest (articles 3 and 4).[328]

In what follows, these two benefit items are further investigated. First, the nature of the expected benefits is discussed by analysing the most relevant provisions of the Directive. Then, secondary data are used to provide an overview of the implementation of the LPD in selected MS as well as of trends in payment practices at national level. In particular, the analysis focuses on the impacts registered in the construction sector. These results are complemented by information collected via interviews with stakeholder associations and firms. More specifically, 40 companies (23 main contractors, one sub-contractor, seven companies operating at both tiers of the value chain and 9 professionals) across eight MS (Belgium, France, Germany, Italy, Spain, Poland, Romania, UK) have provided feedback on the application of the LPD in the country where they are based. In addition, 14 industry associations (11 national associations and 3 operating at the EU level) representing construction companies and professionals have shared their views on the main impacts of this Directive. Finally, concluding remarks are presented at the end of the Chapter.

A.9.2 Expected benefits and main differences compared to the LPD 2000

In light of the categorisation of regulatory benefits laid down in the Inception Report, the LPD is expected to deliver benefits to all the segments of the construction value chain in the form of 'efficiency gains'. In particular, ***the LPD is expected to lead to a more efficient use of financial resources in the construction sector*** by: i) reducing payment periods and/or late payments; ii) providing compensation for financial costs incurred by creditors as a result of late payments, including recovery costs; and iii) limiting abuse of freedom

[323] Recital 3, Directive 2011/7/EU.
[324] For the sake of consistency with other Commission documents on the same topic, the abbreviation PA2B is used in this Chapter of the report with regard to transactions between businesses and public authorities. This abbreviation takes into account the payment flow (from the public authority to the company) rather than the transaction itself, which goes from the business to the public authority.
[325] Article 1 and 2, Directive 2011/7/EU.
[326] Directive 2000/35/EC of the European Parliament and of the Council of 29 June 2000 on combating late payment in commercial transactions.
[327] This conclusion has been confirmed by VVA et al. (2015), Ex-post evaluation of Late Payment Directive, European Commission, hereinafter 'VVA study'.
[328] Cf. Revised First Progress Report, 15 January 2016, at p. 11.

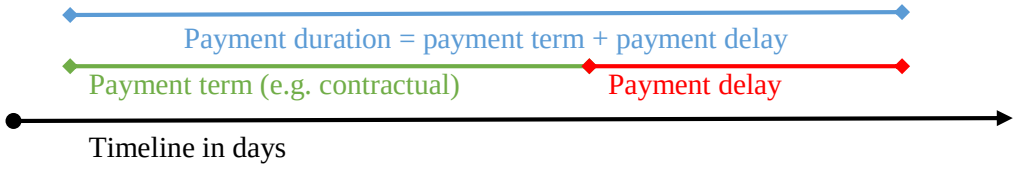
of contract to the disadvantage of creditors. In addition, insofar as the Directive increases legal certainty, cost savings may also result from a more limited recourse to litigation.

Compared to the LPD 2000, the new LPD introduced a higher interest rate for late payment (at least eight percentage points above the 'reference rate')[329] and set out a minimum compensation for recovery costs (lump sum of €40), regardless of higher claims for any additional costs exceeding such minimum amount.[330] These provisions aim at ensuring better compensation to creditors and further discouraging payment delays. Furthermore, the Directive holds as *per se* 'grossly unfair' to the creditor (and hence to be considered void or as giving rise to claim for damages) those terms or practices that exclude interest for late payment or compensation for recovery costs. The LPD also prohibits provisions which grossly deviate from good commercial practices or are inconsistent with the nature of the product or service.[331]

The most impactful novelty introduced by the new LPD, however***, is the setting of maximum time limits for the period of payment fixed in contracts with both private (unless explicitly provided otherwise and provided it is not grossly unfair) and public clients.*** According to Article 3 of the LPD, the payment term (see Exhibit A.9.1) fixed in B2B contracts should not exceed 60 days, unless expressly agreed otherwise and provided that a longer payment term is not grossly unfair to the creditor. Article 4 establishes a 30-day payment term for PA2B commercial transactions with few exceptions (e.g. contracts with public authorities carrying out economic activities of an industrial or commercial nature, or public authorities providing healthcare), unless expressly agreed otherwise and provided that it is objectively justified in the light of the particular nature or features of the contract. At any rate, the PA2B payment term cannot exceed 60 calendar days and, in order to avoid any 'lawful' delay, the date of receipt of the invoice cannot be subject to contractual agreements between the parties.

Exhibit A.9.1 – A definition of payment duration, payment term and payment delay

In this chapter, the following terminology is adopted:[332]
- Payment term is the time period set out in the contract and agreed by the two parties to pay a certain invoice;
- Payment delay is the period that goes from the expiration of the payment term to the moment in which the payment is received;
- Payment duration is the sum of payment term and payment delay.



A.9.3 Implementation in selected MS

The LPD has been transposed in all the selected MS within 2013, with the sole exception of Germany where the act has been transposed in 2014. All the surveyed countries chose a statutory interest for late payment equal to or higher than eight percentage points above the 'reference rate' and introduced a 40€ lump sum as a minimum compensation for recovery costs.[333] In no case the LPD applies retroactively, therefore, in principle, all the contracts concluded before the date in which the LPD was implemented in each country have to abide by the rules laid down by the LPD 2000 (see Exhibit A.9.2).

[329] Article 2, Directive 2011/7/EU.
[330] Article 6, Directive 2011/7/EU.
[331] Article 7, Directive 2011/7/EU.
[332] See VVA Study.
[333] In the UK the lump sum ranges between 40£ and 100£ based on the size of the due payment.

The maximum payment term fixed in PA2B contracts is equal to 30 days in all the sampled MS, although several countries envisaged exceptions for public entities operating in the health sector.[334] Ireland has adopted a prompt payment policy, to reduce the payment term by Public Bodies to their suppliers from 30 to 15 days. In July 2011, the governmental non-statutory requirement applicable to Central Government Departments was extended to all public bodies for combating the late payment culture. In the same vein, in 2010 UK government departments introduced prompt payment policies to pay 80% of supplier invoices within five days.[335]

Exhibit A.9.2 – LPD: Overview of the implementation in selected MS

		Belgium	Denmark	France	Germany	Ireland
Transposition		2013	2012	2012/2013	2014	2012
Entry into force		2013	2013	2013	2014	2012
Open infringement proceedings		No	No	No	No	No
Statutory interest rate		8.50%	8.05%	8.05%	8.17%	8.05%
Retroactive application		No	No	No	No	No
Minimum compensation for recovery costs		40 €	310 DKK	40 €	40 €	40 €
Maximum payment period in days fixed in the contract	*PA2B*[336]	30	30 (but up to 60 by executive order)	30 (50 health sector)	30 (but up to 60 based on contractual arrangements)	30 (but up to 60 based on contractual arrangements)
	B2B[337]	30 (but up to 60 or longer terms based on contractual arrangements)	30 (or longer period based on contractual arrangements)	30 (but negotiable up to 60; or 45 after the end of the month)	60 (or longer period based on contractual arrangements)	30 (but up to 60 or longer period based on contractual arrangements)
		Italy	**Poland**	**Romania**	**Spain**	**UK**
Transposition		2012	2013	2013	2013	2013
Entry into force		2012	2013	2013	2013	2013
Open infringement proceedings		Yes	No	No	Yes	No
Statutory interest rate		8.05%	8.00%	9.75%	8.05%	8.50%
Retroactive application		No	No	No	No	No
Minimum compensation for recovery costs		40 €	40 €	40 €	40 €	40£ to 100£
Maximum payment period in days fixed in the contract	*PA2B*[14]	30 (60 health sector)	30 (60 health sector)	30 (60 health sector)	30	30
	B2B[15]	30 (but up to 60 or longer period based on contractual arrangements)	60 (or longer period based on contractual arrangements)	30 (or longer period based on contractual arrangements)	30 (but up to 60 based on contractual arrangements)	30 (but up to 60 or longer period based on contractual arrangements)

Source: European Parliament;[338] Elvinger, Hoss and Prussen;[339] European Commission (http://ec.europa.eu/growth/smes/support/late-payment/); and VVA[340].

For B2B commercial transactions, payment terms should not exceed 30 days in all the MS under investigation with the exception of Germany and Poland where the maximum payment term is set by default at 60 days. Nonetheless, all the sampled countries leave room to extend such terms based on contractual arrangements. Interestingly, France explicitly allows paying B2B invoices 45 days after the end of the month in which they

[334] According to the Italian National Builders Association (ANCE), in Italy the payment term for PA2B contracts in the construction sector is equal to 60 days. This is probably due to the required procedures of acceptance or verification that add 30 days on top of the 30-day standard payment term.
[335] For further details, see National Audit Office (2015), Paying government suppliers on time.
[336] In Germany and Ireland a payment term up to 60 days can be negotiated only if expressly agreed by the parties in the contract and provided that it is not grossly unfair to the creditor.
[337] A payment terms exceeding 60 days can be negotiated in Belgium, Germany, Ireland, Italy and Poland only if expressly agreed by the parties in the contract and provided it is not grossly unfair to the creditor. In Denmark and Romania any payment term exceeding 30 days is subject to the previous conditions. In UK, express approval apart, payment terms exceeding 60 days must be fair to both businesses.
[338] European Parliament (2015), State of play on the transposition of Directive 2011/7/EU on late payments in commercial transactions, Briefing - Implementation in action.
[339] Elvinger, Hoss and Prussen (2014), Late payment in western Europe: Comparative study.
[340] VVA study.

are received and this could entail a maximum overall payment term up to 75 days, provided it is expressly agreed by the creditor and not grossly unfair to the creditor.

Notwithstanding the formal transposition of the LPD, infringement proceedings against Italy and Spain for bad application are still open. As shown below, these two MS are lagging behind in terms of overall payment duration and, despite efforts and improvements made in the past years, have not managed yet in effectively combating late payment up to the standards required by the Directive.

A.9.4 Data analysis

While payment terms are directly impacted by the provisions laid down in the LPD, payment delays and the overall payment duration are affected to a greater extent by the general commercial practices adopted in specific sectors and within a given country. National commercial practices play a more central role in those sectors, such as constructions, that are less open to international competition and where suppliers and clients are usually local.[341] In addition, the overall duration of payments largely depends on the relative bargaining power of the interested party vis-à-vis its clients and suppliers.[342] In this context, the impacts of the LPD on the construction sector cannot be assessed only via a set of interviews with industry players and an in-depth analysis of the available secondary data is a good complement to identify general trends registered at national level. In what follows, an overview of payment practices in the surveyed countries is provided. Where possible, those practices that are prevalent in the construction sector are presented.

Late payment in selected MS

This section presents a brief overview payment terms, delays and durations in the ten MS covered by this Study. Relevant data have been gathered from yearly reports published by Intrum Justitia[343] and refer to the entire economy. A focus on the construction sector is provided in next section.

In 2014, the average payment term fixed in B2B contracts was shorter than 60 days in all the sampled MS but Italy, where on average private parties agreed on a 65-day term. Interestingly, between 2012 and 2013 Spain managed in reducing payment terms from 70 to 60 days in compliance with the LPD. In Denmark, where the maximum payment term has been officially set at 30 calendar days, B2B contracts usually include payment terms of only 25 days. All the countries experienced an improvement in contractual terms between 2009 and 2014 with the exception of Denmark (where the 25-day term was the standard also in 2009).[344]

The overall picture for payment terms in PA2B contracts is less encouraging. In 2014, in four countries (Belgium, France, Italy and Spain) payment terms contractually agreed upon were still longer than 30 calendar days and such countries registered only marginal improvements in payment terms after transposing the LPD. In particular, in 2014, in Spain, public authorities stipulated average payment terms of 75 days; in Italy, instead the average term of payment in PA2B contracts was equal to 80 days.

Over the period 2009-2014, payment delays in B2B commercial transactions went from an average of 11 days in Denmark and 12 in Germany to more than 25 days in Spain, Ireland and Italy. In some MS larger delays were experienced in 2014 when compared to 2009 (+12% in Belgium, +32% in Ireland, +38% in Italy and + 14% in Romania on a shorter time span). Conversely, in Denmark, France, Germany, Spain and the UK the transposition of the LPD was followed by a reduction in payment delays.

Whereas in Denmark, Germany and Poland delays in payments made by public authorities are on average comparable to those registered in commercial transactions between private parties, and whereas in Ireland PA2B contracts are paid substantially faster than B2B ones, public authorities are the 'slowest payers' in the remaining countries. In particular, in Italy and Spain PA2B contracts are paid even 80 days after the

[341] For further details, see Euler Hermes (2012), Payment periods in Europe: wide gaps.
[342] See Fabbri D. & Klapper F.L. (2013), Bargaining Power and Trade Credit, working paper available at: http://www.cass.city.ac.uk/_media/internals/easy-edit-suite/wym?a=179726
[343] Intrum Justitia (2009, 2010, 2011, 2012, 2013, 2014), European Payment Index.
[344] As regards Romania, data before 2012 are not available.

contractually agreed terms and payment delays deteriorated over the period 2009-2014 (+63% in Italy and +55% in Spain).

From a business perspective what does really matter in terms of financial management is the overall payment duration rather than payment terms and delays.[345] This is particularly true for companies that do not exercise their right to claim compensation or interest in the event of late payment, which is the case for the vast majority of companies based in the EU.[346] In 2014, in the majority of surveyed MS, the duration of payments in B2B commercial transactions was lower than 60 days and decreasing trends have been registered over the period under investigation. Again, Italy and Spain represent an exception. In Spain, where the LPD seems to have led to some improvements, in 2014 the average payment duration was equal to 83 days. In Italy, private parties pay their bills on average in more than 3 months and the situation has deteriorated over time (+7% between 2009 and 2014).

Again, when it comes to PA2B contracts, Italy and Spain confirm their negative performance, with 165 days in Italy and 154 days in Spain in 2014 respectively. In both cases, the payment duration increased between 2009 and 2014; nonetheless, a decreasing trend has been registered after the transposition of the LPD. To be sure, the targets set by this Directive for PA2B payments are far to be achieved in the majority of surveyed countries. In fact, according to 2014 figures, in no country public authorities pay within 30 days, more than 40 days are required in the UK, Ireland and Romania, 59 days in France and almost 70 days in Belgium.

Late payment in the construction sector in selected MS

A picture of ***the average duration of payments made by clients of construction companies*** is presented in Exhibit A.9.3.

First, it is apparent that, in the sampled countries, ***payments in the construction sector take usually longer than the average B2B and PA2B commercial transaction***. This evidence is confirmed by all the relevant literature on the topic.[347] From a methodological standpoint, it is worth remarking that while national data for the construction sector provided by Euler Hermes[348] (see part A of Exhibit 9.3) do not allow a distinction between B2B and PA2B transactions, cross-sectoral data gathered by Intrum Justitia[349] (and discussed above) always separate payments made by private clients from those made by public authorities. Hence, to allow a comparison between constructions and other sectors, it is necessary to rely upon a weighted average of Intrum Justitia figures. More specifically, this weighted average (see part B of Exhibit A.9.3) provides an estimate of the potential payment duration in the construction sector under the assumption that the same payment practices adopted in other sectors would apply also to all the commercial transactions involving construction companies.

Second, ***the transposition of the LPD seems to have generated a general reduction in payment duration in the construction sector between 2010 and 2014***. Such a reduction has been more marked than in other sectors of the economy. In this respect, ***Germany and UK represent exceptions*** as the calendar days required to obtain a payment grew. This result is in line with comments made by some stakeholders. Reportedly, some 'good payers' in countries where rules for the construction sector were stricter than those introduced by the LPD have extended their payment terms in contracts involving construction companies toward the maximum time limit allowed by the Directive. For instance, even though the UK Construction Act set a default 17-day payment term, parties tend to negotiate a time limit closer to that envisaged by the LPD.

[345] Please note that the 'payment duration' is defined as the sum of the (contractual) 'payment term' and the 'payment delay'.
[346] See VVA Study.
[347] See *inter alia* Cribis D&B (2014), Payment Study 2014; Euler Hermes (2012), Payment periods in Europe: wide gaps; and Intrum Justitia (2014), European Payment Index 2014 - Industry White Paper.
[348] See Euler Hermes (2012), Payment periods in Europe: wide gaps and Euler Hermes (2015), Payment behaviour: Who's paying the piper?
[349] Intrum Justitia (2009, 2010, 2011, 2012, 2013, 2014), European Payment Index.

Exhibit A.9.3 – Average payment duration (in days) in the construction sector and difference with the whole economy

	A. Construction (B2B & PA2B)			B. National payment practices (B2B & PA2B weighted average*)			Construction - Whole economy (A-B)	
	2010	2014	Var. 2010-2014	2010	2014	Var. 2010-2014	2010	2014
Belgium	82	65	-17	58	54	-4	24	11
Denmark	57	n.a.	n.a.	37	34	-3	20	n.a.
France	87	66	-21	61	56	-5	26	10
Germany	41	45	+4	35	34	-1	6	11
Ireland	n.a.	n.a.	n.a.	60	55	-5	n.a.	n.a.
Italy	127	102	-25	103	100	-3	24	2
Poland	n.a.	75	n.a.	35	38	+3	n.a.	37
Romania	n.a.	n.a.	n.a.	n.a.	36	n.a.	n.a.	n.a.
Spain	174	87	-87	103	89	-14	71	-2
United Kingdom	33	55	+22	50	42	-8	-17	13

*Note: *Weighted average based on the estimate share of construction of public buildings over total construction of buildings.*[350]
Source: Euler Hermes (various years) for the construction sector and Intrum Justitia (various years) for overall national practices.

The decreasing trend in payment duration is confirmed by the 2014 Industry White Paper[351] published by Intrum Justitia. In fact, in 2014, 51% of the payments were received by construction companies within 30 days (see Exhibit A.9.4). This constitutes the best performance over the period 2009-2014.

Exhibit A.9.4 – Average payment duration (in days) in the construction sector

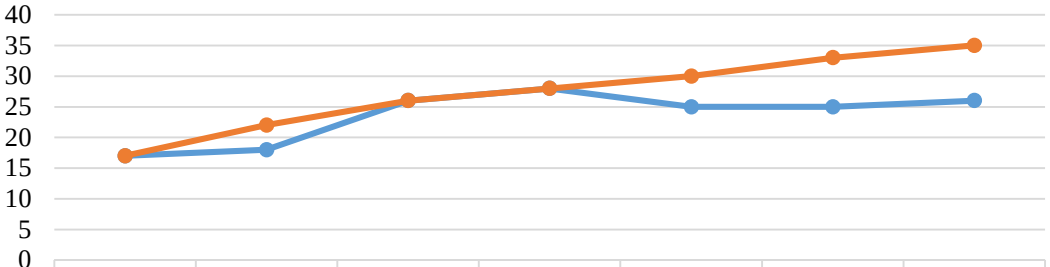
	Payments received		
	% up to 30d	% 31-90d	% >90d
2008	57	30	13
2009	48	34	18
2010	47	41	12
2011	46	40	14
2012	50	38	12
2013	49	31	20
2014	51	32	17

Note: Sampled countries include all EU countries (with the exception of Luxembourg and Malta) and 6 third countries (Bosnia-Herzegovina, Norway, Russia, Serbia, Switzerland and Turkey).
Source: Intrum Justitia Industry White Paper (2014).

Notwithstanding improvement in payment duration, ***payment delays in the construction sector have increased between 2008 and 2014*** both in B2B and PA2B commercial transactions (+53% and +106%, see Exhibit A.9.5). This is consistent with feedback from several stakeholders stating that while the LPD had some impact on reducing payment terms (with few exceptions mentioned above), payment delays are still an issue. More specifically, ***reductions in payment terms have been partially offset by longer delays***. As a result of late payment, construction operators surveyed by Intrum Justitia have reported: liquidity problems (65%); lower growth rate (64%); fewer hiring (49%); and dismissal of employees (39%).

[350] Elaboration on Eurostat Structural Business Statistics and FIEC (2014), Construction activity in Europe.
[351] Intrum Justitia (2014), European Payment Index 2014 - Industry White Paper. Please note that Intrum Justitia data for Europe cover 26 EU MS and 6 additional third countries.

Exhibit A.9.5 – Average payment delays (in days) in the construction sector in Europe*



	2008	2009	2010	2011	2012	2013	2014
B2B	17	18	26	28	25	25	26
B2PA	17	22	26	28	30	33	35

Note: Sampled countries include all EU countries (with the exception of Luxembourg and Malta) and 6 third countries (Bosnia-Herzegovina, Norway, Russia, Serbia, Switzerland and Turkey).
Source: Intrum Justitia Industry White Paper (2014).

Interestingly, the share of debts written off by construction companies went from 3.8% in 2008 to 4% in 2014 (Exhibit A.9.6) and is considerably higher than in other sectors (only education and professional services score worse than constructions). In this respect, ***construction is a rather problematic sector when it comes to payment practices*** due to the weak financial position of some players and ***this can explain part of the difficulties encountered by policy makers in achieving effective solutions to late payments***.

Exhibit A.9.6 – Bad debt loss in the construction sector

	%
2008	3.8
2009	3.8
2010	3.4
2011	3.6
2012	3.7
2013	3.9
2014	4

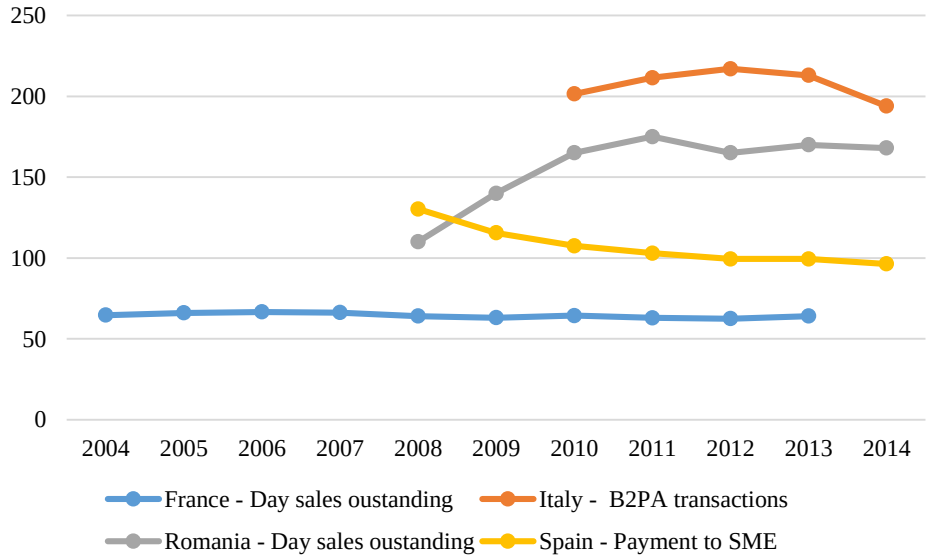
Note: Sampled countries include all EU countries (with the exception of Luxembourg and Malta) and 6 third countries (Bosnia-Herzegovina, Norway, Russia, Serbia, Switzerland and Turkey).
Source: Intrum Justitia Industry White Paper (2014).

In what follows, to complement the main findings presented above, an analysis of national statistical sources on payment terms and delays in the construction sector is performed. Unfortunately, such data are scant and available only for a sub-sample of MS. For instance, Banque de France estimates on a yearly basis the so-called 'days sales outstanding',[352] which are a proxy (based on companies' financials) for the actual duration of payments, for several economic sectors. According to these data, ***in France the average time taken by construction companies to collect their revenues experienced a slight reduction over the period 2000-2013 (-9%) moving from 70 days to 64 days*** (see Exhibit A.9.7); nonetheless, between 2012 and 2013 such time period increased by one day. This is consistent with figures provided above for the construction sector. The same indicator is computed for Romania where 'days sales outstanding' went from 110 days in 2008 to 168 in 2014 (+53%), with a peak of 175 days in 2011. Interestingly**, *in Romania payment duration is substantially longer than average duration for the entire economy*** that in 2014 was equal to 46 days in PA2B transactions and 36 in B2B.[353] In Spain, the average duration of payments to construction SME (which represent a sub-set of the overall payments) decreased by 26% from 2008 to 2014. ***The transposition of the LPD seems not to have led to major improvements for Spanish SME***, although a 3-day reduction in the overall payment duration

[352] In accounting terms, 'days sale outstanding' are usually defined as the ratio of accounts receivable and sales (including taxes) multiplied by 360.
[353] Intrum Justitia (2014), European Payment Index.

has been registered between 2013 and 2014. This result is different from the one provided in Exhibit A.9.3 and can be explained if one considers that SMEs usually do not apply interest for late payment, as they fear of endangering future commercial relations, especially vis-à-vis large clients. Interestingly, according to a 2012 survey, the construction industry is the sector in Spain that showed the highest percentage of firms paying within a period of over 120 days.[354] Conversely, ***the LPD has been more impactful in Italy where the payment duration in PA2B transactions have experienced a substantial reduction between 2012 and 2014*** (-23 days) after growing by 15 days from 2010 to 2012. This trend is generally in line with the one registered for PA2B transaction in the entire economy.[355] The main driver for improvements seems to be the reduction of payment terms from 75 days to 60 days (including procedures for accreditation and verification). At any rate, in 2014 more than 80% of the Italian construction companies reported problems in getting paid by public authorities, which confirmed to be the 'slowest payer' also in the construction sector. As a result of late payment, 55% of Italian construction companies are obliged to delay payments to their suppliers, more than 40% have to reduce investments and some 30% dismiss employees.[356]

Exhibit A.9.7 – Average payment duration (in days) in the construction sector in selected MS



Source: Banque de France (2014), Dossier statistique: les délais de paiement des entreprises de 2000 à 2013; CEPYME (2014, 2015), Boletin de morosidad y financiacion empresarial; Conface (2016), Analiza sectorului de lucrari de constructie a cladirilor rezidentiale si nerezidentiale, Sector Report; and ANCE (various years) Osservatorio congiunturale sull'industria delle costruzioni.

Interestingly, ***according to some stakeholders, statistics on average payment duration may even provide a too optimistic picture***. For instance, in Belgium the reduction in payment duration seems to be entirely offset by acceptance or verification procedures that may add 30 days on top of payment terms set by the LPD.[357] Similarly, in Italy, payments in PA2B transactions are often delayed by possibly unfair requests made by clients to postpone the issuance of invoice or the so-called '*stato di avanzamento dei lavori'*, an official document that trigger payments by public authorities.[358] In UK, a considerable share of payments is withheld in retentions beyond the agreed contractual terms and is overdue for release.[359] In addition, on a more general note, companies interviewed for this Study argued that the LPD had a very limited impact on payment practices. In fact, when it comes to PA2B transactions, the majority of respondents have perceived no change (30%) or even a deterioration (25%) in payment duration since the introduction of the LPD; only 10% have noticed an improvement.[360] It is worth stressing that in Germany and UK, where payment terms in the construction sector were extended after the enactment of the LPD, no interviewee has indicated an

[354] See VVA Study,
[355] Intrum Justitia (2009, 2010, 2011, 2012, 2013, 2014), European Payment Index.
[356] See ANCE (2014 and 2015) Osservatorio congiunturale sull'industria delle costruzioni.
[357] See Confederation Construction (2014), La construction et l'Europe, Rapport Annuel.
[358] See ANCE (2015) Osservatorio congiunturale sull'industria delle costruzioni.
[359] See NSCC and FMB (2014), Credit Where Credit Isn't Due - The Results of the NSCC & FMB Payment Survey 2014.
[360] Please note that 35% of respondents could not provide an answer as they did not work with public clients.

improvement in payment duration. As regards B2B transactions, general trends in payment practices seem to be slightly better. In this respect, the percentage of interviewees noticing an improvement doubles (20%); nevertheless, still the majority of respondents perceived either no change (58 %) or a deterioration (17 %) of the situation after the introduction of the LPD.[361]

Estimated benefits generated by the LPD in the construction sector

Late payments generate financial costs to companies insofar as they need to find alternative sources of liquidity to pay their bills while waiting for payments from their clients. To cope with accounting liquidity issues, companies can: i) resort to internal cash reserves (i.e. the amount of money they are able to keep on hand in their bank account); ii) delay payments to their suppliers (especially if they have a relatively stronger bargaining power); and iii) seek access to finance, usually in the form of overdrafts (i.e. loan arrangements under which banks provide short term credit up to a maximum amount).

While internal cash reserves are generally a very limited source of liquidity for companies, all the available evidence shows that construction companies are on average in a very weak bargaining position vis-à-vis their suppliers.[362] In a nutshell, this implies that they have to pay their suppliers before they are able to get paid by their clients and that bank credit is their main source of emergency liquidity. Therefore, any marginal reduction in payment delays is reflected in lower interest to be paid on short-term loans. In the same vein, ***any increase in payment delays comes at a financial cost***.

Against this background, Exhibit A.9.8 provides an estimate of the financial cost savings generated by the reduction in payment duration in the construction sector between 2010 and 2014 registered in selected MS representing the lion's share of the EU construction sector turnover.[363] The following conservative assumptions are adopted: i) only payments received after 90 days are funded via bank credit, i.e. 17% of the overall payment in 2014 (see Exhibit A.9.6); ii) construction companies have access to finance at the average 2014 national interest rate for revolving loans and overdrafts to non-financial companies;[364] iii) any reduction/increase in the duration of payments leads to financial savings/costs***. As a result, the experienced decrease in the duration of payments led to financial costs savings of €160 million***. Interestingly, in spite of the very low interest rate applied in 2014 to short-term bank credit***, a one-day reduction in payment duration corresponded to savings for some €17 million for the sector.***[365] In Belgium, France, Italy and Spain faster payments to construction companies led to substantial benefits (i.e. lower financial costs). It is no surprise that in Germany and UK the deterioration of payment practices, which several stakeholders have attributed to the fact that payment terms spelled out by the LPD were less stringent than those already applied at national level, generated additional costs to construction companies.

[361] Please note that 5% of respondents could not provide an answer as they did not work with private clients.
[362] For further details, see Euler Hermes (2012), Payment periods in Europe: wide gaps and Observatoire des délais de paiement (various years), Rapport annuel de l'observatoire des délais de paiement, Banque de France.
[363] In 2014 the overall construction turnover in Belgium, France, Germany, Italy, Spain and the UK represented more than 70% of the total EU turnover in the sector (Eurostat Structural Business Statistics).
[364] For Belgium and UK the national average 2014 interest rate for revolving loans and overdrafts to non-financial companies is not available. Savings are calculated using the national average 2014 interest rate for revolving loans and overdrafts, convenience and extended credit card debt to non-financial companies.
[365] Based on an EU average interest rate for revolving loans and overdrafts to non-financial companies of 3.83%.

Exhibit A.9.8 – Estimated financial cost savings for the construction sector

	Variation in payment duration in the construction sector (2010-2014, days)	Payment received later than 90 days* (2014, €mln)	Financial cost savings** (2014, €mln)
Belgium	-17	8,962.2	-24
France	-21	40,935.9	-45
Germany	4	35,170.7	18
Italy	-25	23,967.5	-83
Spain	-87	14,301.2	-104
United Kingdom	22	37,299.4	78
		Total	-160

*Note: *17% of the total turnover as per Exhibit A.9.6; ** For France, Germany, Italy and Spain: simple interest at a rate equal to the annual interest rate for revolving loans and overdrafts denominated in Euro to non-financial companies; for Belgium and UK: simple interest at a rate equal to the annual interest rate for revolving loans and overdrafts, convenience and extended credit card debt denominated in Euro to non-financial companies.*[366]

Source: Euler Hermes (various years) and Eurostat Structural Business Statistics.

The assessment of attribution of these benefits to the LPD, and thus to the EU framework, requires a blurred response. In fact, it is very difficult to isolate the impact of this Directive on changes in payment behaviour from external factors such as the financial crisis and the prevalent business culture. In some cases, the improvement in payment terms resulted from national efforts which preceded the implementation, and even approval, of the LPD. In some other cases, concerted national efforts have been brought about by the need to comply with the Directive. All these factors are likely interlinked and isolating them with certainty is not possible.

As regards countries in which late payments were and are a major issues in Spain decreasing trends started even before 2011: for instance between 2008 and 2011, payment duration for SME in the construction sector went from 130 to 103 days, that is -21% (see Exhibit A.9.7 above). As mentioned, the revision of the LPD, the presentation of the Commission proposal and the following discussion may have had an expressive (symbolic) function, yet this is an insufficient ground to attribute a significant share of benefits registered in Spain to the EU legislation. At the other side of the spectrum, in Italy a decrease in payment terms has only started after the implementation of the LPD, in 2013. In the Italian case, not only the LPD itself, but also other European Commission actions, such as the subsequent opening of infringement procedures,[367] the flexibility granted in how to compute payment of the stock of late debts in public deficit statistics,[368] and follow-up close monitoring of both payment duration and payment practices by public authorities,[369] are considered as crucial determinants of the benefits for the construction sector. For Belgium, clear evidences are not available to verify whether the reduction in the payment duration for the construction sector between 2010 and 2014 took place before or after the implementation of the LPD. However, information specific to the construction industry on the timeliness of payments and on the share of payments delayed by 30, 60 or more days show no significant variation from 2013 onwards, pointing out to a less than full role played by EU legislation.[370] A mixed case is that of France, whereas Euler Hermes data suggest a reduction on payment duration for the construction sector, which brought it closely in line with the LPD limits, while national data, though not fully comparable, suggest a stable trend and largely in line with the LPD requirements over the whole period. As in the case of Belgium, the role of the LPD is thus estimated to be limited. In Germany and the UK, to the contrary, payment times have increased, though remaining within the limits set by the LPD. On one side, the LPD does not prevent national legislation and private parties to agree on shorter payment duration, and as such would seem not to have triggered increase in payment duration. However, stakeholders confirmed that the worsening of the situation is partly attributable to the changes in legislation followed the implementation of the LPD: even though they did not compel parties

[366] See European Central Bank Statistical Data Warehouse.

[367] Cf. Late payments: Commission seeks clarifications from Italy and Slovakia, Brussels, 18.062014, available at: http://europa.eu/rapid/press-release_IP-14-689_en.htm (last accessed on March, 2016).

[368] Cf. Euractive, *Direttiva pagamenti: Ue apre a Italia per saldo debiti pregressi*, available at: http://www.euractiv.it/it/news/norme/6830-direttiva-pagamenti-ue-apre-a-italia-per-saldo-debiti-pregressi-.html (last accessed on March, 2016).

[369] As reported by stakeholders.

[370] Graydon (2015), Comportement de paiement, Q3 2015.

to lengthen payment terms, they acted as a focal point, thus contributing to the increase. As in the case of Spain, the LPD have played an expressive role, hence the role is quite limited compared to other situations. Attribution of costs and benefits to the EU framework is shown below in Exhibit A.9.9.

Exhibit A.9.9 – Estimated regulatory costs and benefits attributed to the EU framework

	Total cost savings (2014, €mln)	Share of attribution	EU cost savings (2014, €mln)
Belgium	-24	50%	-12
France	-45	50%	-22.5
Germany	18	15%	2.7
Italy	-83	100%	-83
Spain	-104	15%	-15.6
United Kingdom	78	15%	11.7
		Total	**-118.7**

Litigation costs. As mentioned, the LPD is expected to increase legal certainty, thus reducing the recourse to litigation. Nonetheless, while still possible in principle, such hypothesis cannot be confirmed through available secondary data neither for the general economy nor for the construction sector. In this respect, data collected via interviews to construction companies provides an interesting picture.

While the majority of the interviewees (57%) is aware that creditors are automatically entitled to interest for late payment, companies with a larger yearly turnover (above €1 million) are on average more informed than smaller companies about the rights enshrined in the LPD. At any rate, 80% of the respondents have never taken clients to court in order to receive interest on late payment. In particular, only eight construction companies (five main contractors and three companies operating at both tiers of the value chain) have declared to resort to litigation in case of late payment in specific circumstances and estimated the average cost of a legal proceeding in the area of €3,000 to €15,000.

More generally, several respondents stressed that the limited recourse to litigation is not a consequence of the LPD, rather it is a general business practice motivated by the need to keep good relationships with clients. In addition, some companies prefer to hedge their credits via insurance contracts or 'escrow' accounts, especially when it comes to private clients. This approach is considered the most efficient as, besides being costly, lawsuits usually take several years before being adjudicated. This conclusion is confirmed by the Irish case. In fact, Ireland introduced in 2013 a voluntary adjudication procedure for late payment disputes regarding construction contracts with a value in excess of €10,000. This eventually takes place prior to the standard judicial procedure and it is intended to facilitate the enforcement of the late payment legislation by reducing the time and costs of debt recovery.[371] Given these empirical findings, no cost savings concerning reduction of litigation costs can be attributed to the LPD.

A.9.5 Concluding remarks

Available evidence suggests a general reduction in payment duration in the construction sector between 2010 and 2014 that can be only partially attributed to the LPD. In this respect, Germany and UK represent a major exception as an extension of payment terms was registered. However, payment duration in the construction sector is still longer than in other sectors. In addition, payment delays have increased between 2008 and 2014 in both B2B and PA2B commercial transactions and longer delays partially offset improvements in payment terms. Interestingly, stakeholders' view is less optimistic. Reportedly, the impact of the LPD on payment practices has been quite limited and several issues still need to be tackled to combat late payment.

Late payments are proven particularly detrimental for SME due to their limited bargaining power coupled with the typical difficulties they experience when seeking access to finance to cope with issues of accounting liquidity. In this respect, some of the stakeholders interviewed for this study explained that SME operating in the construction sector are rarely compensated for costs borne as a result of payment delays. In particular, SME

[371] See Construction Contracts Act 2013, available at: http://www.irishstatutebook.ie/eli/2013/act/34/enacted/en/pdf.

usually do not apply interest to the debtor in fear of endangering future commercial relations. Interestingly, the interest rate that should be applied to late payment (at least eight percentage points above the 'reference rate') is substantially higher than average short-term interest rate currently applied across the EU); hence, an automatic application of the relevant LPD provisions would certainly discourage late payment. Other stakeholders have also stressed that those companies that operate as sub-contractors (generally SME) are in the worst position within the construction value chain insofar as they are paid with substantial delays by main contractors (usually large companies) whereas they need to pay their suppliers in compliance with payment terms set by the LPD.[372] These conclusions have been confirmed by several interviewees operating at different level of the construction value chain.[373]

At any rate, many questions are still open and it is too early to assess the full potential of the LPD for two main reasons. First, as in all MS this Directive applies only to contracts signed after 16 March 2013, a large part of the impacts is still not registered in official statistics. This is particularly true for the construction sector where buildings are 'delivered' several months after signing a contract. Second, the general economic situation is proven to be a key driver for late payments in both B2B and PA2B transactions and, somehow, more impactful than any legislative instrument whether national or European.[374] In this respect, the unparalleled economic downturn over the past years and the insolvency of many key players have worsened the issue of late or non-payment, especially in the construction sector where large investment are required.

[372] See NSCC and FMB (2014), Credit Where Credit Isn't Due - The Results of the NSCC & FMB Payment Survey 2014; and FFB (2015), Évolution des délais de paiement dans le bâtiment.
[373] For instance, several large companies operating as main contractors have explained that they are able to deal with late payments by delaying, in turn, payments to their sub-contractors. On the contrary, some small construction companies have reported that they tend to pay their suppliers in cash in order to get discounts on construction products and materials.
[374] See VVA Study.

PART B – EX POST EVALUATION
COHERENCE

B.1 INTRODUCTION

The list of legal instruments identified for the purpose of this fitness check can be divided into three main blocks or groups, of which the first block (i.e. section B.2) comprehends three instruments which establish requirements for construction products, either as product requirements or as labelling requirements, namely the Construction Product Regulation (EU) 305/2011 (CPR), the Eco-Design Directive 2009/125/EC (EDD) and the Energy Labelling Directive 2010/30/EU (ELD). The other instruments covered by the coherence analysis have been similarly grouped together and section B.3 assesses the coherence between the energy efficiency legislation that is applicable to the construction sector, in particular the Energy Efficiency Directive 2012/27/EU (EED), the Energy Performance in Buildings Directive 2010/31/EU (EPBD) and the Renewable Energy Sources Directive 2009/28/EC (RESD). Section B.4 analyses the coherence of legislation applicable to the provision of services in the construction sector, in particular Directive 2006/123/EC on services in the internal market (SD), Directive 2005/36/EC on the mutual recognition of professional qualifications (PQD) and Directive 2011/7/EU on combating late payment in commercial transactions (LPD). Finally, section B.5 concentrates on any potential coherence issues between EU legal instruments that were grouped into different blocks. In particular, the EPBD, EED, EDD and ELD are taken together for the coherence analysis, as are the EPBD and CPR, and also the EED, EPBD, RESD and PQD.

Each section focuses on the scope of the EU legal instruments, the main terms and definitions involved, and the substantial requirements which are common to the group of legal acts. This analysis is then followed by a conclusion. The main sources for the coherence analysis include the implementation reports prepared by the European Commission, the preparatory studies of the respective Directives and the evaluations and impact assessments of the individual instruments. Further, interviews with stakeholders at the EU level and in the Member States, conducted in the context of this fitness check, have provided some (albeit not abundant) detail on the coherence of the legal framework applicable to the construction sector.375 A survey of manufacturers and their trade association, also conducted in the context of this study, provided additional information. Finally, our research was further enriched by policy documents, position papers, the results from open public consultations and other (legal) literature.

[375] The number of interviewed firms that have reported some information on coherence in Part F of the questionnaire (or part 2.2. for manufacturers), is as follows: 12 out of 17 manufacturers; 4 out of 16 professionals; 23 out of 36 construction companies; and 6 out of 8 installers. The provided information was, however, mostly not detailed enough to draw any meaningful conclusions.

B.2 CONSTRUCTION-RELATED EU LEGAL INSTRUMENTS ESTABLISHING PRODUCT OR LABELLING REQUIREMENTS: CPR, EDD AND ELD

The short list of legal instruments identified for the purpose of this fitness check comprehend three instruments which establish requirements for construction products, either as product requirements or as labelling requirements, namely the Construction Product Regulation (EU) 305/2011 (CPR), Eco-Design Directive 2009/125/EC (EDD) and the Energy Labelling Directive 2010/30/EU (ELD). These three instruments, to the extent to which they apply to products used in the construction sector, will therefore be analysed together for the purpose of the coherence analysis.

B.2.1 Objectives of the CPR, EDD and ELD

The Construction Product Regulation (CPR) lays down the conditions for the placing or making available on the market of construction products, by establishing harmonised rules on how to express the performance of construction products in relation to their essential characteristics and on the affixing of the CE marking.[376] In this manner, it aims at ensuring that reliable information on the performance of a product from different manufacturers in different countries is available to consumers, public authorities and professionals.[377] This should contribute to the removal of barriers in the internal market by creating a level-playing field for construction products entering the market. The 2011 CPR enhances the framework established by its predecessor, the Construction Products Directive (CPD). The new CPR ensures that a product bearing the CE marking must be allowed on the EU market and no national public authority is allowed to ask for additional markings, information or testing of the product. Through the CE marking, a manufacturer indicates that the product he/she is placing on the market has been tested based on the basis of the applicable harmonised technical specifications (harmonised European standards (hENs) or European Assessment Document (EADs)) and is in compliance with applicable EU law.

The EDD establishes a framework for the setting of mandatory requirements for both energy-using and energy-related products (i.e. products that do not use energy but have an impact on energy consumption). The objective of the EDD is dual. While, similarly to the CPR aiming to eliminate barriers in the EU internal market because of differing national eco-design requirements, the EDD also aims at reducing the overall negative impact of products placed on the EU market in the perspective of sustainable development. Many energy-related products have a significant potential for being improved in order to reduce environmental impacts and to achieve energy savings through better design. The EDD is a framework directive, and the ecodesign requirements are set through Commission regulations for specific product categories. The EDD aims at ensuring that such improvements are introduced in a coherent manner across the EU market.

The ELD complements the EDD by setting a framework for the labelling and the provision of information regarding energy consumption. Initially targeted at household appliances, the ELD is now applicable to a wide range of energy-related products. It aims particularly at informing end-users with a view to enable them to choose more energy efficient products. As noted in the Commission Evaluation of the ELD and the EDD: "the ELD and EDD were adopted to address the basic problem that products can have a negative impact on the environment depending on how they are made, used and disposed of. The Eco-design Directive addresses this problem by 'pushing' the market towards optimised environmental performing (in particular, more energy efficient products by banning the worst performing ones. The Energy Labelling Directive addresses this problem by 'pulling' the market towards more energy efficient products by informing consumers about the energy efficiency and other resources use of products through an energy label, thereby encouraging them to buy more energy efficient ones. The specific requirements for each product group are, after a preparatory study and extensive stakeholder consultation, set out in product specific regulations (delegated acts for energy labelling; implementing acts for ecodesign)." [378]

[376] Article 1 CPR

[377] European Commission website. Construction Products Regulation, http://ec.europa.eu/growth/sectors/construction/product-regulation/index_en.htm

[378] Commission Staff Working Document Accompanying document to the Proposal for a Directive of the European Parliament and of the Council on the indication by labelling and standard product information of the consumption of energy and other resources by energy-related products, Impact Assessment, COM(2008)778 final.

No apparent contradictions between the objectives of these three instruments were identified in the literature and implementation reports reviewed for this assessment. The EDD and ELD are considered instruments with complementary, but distinct objectives. They were both adopted within the framework and in response to the 2007 EU commitment to become a highly energy-efficient, low carbon economy through the establishment of the so-called "20-20-20" targets. The 2010 impact assessment of the ELD review considered but rejected the option of integrating the ELD and the EDD due to the different nature of the legal instruments: the Ecodesign Directive bans the less performing products regarding their global environmental performance focusing on all environmental aspects throughout the lifecycle of the product.[379] The ELD provides an energy label showing to consumers the energy efficiency performance of the product during the use phase (and relevant use of other resources (like water) where relevant).[380] Manufacturers respond to the energy label by developing and placing on the market ever more efficient products, and in parallel, by discontinuing the production and withdrawing from the market the less efficient products, thanks to the stimulus provided by the relevant ecodesign legislation.[381] Moreover, the report notes that the EDD and ELD are considered implemented in a coherent way.[382]

While the CPR establishes certain broad environmental requirements for some categories of construction products, such as in relation to the reuse and recyclability of construction works, or the use of environmentally compatible raw and secondary materials, or health and environmental impacts of construction works and products, eco-design requirements are considered helpful to address additional energy and environment-related issues.[383] These are particularly relevant for achieving the goals of sustainable development, as raised as a particular objective of the EDD in its Article 1.

In spite of this apparent coherence of the objectives of each of the instruments, some concerns are raised. The 2015 study of the CPR implementation, the evaluation of the EDD and the interviews held as part of this fitness check showed there are concerns by several stakeholders about the coherence of the procedures established under the CPR, on the one hand, and the EDD and ELD on the other hand.[384] The procedural overlaps identified by stakeholders are covered below under ´substantive requirements´.

During the analysis of the implementation of the CPR, stakeholders were asked whether they considered the CPR to be consistent with the objectives of other EU policies and strategies in the area of competitiveness, innovation and sustainability. It is remarkable that, while more than half of public authorities and organisations involved in conformity assessment indicated that the CPR is indeed consistent in these policy areas, a significantly smaller proportion of companies (28%) thought this to be the case, with the majority of company respondents (54%) unsure.[385] In particular in relation to sustainability, a majority of stakeholders were of the view that the CPR has not yet translated to an actual improvement in terms of sustainability. Although the CPR mentions sustainability and puts in place a framework for future action in this area in its Annex 1, it does not, for the time being, put in place specific requirements on sustainability. Moreover, in this context, there is no reference to energy efficiency of construction products specifically.

In conclusion, the objectives of the CPR, ELD and EDD are clearly distinct and they are mostly considered complementary and coherent. However, particular concerns about overlaps between the procedures that have been established under the several legal instruments are raised in several evaluation exercises of the individual instruments. These will be presented, where relevant, below. Moreover, in particular in relation to

[379] Commission Staff Working Document Accompanying document to the Proposal for a Directive of the European Parliament and of the Council on the indication by labelling and standard product information of the consumption of energy and other resources by energy-related products, Impact Assessment, COM(2008)778 final.
[380] Ibid.
[381] Draft Report on the proposal for a regulation of the European Parliament and of the Council setting a framework for energy efficiency labelling and repealing Directive 2010/30/EU (COM(2015)0341 – C8-0189/2015 – 2015/0149(COD))
[382] Proposal for a Regulation of the European Parliament and of the Council setting a framework for energy efficiency labelling and repealing Directive 2010/30/EU, COM(2015) 341 final and Commission Staff Working Document, Evaluation of the Energy Labelling and Ecodesign Directives accompanying the document Report from the Commission to the European Parliament and the Council on the review of Directive 2010/30/EU of the European Parliament and of the Council of 19 May 2010 on the indication of labelling and standard product information of the consumption of energy and other resources by energy-related products, COM(2015) 143 final
[383] Ecodesign Directive evaluation, p. 167
[384] Analysis of the implementation of the Construction Products Regulation, RPA Ltd, for DG GROW, 2015, 178, Ecodesign Directive evaluation, p. 25 and following.
[385] Analysis of the implementation of the Construction Products Regulation, RPA Ltd, for DG GROW, 2015, 124.

sustainability, a majority of stakeholders are of the view that the CPR has not yet translated to an actual improvement in terms of sustainability.

The evaluation of the EDD notes that coherence should always be promoted in the interface between the EDD and other policy tools, such as WEEE, RoHS and CPR. The evaluation study of the EDD recommends that practical guidance be developed to clarify such interface and, in particular, set out in clear terms which policy tools have priority in addressing which aspects.

The proposal for a new Energy Labelling Regulation aims to address some of the concerns raised above, in particular in relation to the EDD. The Commission proposal establishes more explicit links and cross-references to the EDD, for instance, by requiring that the ELD label should clearly mention the situations where, because of eco-design measures under the EDD, products can no longer fall into one of the lower classes. It also foresees in the potential combination of the new Consultation Forum under the ELD with the Consultation Forum referred to in Article 18 of the EDD.[386]

B.2.2 Scope and definitions in the CPR, EDD and ELD

The CPR specifically applies to the placing or making available on the EU market of construction products. In contrast, the EDD establishes requirements for energy-related products. The ELD establishes requirements for energy-related products as well. The products covered by each of the legal instruments are defined as follows:

Exhibit B.2.1 Definitions of products covered by the CPR, EDD and ELD

CPR	EDD	ELD
Art. 2(1) - 'construction product' means any product or kit which is produced and placed on the market for incorporation in a permanent manner in construction works or parts thereof and the performance of which has an effect on the performance of the construction works with respect to the basic requirements for construction works;	Art. 2(1) - 'Energy-related product', (a 'product'), means any good that has an impact on energy consumption during use which is placed on the market and/or put into service, and includes parts intended to be incorporated into energy-related products covered by this Directive which are placed on the market and/or put into service as individual parts for end-users and of which the environmental performance can be assessed independently;	Art. 2(a) -'energy-related product' or 'product' means any good having an impact on energy consumption during use, which is placed on the market and/or put into service in the Union, including parts intended to be incorporated into energy-related products covered by this Directive which are placed on the market and/or put into service as individual parts for end-users and of which the environmental performance can be assessed independently;

The CPR applies to all types of construction products as defined above. Several construction elements and materials can be classified as energy-using or energy-related products and therefore the EDD and ELD may potentially affect a number of construction materials manufacturers. The EDD is often described as a framework Directive. Article 15 EDD notes that, where a product category meets the volume and potential environmental improvement requirements set out in the article, it shall be covered by an implementing measures or a self-regulation measure. The implementing measures are established by means of Commission Regulations, following an impact assessment. The Commission adopted a 2012 Eco-design Working Plan for the period 2012-2014, setting out an indicative list of energy-related products which would be considered in priority for the adoption of implementing measures. The working plan included several construction products, such as windows and thermal insulation for buildings. The European Commission has published lists of Eco-design and Energy-Labelling products for which implementing and delegated acts have been adopted. The only construction products currently included on this list are solid fuel boilers, (solid fuel) local space heaters

[386] Proposal for a Regulation of the European Parliament and of the Council setting a framework for energy efficiency labelling and repealing Directive 2010/30/EU, 15 July 2015, COM(2015)341 final.

and space/water heaters.[387] On the other hand, the preparatory study for an implementing measure on windows, for example, concluded it was not recommended to established eco-design requirements for windows. [388]

Existing overlaps between the EDD and CPR for specific product categories thus currently relate to five product categories, namely solid fuel boilers, (solid fuel) local space heaters and space/water heaters, as regulated by recently adopted Commission Regulations (EU) 2015/1185, (EU) 2015/1188, (EU) 2015/1189, (EU) No 813/2013 and (EU) No 814/2013.

The impact assessment accompanying Regulations (EU) 2015/1189, 813/2013 and 814/2013 do not refer to the CPR. The impact assessment (IA) carried out in preparation of EU Regulation (EU) 2015/1188 on local space heaters, on the other hand, does explicitly consider the coverage of local space heaters by the CPR. The IA concludes that the CPR covers local space heaters insofar these are considered part of the building installations (portable types are excluded), but that no minimum requirements or mandatory information requirements regarding energy efficiency or emissions have thus far been issued. The IA considers that this product category may be considered both a construction product and an energy-related product when the local space heater is used as part of building installations.

The IA notes that a certain "minimum level" of improvements for local space heaters is not guaranteed by the existing regulations at EU level. For this reason, several Member States started introducing maximum levels of certain pollutant emissions and minimum energy efficiency requirements for these products. However, these are regulated by Member States in different ways. Ultimately, this lack of harmonised specific regulation in Europe was considered to induce a risk that individual energy efficiency and requirements and emission limits set by Member States could hamper the functioning of the EU internal market. The objectives of the implementing regulation were thus considered complementary with other existing regulation, including the CPR, and necessary to achieve the specific objectives of the EDD.

Also Regulation (EU) 2015/1185 explicitly refers to the CPR, in its recital 18. The CPR is not explicitly referred to in the impact assessment. Recital 18 of this Regulation notes that solid fuel local space heaters are covered by harmonised standards to be used pursuant Article 7 of the CPR. The recital continues that: "for the sake of legal certainty and simplification, it is appropriate for the corresponding harmonised standards to be revised in order to reflect the ecodesign requirements established by this Regulation."

The economic operators subject to the requirements of the CPR, ELD and EDD

The CPR, EDD and ELD, as instruments establishing product or labelling requirements for specific categories of products, impose obligations on the operators who place the products or make them available on the EU internal market. The CPR defines as 'economic operator' the manufacturer, importer, distributor or authorised representative. As a consequence, different obligations are imposed on the manufacturer, his authorized representative, or the importer of the product in the EU. The CPR moreover establishes legal obligations for the distributors of such products in the EU. These economic operators are required to follow the procedures established by these legal instruments, such as the preparation of the necessary documentation and affixing of CE markings or labels, prior to the introduction of the product on the EU market.

The three instruments define the economic operators to this end as follows:

[387] List of eco-design legislation, as published on the European Commission website, 2.9.212015, https://ec.europa.eu/energy/sites/ener/files/documents/list_of_ecodesign_measures.pdf
List of eco-design legislation, as published on the European Commission website, 15.3.2016, https://ec.europa.eu/energy/sites/ener/files/documents/list_of_enegy_labelling_measures.pdf

[388] Final Report, LOT 32 / Ecodesign of Window Products, June 2015, http://www.ecodesign-windows.eu/downloads/TASK7_Lot32_WINDOWS_CONSOLIDATED.pdf

Exhibit B.2.2 Definitions of operators subject to regulation under the CPR, ELD and EDD

CPR	EDD	ELD
Art 2(19) - 'manufacturer' means any natural or legal person who manufactures a construction product or who has such a product designed or manufactured, and markets that product under his name or trademark;	Art 2(6) - 'Manufacturer' means the natural or legal person who manufactures products covered by this Directive and is responsible for their conformity with this Directive in view of their being placed on the market and/or put into service under the manufacturer's own name or trademark or for the manufacturer's own use. In the absence of a manufacturer as defined in the first sentence of this point or of an importer as defined in point 8, any natural or legal person who places on the market and/or puts into service products covered by this Directive shall be considered a manufacturer;	Art 2(h) - 'supplier' means the manufacturer or its authorised representative in the Union or the importer who places or puts into service the product on the Union market. In their absence, any natural or legal person who places on the market or puts into service products covered by this Directive shall be considered a supplier;
Art 2(22) - 'authorised representative' means any natural or legal person established within the Union who has received a written mandate from a manufacturer to act on his behalf in relation to specified tasks;	Art 2(7) - 'Authorised representative' means any natural or legal person established in the Community who has received a written mandate from the manufacturer to perform on his behalf all or part of the obligations and formalities connected with this Directive;	Art 2(h) - 'supplier' means the manufacturer or its authorised representative in the Union or the importer who places or puts into service the product on the Union market. In their absence, any natural or legal person who places on the market or puts into service products covered by this Directive shall be considered a supplier;
Art 2(21) - 'importer' means any natural or legal person established within the Union, who places a construction product from a third country on the Union market;	Art 2(8) - 'Importer' means any natural or legal person established in the Community who places a product from a third country on the Community market in the course of his business;	Art 2(h) - 'supplier' means the manufacturer or its authorised representative in the Union or the importer who places or puts into service the product on the Union market. In their absence, any natural or legal person who places on the market or puts into service products covered by this Directive shall be considered a supplier;
Art 2(20) - 'distributor' means any natural or legal person in the supply chain, other than the manufacturer or the importer, who makes a construction product available on the market;	/	/

It is remarkable to note that the different legal instruments do not use identical definitions of the economic operators covered by the obligations, in particular given the fact that the obligations established by each of the instruments might apply to the same operators, as is the case in the new implementing regulation on solid fuel local space heaters. While the definitions in this case do not directly lead to substantial differences and inconsistencies, it is recommended in view of legal clarity to aim at using same definitions where possible, especially in the situation in which the requirements under the different instruments will apply to a same operator for making one same product available on the market.

Specific consideration of SMEs

Following the requirement in the Terms of Reference for this study to pay particular attention to "the SME related aspects and to the impacts of this legislation on them", this section assesses whether SMEs are effectively taken up in the scope of application of the CPR, EED and ELD.

Up to 95% of construction, architecture, and civil engineering firms are micro-enterprises or small and medium-sized enterprise (SMES).[389] As a consequence, the specific consideration of SMEs in relation to the legislation that applies to this sector is particularly important. The CPR, as an instrument specifically developed for the sector, refers to the particular importance of SMEs. In its recital 27, the legislator notes that it is necessary to provide for simplified procedures for the drawing up of declarations of performance in order to alleviate the financial burden of enterprises, in particular small and medium-sized enterprises (SMEs). Chapter VI of the CPR establishes such simplified procedures particularly aimed at reducing the administrative burden for SMEs. Stakeholders confirm in interviews that the CPR has been instrumental for SMEs as it creates a more level playing field across Member States and ensures access to the markets of the Member States in a harmonised manner. Also the EDD makes specific reference to SMEs and contains a safeguard in its Article 15 aimed at ensuring that the implementing measures will take specific account of the competitiveness of SMEs. A similar provision is contained in the ELD in relation to energy labelling requirements. In addition, Article 13 of the EDD contains specific provisions on SMEs, requiring the EC to consider SMEs in the context of programmes from which they can benefit or through guidelines covering specificities of SMEs active in the product sector. Finally, the ELD requires Member States when implementing the provisions of the ELD, to endeavour to refrain from adopting measures that could impose unnecessarily bureaucratic and unwieldy obligations on the market participants concerned, in particular small and medium-sized enterprises.

Overall, it can be concluded that the three instruments take particular account of the specific situation of SMEs in the construction sector. Stakeholders do not raise any imbalance or incoherence in the approach taken towards SMEs under the specific instruments.

Definitions of placing or making available on the market

The requirements under the EDD, ELD and CPR are applicable to products entering the EU market. Remarkably, while the CPR covers the ´placing and making available on the market´, the EDD and ELD apply to the situations under which products are placed on the market´ or ´put into service´. The definitions of ´placing on the market´ used in the CPR does not include the specification that this shall be ´with a view to distribution or use within the Community, whether for reward or free of charge and irrespective of the selling technique´, as mentioned under the EDD and ELD. This is, in the CPR, included in a separate definition under the term ´making available on the market´.

[389] http://ec.europa.eu//growth/sectors/construction/

Exhibit B.2.3 Making available on the market in the CPR, EDD and ELD

CPR	EDD	ELD
Art.2(17) - 'placing on the market' means the **first** making available of a construction product on the Union market;	Art 2(4) - 'Placing on the market' means making a product available for the **first** time on the Community market with a view to its distribution or use within the Community, whether for reward or free of charge and irrespective of the selling technique;	Art 2(i) - 'placing on the market' means making a product available for the **first** time on the Union market with a view to its distribution or use within the Union, whether for reward or free of charge and irrespective of the selling technique;
Art 2(17) - 'making available on the market' means any supply of a construction product for distribution or use on the Union market in the course of a commercial activity, whether in return for payment or free of charge;	/	/
/	Art 2(5) - 'Putting into service' means the first use of a product for its intended purpose by an end-user in the Community;	Art 2(j) - 'putting into service' means the first use of a product for its intended purpose in the Union;

While the need to differentiate the types of obligations incumbent upon economic operators may justify the use of different terms and definitions, the inconsistent use of terms to same operators for making one same product available on the EU market does not contribute to legal clarity and may lead to confusion on the part of the operators.

B.2.3 Substantive requirements established by the CPR, EDD and ELD

Under the CPR, manufacturers are obliged to draw up a declaration of performance for construction products that are either covered by harmonised standards or that conform to a European Technical Assessment (ETA), when the product is placed on the market.[390] The essential characteristics of a construction product are laid down in such harmonised technical specifications in relation to the basic requirements for construction works. These basic requirements are set out in Annex I to the CPR. Manufacturers are moreover obliged to affix the CE marking on the product. Under the CPR, importers are obliged to make sure that the manufacturer has fulfilled such obligations before bringing construction products into the EU market.[391] The EDD is a framework directive and equally an internal market instrument. Similarly to the CPR, the manufacturer is responsible under the EDD for ensuring compliance of the energy-related products with the EDD requirements and for issuing a declaration of conformity. The EDD establishes generic or specific eco-design requirements for products through specific implementing regulations or self-regulation for a product category. These can, for example, consist of limit values for energy consumption or for recyclability or generic requirements. The EDD also requires the affixing of a CE marking on the product.

EDD requirements only apply for a specific product category when eco-design requirements have been established for this product category either through a Commission Regulation or self-regulation by the sector. As mentioned above, eco-design requirements have been established for a range of product categories, some of which are also construction products, depending on whether these are used in a construction.[392] The EDD ensures that, if a voluntary agreement by industry fulfils certain conditions, it is considered as a priority alternative to mandatory requirements.[393] The voluntary agreement must achieve the same objectives as

[390] Articles 4 and 6 CPR
[391] Article 13 CPR
[392] In 2013 and 2015, the European Commission adopted EC Regulations under the EDD for energy-related products which can, depending on their use, at the same time be a construction product.
[393] Article 17 and Annex VIII EDD, Ecodesign brochure, European Commission website, http://ec.europa.eu/growth/industry/sustainability/ecodesign/index_en.htm

binding legislation in a more rapid and cost-effective manner.[394] Specific conditions are established in Annex VIII of the EDD. Finally, the ELD establishes obligations for suppliers of products covered by a delegated act to supply a label and a fiche in accordance with the ELD and the delegated act.[395] Moreover, the supplier is obliged to produce technical documentation which shall be sufficient to enable the accuracy of the information contained in the label, following the detailed instructions of the ELD.[396] This information shall be made available to the national authorities and the EC. The ELD also establishes obligations for product dealers in relation to the proper display of the labels. Similarly to the CPR and the EDD, the ELD is also a free movement directive, ensuring that products that meet the requirements of the Directive shall move freely within the EU market.

Declarations of performance and conformity of products and the affixing of a CE marking under the CPR and EDD

The CPR requires manufacturers to draw up a declaration of performance for a construction product covered by a harmonised standard or conform to an ETA, when the product is placed on the market. By drawing up the declaration of performance, the manufacturer assumes responsibility for the conformity of the construction product with the declared performance. For the construction products for which a manufacturer has drawn up such a declaration of performance, Article 8 of the CPR requires them to affix a CE marking to the product. The affixing of the CE marking indicates that the manufacturer is taking the responsibility for the conformity of the product with the declared performance and with the CPR requirements.

Also the EDD requires a declaration, called declaration of conformity, to be issued whereby the manufacturer ensures and declares that the product complies with the relevant provisions of the applicable implementing measure, before a product is placed on the EU market and/or put into service.[397] The conformity assessment procedure to be followed is specified in the implementing measure for the product.[398] As mentioned above, the terminology used for both procedures slightly differs. The EDD refers to a ´declaration of conformity´, similar to the former Construction Products Directive. This term has been modified in the CPR to ´declaration of performance´. Moreover, the EDD also covers a CE marking obligation for energy-related products covered by any implementing measures adopted under the EDD. Thus, before a product covered by an EDD implementing measure is placed on the market, a CE marking shall be affixed to the product, together with the issuance of an EC declaration of conformity.

Finally, the ELD requires a supplier of a product covered by the Directive to produce technical documentation aiming to demonstrate the accuracy of the information contained in the energy label and provide this to the competent authorities. While there is a labelling requirement, indicating specific information on energy efficiency for consumers under the ELD, there is no obligation under the ELD to affix a CE marking as the Directive does not regulate the product requirements for entering the EU internal market per se, but a labelling requirement for specific categories of products.

Article 5 CPR establishes *derogations* from the obligation to draw up a declaration of performance, namely for products that are individually manufactured or custom-made and installed in a single identified construction work under specific circumstances, where the product is manufactured on the construction site and incorporated in the works or where it is manufactured in a traditional manner, appropriate for heritage conservation or in a non-industrial process for protected construction works. Similar exclusions do not exist for the energy-related products under the EDD and ELD. However, the adoption of implementing measures for a product type under the EDD does rely on a set of minimum criteria, including trade volumes, the environmental impact of the product and its potential for improvement in terms of energy efficiency. Product types not meeting these minimum thresholds will therefore not be subject to eco-design requirements under the EDD and hence effectively covered by a derogation from the Directive´s obligations.

[394] Ibid.
[395] Article 5 ELD
[396] Article 5 ELD
[397] Article 5 EDD
[398] Article 8 EDD

In relation to the *CE marking*, Article 8 CPR specifies that the rules for affixing the CE marking provided for in other applicable legislation shall apply without prejudice to the CE marking requirements under the CPR. The CPR moreover clarifies that for any construction product covered by a harmonised standard or for which an ETA has been issued, the CE marking shall be the only marking that attests conformity of the product with the declared performance. There are thus two individual obligations to affix a CE marking, one on construction products and one on energy-related products, with each CE marking attesting the conformity of the product with the requirements under the respective legislation. Article 8(2) of the CPR notes that the affixing of a CE marking on a product ensures that the manufacturer takes responsibility for the conformity of the construction product, not only with the declared performance and the requirements of the CPR, but also with applicable requirements in other relevant Union harmonisation legislation providing for its affixing. The article notes that the rules for affixing the CE marking under such legislation shall apply without prejudice to the requirements set out in the CPR. This ensures that the requirements for CE marking under the CPR and EDD apply in parallel to those construction products that are at the same time considered as energy-related product under the EDD.

The CPR explicitly states that MS may not introduce any references to national measures. Once the CE marking is affixed to a product, all MS shall allow the product to access its market. The EDD contains a similar obligation for energy-related products covered by any implementing measures adopted under the EDD.

While potential *overlaps* thus clearly exist between the several instruments, these might not necessarily create a problem of legal coherence in the overall regulatory framework. The European Parliament (EP) Draft Report on the proposal for a new energy labelling Regulation, which intends to repeal Directive 2010/30/EU, confirms that "the ELD has developed its operational life within a system of interrelated directives and regulations. Its closest relationship is with the EDD, both of them addressing issues at on opposite ends of the market for energy-related products, in a coordinated, complementary way."[399]

In relation to the declarations of conformity under the EDD and technical documentation under the ELD, the opinion of the EP is in line with most sources of information considered in this analysis, such as the preparatory and evaluation studies for reviewing the respective pieces of legislation and stakeholder views collected through interviews and a survey with manufacturers. The declaration of conformity under the EDD and the technical documentation under the ELD are considered coherent instruments, each serving specific and complementary objectives.

Different views, however, exist in relation to these procedures under the *CPR and EDD*. The Draft Report of the European Parliament, for example, notes that the EDD also maintains significant conceptual and operational interaction with other regulations which should be clarified and that consideration should be given to the interaction of the EDD with the multi-act system governing conformity assessment and CE marking.[400] Several stakeholders note that the EC is developing different initiatives that have common objectives and making use of different tools with methodologies of which the scopes overlap. The stakeholders refer in this context explicitly to the CPR and EDD and raise the problem of establishing two parallel paths to CE marking. On the other hand, Article 8(2) of the CPR explicitly ensures that one CE marking can be used for expressing the performance of a construction product under the CPR as well as conformity with other requirements under EU law, such as the EDD.

The stakeholders interviewed for this study state that the CPR covers environmental information and data related to construction products, similarly to the information covered by the EDD. As one stakeholder mentions, there might in some cases be a harmonised standard under the CPR as well as an implementing regulation under the EDD covering the same product. At the moment of the preparation of this study, implementing regulations under the EDD have been adopted for five product types which could at the same time be considered construction products if they are incorporated in construction works. Three of these implementing regulations do not explicitly consider a potential overlap between the implementing regulations under the EDD and the regulation under the CPR.

[399] European Parliament, Draft Report on the proposal for a regulation of the European Parliament and of the Council setting a framework for energy efficiency labelling and repealing Directive 2010/30/EU (COM(2015)0341 – C8-0189/2015 – 2015/0149(COD))
[400] European Parliament, Draft Report on the proposal for a regulation of the European Parliament and of the Council setting a framework for energy efficiency labelling and repealing Directive 2010/30/EU (COM(2015)0341 – C8-0189/2015 – 2015/0149(COD))

The IA for the implementing regulation for local space heaters, Commission Regulation (EU) 2015/1188 considers a potential overlap with the CPR. The IA however notes that no minimum requirements or mandatory information requirements regarding energy efficiency or emissions have thus far been issued under the CPR. The IA positively assesses the need for such requirements on the basis of the EDD. It is worth noting that such requirements could in the future be adopted under the CPR, on the basis of basic requirements 3, 6 and 7 as set out in Annex to the CPR. .

Also Regulation (EU) 2015/1185 explicitly refers to the CPR, in its recital 18. The CPR is not explicitly referred to in the impact assessment. Recital 18 of this Regulation notes that solid fuel local space heaters are covered by harmonised standards to be used pursuant Article 7 of the CPR. The recital continues that: "for the sake of legal certainty and simplification, it is appropriate for the corresponding harmonised standards to be revised in order to reflect the ecodesign requirements established by this Regulation."

In the case of solid fuel local space heaters there is thus a clear simultaneous application of the requirements under the CPR and the EDD. However, as discussed previously, it is important to analyse whether such overlaps result in a lack of coherence between both instruments.

First, it is important to note in this context that both the CPR and EDD apply to a wide range of products. Five categories of products have thus far been considered both construction products and energy-related products, and have met the thresholds for regulation under both instruments. As mentioned above, the objectives of both instruments are moreover considered distinct but complementary. Still, some practical issues have been raised at several instances by stakeholders.

Stakeholders note, for example, that the implementing regulation under the EDD might go into much more detail about the characteristics of the product or while the standard under the CPR foresees one test for each essential requirement, the EDD may provide for more. Another stakeholder refers in this context specifically to the fact that the Declaration of conformity is usually quite different from the declaration of performance and concludes this creates confusion among producers, in particular among SMEs. Only one product category is currently subject to a harmonised standard under the CPR and an implementing regulation under the EDD, namely solid fuel local space heaters. Nevertheless, the adoption of new harmonised standards or implementing regulations for additional product categories could expand the practical scope of this issue.

Some stakeholders note that there are currently two avenues for CE marking for those products which are at the same time a construction product and an energy-related product. Moreover, one same CE marking applicable to a product type might have a different meaning, depending on its use.[401]
The 2015 evaluation study of the ELD and EDD did not identify specific overlaps between these instruments and the CPR. The study refers to overlaps between product requirements in other pieces of legislation, but these do not refer to the CPR.[402] The 2015 study on the analysis of the implementation of the CPR, however, noted similar issues as those raised by stakeholders above.[403] The report notes that: "several stakeholders participating in the consultation noted that there is potentially an overlap between the CPR and the EDD and that such an overlap may be unnecessary, create a cumulative burden and contravene the principle of ´better regulation´."[404] One public authority quoted in the study noted that it should be the case that when you comply with requirements of legislation, you do not need to repeat tests under different legislation. Stakeholders also noted that there should be no doubling of procedures, requirements, standards and obligations for economic operators in horizontal legislation, like the EDD. Stakeholders also note that there should be explicit links between the CPR, on the one hand, and the EDD and ELD, on the other hand.

[401] For example, the CE marking for local space heaters may involve responsibility for compliance with the CPR, though only when the product is incorporated in construction works. This would most likely not be the case for portable local space heaters, which would however be subject to the requirements of the EDD.
[402] Commission Staff Working Document Accompanying document to the Proposal for a Directive of the European Parliament and of the Council on the indication by labelling and standard product information of the consumption of energy and other resources by energy-related products, Impact Assessment, COM(2008)778 final.
[403] Analysis of the implementation of the Construction Products Regulation, RPA Ltd, for DG GROW, 2015, p. 178.
[404] Analysis of the implementation of the Construction Products Regulation, RPA Ltd, for DG GROW, 2015, p. 178.

In this context, it is important to note that the affixing of a CE marking on a product type subject to the CPR and other legislation ensures, on the basis of Article 8(2) CPR, compliance with the requirements of the CPR as well as with the requirements of any such other sectoral harmonisation legislation. As such, while there might not be one integrated procedure for the affixing of the CE marking, the manufacturer, when affixing the CE marking, assumes responsibility for all applicable requirements to the product category, both under the CPR and other EU legislation, such as the EDD.

Secondly, the integration of eco-design requirements established under the EDD into a simultaneously applicable harmonised standard under the CPR, as suggested in Recital 18 of Regulation (EU) 2015/1185, aims at reducing the administrative burden for operators and enhancing coherence between the procedures under both legal instruments, while ensuring that compliance can be guaranteed with the requirements under and specific objectives of each of the separate legal instruments. This integration process would aim to meet the concerns of manufacturers related to similar parallel requirements under a harmonised standard and eco-design requirements.

The adoption or modification of harmonised standards is however a lengthy process and is not a sole competence of the European Commission. Close collaboration will be required between the European Commission and the European Standardisation Organisations. Finally, eco-design requirements will have to be integrated with an applicable standard, when adopted, for every product category.

Finally, stakeholders point to the lack of explicit *cross-references* to the energy-related product legislation in the CPR. Similar concerns were previously expressed about the EDD and ELD. These were addressed in the proposal for a new Energy Labelling Regulation, which has been identified as an important improvement by the EP. A similar introduction of explicit cross-references to the EDD and ELD in the CPR for construction products may prove necessary to enhance the understanding of obligations applicable to economic operators in the construction sector.

Overall, it can be concluded that several types of stakeholders under previous studies and the current fitness check point to a potential overlap between the procedures established under the CPR and EDD for construction products and possibly parallel routes for CE marking. Stakeholders point in particular to the possibility to adopt energy efficiency requirements and sustainability requirements more generally on the basis of basic requirements 3 and 7 set out in Annex to the CPR. They request that, when such requirements are adopted, priority for the regulation of construction products be given to the CPR route. The construction sector stakeholders add that, in the situation where the EDD route is required to improve the sustainability of the built environment, legislative processes must be consistent and coordinated.

Currently only one implementing measure under the EDD specifically refers to the parallel application of the CPR for the same product category. With a view to enhance the integration the procedures under the CPR and EDD, Recital 18 of this Regulation refers to the possible integration of eco-design requirements in the harmonised standard applicable to this product. The integration of such requirements is currently under discussion with the European Standardisation Organisations. It is worth noting that Article 8(2) of the CPR requires the manufacturer of a product, when affixing a CE marking, to assume responsibility for compliance with the requirements under the CPR and under any other applicable sector-specific EU legislation. As such, while procedures may not be fully integrated at this point in time, the CE marking stands for compliance with all applicable CE marking requirements under EU legislation.

Framework for establishing product requirements: European harmonised standards, implementing and delegating measures

The CPR lays down conditions for the placing or making available on the EU market of construction products by establishing harmonised rules on how to express the performance of such products. To this end, the CPR relies on harmonised technical specifications, which can take the form of existing harmonised standards or a new ETA which sets out the test methods to be used for the products covered by them. The scheme aims to ensure that products tested as established in the technical specifications can enter the EU market without additional national obstacles. European harmonised standards are prepared jointly by the competent authorities of the Member States and provide for methods and criteria for assessing the performance of construction

products, provide for less onerous testing methods and establish control mechanism for verifying constancy of performance.[405] There are currently over 400 hENs covering a broad range of construction products.[406] Where no European standard exists or can be used for a construction product, a manufacturer may request an ETA, based on a European Assessment Document to be adopted for the product by a technical assessment body. The procedure for the adoption of a European Assessment Document and its content are set out in the CPR. Ecodesign requirements under the EDD are established through implementing measures or self-regulation measures for a specific product category. The EDD requires such implementing measures or self-regulation measures to be adopted when a product fulfils the criteria related to volume of trade of the product, environmental impact and potential for improving its energy consumption set out in the EDD. Since the EDD was adopted in 2009, 24 implementing measures have been adopted by means of Commission Regulations for specific product groups.[407] Implementing measures are adopted following an impact assessment and detailed study, including sector consultations. They shall moreover take consideration of EC environmental priorities and existing EC legislation and self-regulation for the product. Voluntary agreements or self-regulation measures may be adopted for specific product categories on the condition they meet the requirements set out in Annex VIII of the EDD, including, for example, that the measure is sector-wide, adopted in an open manner with the involvement of civil society and cost-effective. Annex VII EDD ensures that these measures shall refer to existing EU harmonised standards which shall be used for the assessments. Similarly to the EDD, the ELD requires delegated acts to be adopted when a product fulfils a set of criteria which include the energy saving potential of the product, the wide disparity of performance levels of products on the market or the existence of existing EU legislation and self-regulation mechanisms. The delegated acts set out issues such as the measurement standards and methods, information to be included in the technical documentation or the design and content of the label for the specific product category.

The CPR, EDD and ELD thus use different types of instruments for establishing the technical specifications which a product category must meet to enter the EU market. However, as there is a system to ensure that the different rules are taken into account, no specific issues of coherence were raised particularly in this respect by stakeholders. It is noted though that the timeframes for preparing technical specifications can be lengthy.

Finally, the CPR clarifies the margin of discretion left to Member States to establish national requirements on product performance in the construction sector. The ECJ clarified, in a recent judgement against Germany that MS have the right to set performance requirements for construction products, provided that the free movement of products with the CE marking is not impeded, which is ensured by hENs.[408]

Room for self-regulation (Article 17 EDD)

Only the EDD contains the explicit possibility for product eco-design requirements to take the form of self-regulation. In its Article 17, the EDD allows for voluntary agreements or other self-regulation measures to be presented as alternatives for implementing measures. Annex VIII to the EDD establishes the very specific conditions under which such a self-regulation measure may be such an alternative.

The Commission assesses each self-regulatory initiative on a case by case basis after consulting the members of the Consultation Forum and taking into account the findings of the technical/economic preparatory study if available. In July 2015, two voluntary eco-design agreements had been accepted by the Commission.[409] These do not cover construction products. As stated in the 2015 evaluation of the EDD and ELD: "Experience to date with voluntary agreements has shown that they can work effectively when "inclusion" of a broad part of the

[405] Article 17 CPR.
[406] Analysis of the implementation of the Construction Products Regulation, RPA Ltd, for DG GROW, 2015.
[407] Evaluation of the Energy Labelling and Ecodesign Directives accompanying the document Report from the Commission to the European Parliament and the Council on the review of Directive 2010/30/EU of the European Parliament and of the Council of 19 May 2010 on the indication of labelling and standard product information of the consumption of energy and other resources by energy-related products, COM(2015) 143 final.
[408] Analysis of the implementation of the Construction Products Regulation, RPA Ltd, for DG GROW, 2015, p.112 and CJEU, Judgement of the Court (Tenth Chamber) of 16 October 2014, European Commission v Federal Republic of Germany Case C-100/13
[409] Evaluation of the Energy Labelling and Ecodesign Directives accompanying the document Report from the Commission to the European Parliament and the Council on the review of Directive 2010/30/EU of the European Parliament and of the Council of 19 May 2010 on the indication of labelling and standard product information of the consumption of energy and other resources by energy-related products, COM(2015) 143 final.

market sector is possible, whilst "non-inclusion" of certain industry actors or groups has been the cause of opposition by stakeholders because of market distortion, unfair competition or missing out on the full savings potential. In addition, openness and transparency is crucial." The Commission is in the process of developing guidelines for voluntary agreements.

The EDD and ELD also note that the existence of a voluntary agreement or other self-regulation measure shall be considered in the process of adopting implementing measures or delegated acts.

The CPR does not foresee the possibility of self-regulation. In fact, one of the main objectives of the CPR was to enhance the free circulation of construction products in the EU internal market and to create a level playing field for all manufacturers of construction products. To this end, the still voluntary approach used under the CPD for Member States opting out of the CE marking obligation was changed to a mandatory approach for all Member States under the CPR. The approach followed under the EDD, ELD and CPR is thus apparently contradictory. This is however not necessarily considered to raise problems of coherence in itself. The flexibility introduced by voluntary agreements tailored to the specific sector and the minimum requirements established in Annex VIII EDD for such initiatives of self-regulation are mostly considered a positive aspect.[410]

Surveillance of products on the market

Rigorous enforcement of the product requirements is essential for ensuring a fair competition and a level-playing field in the EU market. The three instruments covered by this analysis implement compliance mechanisms aimed at monitoring the products that enter the EU market.

Article 28 CPR first implements a system of assessment and verification of constancy of performance of construction products. Manufacturers are bound, based on the requirements in Annex V to the CPR, for example, to ensure factory production controls and testing. In addition, Chapter VIII of the CPR establishes market surveillance and safeguard procedures. Under this chapter, the market surveillance authorities of the Member State shall carry out evaluations of products they have sufficient reason to believe do not meet the applicable (product-related or CPR) requirements. They can then require the economic operator to take all appropriate corrective measures to bring the product into compliance or to withdraw the product from the market. Similar measures may also be adopted for a product which is in compliance with the CPR but which still presents a risk to health and safety. The CPR also foresees the possibility for the Commission to take action against national measures from a Member State which is considered to be contrary to the EU legislation. Also the EDD contains similar measures, on the basis of which a Member State may oblige a manufacturer to make the product comply with the requirements of the implementing measure for the product. Also here, the Member State has the authority to prohibit the placing on the market of the product until compliance is established. In addition, and in line with the legal form of the EDD as a Directive, Article 20 of the EDD requires Member States to lay down penalties in their legislation for the infringement of provisions of the EDD. Similar requirements have been set out in the ELD in relation to the provisions on energy labelling.

Interviews with stakeholders and the literature review have not identified specific problems of coherence with the enforcement provisions of the three instruments.

B.2.4 Conclusions

The *objectives* of the CPR, ELD and EDD are clearly distinct and are mostly considered complementary and coherent. While, similarly to the CPR aiming to eliminate barriers in the EU internal market, the EDD also aims at reducing the overall negative impact of products placed on the EU market in the perspective of sustainable development. The ELD complements the EDD by setting a framework for the labelling and the provision of information regarding energy consumption.

There are currently five *product categories*, for which implementing regulations have been adopted under the EDD which can be considered construction products if incorporated in construction works, namely solid fuel boilers, (solid fuel) local space heaters and space/water heaters. . For one of these product categories, local

[410] Ibid.

space heaters as regulated in EC Regulation 2015/1188, the impact assessment specifically refers to the CPR and concludes that no minimum requirements in relation to energy efficiency have been adopted for this product category under the CPR.
Also Regulation (EU) 2015/1185 explicitly refers to the CPR. Recital 18 of this Regulation notes that solid fuel local space heaters are covered by harmonised standards to be used pursuant Article 7 of the CPR. As such, this is the only product category currently covered by a harmonised standard under the CPR and ecodesign requirements under the EDD.

The different legal instruments do not use identical *definitions* of economic operators covered by the obligations nor of the term ´placing on the market´. This could be problematic given the fact that the obligations established by each of the instruments might apply to the same operators, as is the case in the new implementing regulation on solid fuel space heaters. While the definitions in this case do not directly lead to substantial differences and inconsistencies, it is recommended in view of legal clarity to aim at using same definitions where possible, especially in the situation in which the requirements under the different instruments will apply to a same operator for making one same product available on the market.

The substantial requirements under the EDD and ELD are mostly considered coherent and complementary. Several stakeholders, however, point to a potential overlap between the procedures established under the CPR and EDD for construction products. Stakeholders explicitly raise the problem of establishing parallel routes for CE marking in this case. Currently only one implementing measure under the EDD relates to construction products covered by a harmonised standard under the CPR. It should be noted though that this issue could expand to other product categories when additional harmonised standards are adopted on the basis of basic requirements 3, 6 or 7 of the CPR or new implementing regulations are adopted under the EDD. The Regulation for solid fuel local space heaters recognises the potential for better integration by noting that, "for the sake of legal certainty and simplification, it is appropriate for the corresponding harmonised standards to be revised in order to reflect the ecodesign requirements established by this Regulation." The revision or adoption of harmonised standards is often a lengthy process and would have to be tailored to each specific product category subject to parallel requirements. At this point in time, no such integration of ecodesign requirements in standards has been finalised though discussions to this end are ongoing. Finally, it is important to note that the parallel routes toward CE marking do not result in several CE markings. The CE marking is harmonised accross the EU market and Article 8(2) CPR ensures that the affixing of the CE marking entails the assumption of responsibility by the manufacturer of compliance with CE marking requirements under not only the CPR, but also under other EU legislation.

The three instruments take particular account of the specific situation of SMEs in the construction sector. Stakeholders do not raise any imbalance or incoherence in the approach taken towards SMEs under the specific instruments.

The CPR, EDD and ELD use different types of instruments for establishing the technical specifications which a product category must meet to enter the EU market (European harmonised standards, ETAs, implementing and delegated acts). However, as there is a system to ensure that the different rules are taken into account, no specific issues of coherence were raised particularly in this respect by stakeholders. Finally, the potential integration of eco-design requirements in such standards could specifically enhance coherence for those product categories which are at the same time subject to requirements under both instruments.

Interviews with stakeholders and the literature review have not identified specific problems of coherence with the enforcement provisions of the three instruments.

B.3 CONSTRUCTION-RELATED EU LEGAL INSTRUMENTS ON ENERGY EFFICIENCY: EED, EPBD AND RESD

The list of EU legal instruments identified for the purpose of this fitness check comprehend three main pieces of energy efficiency legislation that impact the construction sector, namely Directive 2012/27/EU (EED), Directive 2010/31/EU (EPBD) and Directive 2009/28/EC (RESD). These three instruments, to the extent to which they relate to the construction sector, will be analysed together for the purpose of this coherence sub-section.

B.3.1 Objectives of the EED, EPBD and RESD

In March 2007, the EU leaders committed Europe to become a highly energy-efficient, low carbon economy through the establishment of the so-called "20-20-20" targets. These targets – confirmed in the Europe 2020 Strategy – set three key objectives for 2020:

- A 20% reduction in EU greenhouse gas emissions from 1990 levels;
- Raising the share of EU energy consumption produced from renewable sources to 20%;
- A 20% improvement in the EU's energy efficiency.

The EED, EPBD and RESD were all enacted in this context. The objectives of the three legislative acts are therefore closely aligned in order to achieve the 20-20-20 targets. As the greatest energy savings potential lies in buildings, according to the Energy Efficiency Plan 2001[411], the three Directives aim – to a higher or lesser degree – at tapping the considerable potential for higher energy savings in buildings.

The EED creates "a common framework to promote energy efficiency within the Union and lay[s] down specific actions to […] achieve the significant unrealised energy saving potentials it identifies."[412] More particularly, the purpose of the EED, as provided in its Article 1(1), is to establish a "common framework of measures for the promotion of energy efficiency within the Union in order to ensure the achievement of the Union's 2020 20 % headline target on energy efficiency and to pave the way for further energy efficiency improvements beyond that date".

The EPBD provides more concrete actions with a view to "achieving the great unrealised potential for energy savings and reducing the large differences" between programmes in the field of energy efficiency in the buildings sector.[413] In particular, the 2010 EPBD aims to promote the energy performance of buildings and building units, taking into account outdoor climatic and local conditions, as well as indoor climate requirements and cost-effectiveness. Its provisions cover energy needs for the heating of premises, the production of hot water, cooling, ventilation and lighting for new and existing buildings, whether they are residential or not. Recitals 3, 5 and 6 refer to the 20% energy efficiency and renewable sources targets.

The objective of the RESD, according to its Article 1, is to establish a "common framework for the promotion of energy from renewable sources". The RES Directive deals with renewable energy in the sectors of electricity and transport and – for the first time – introduces EU-wide legislation dealing with renewable energy in the heating and cooling sector. Recitals 8, 9, 13 and 17 refer to the 20% renewable sources target.

[411] COM (2011) 109 final – Energy Efficiency Plan 2011.
[412] Recital 10 of the EED.
[413] See recital 7 of the 2002 EPBD.

Exhibit B.3.1 General Objectives of EED, EPBD and RESD

EED	EPBD	RESD
Art. 1(1) – This Directive establishes a common framework of measures for the promotion of energy efficiency within the Union in order to ensure the achievement of the Union's 2020 20 % headline target on energy efficiency and to pave the way for further energy efficiency improvements beyond that date. It lays down rules designed to remove barriers in the energy market and overcome market failures that impede efficiency in the supply and use of energy, and provides for the establishment of indicative national energy efficiency targets for 2020.	Art. 1(1) – This Directive promotes the improvement of the energy performance of buildings within the Union, taking into account outdoor climatic and local conditions, as well as indoor climate requirements and cost-effectiveness.	Art. 1 – This Directive establishes a common framework for the promotion of energy from renewable sources. It sets mandatory national targets for the overall share of energy from renewable sources in gross final consumption of energy and for the share of energy from renewable sources in transport. […]

The EPBD, EED and RESD all have the common goal to reduce CO2 emissions from buildings and to achieve the 20-20-20 targets by promoting energy efficiency and renewable energy. From a legal perspective, the texts are therefore considered to be coherent with regards to their general objectives and can certainly complement each other to achieve their respective goals (more energy efficiency / high energy performance of buildings / higher renewable energy sources). This has been corroborated in the recent 2015 public consultation on the EPBD, where the majority of respondents have stated that renewable energy and energy efficiency measures "face similar barriers and can generate synergies in […] implementation".[414] Many respondents to the 2015 public consultation on the EED have also stressed that, in general, the energy efficiency legislation seems to work well with each other. For example, it has been said that "[t]he EED has worked to complement other legislation and works well as a framework directive creating synergies […]. The EED acts as a clear demonstration that the EU sees action on energy efficiency as the most cost effective way to reach EU climate goals."[415]

Although the synergies between the EPBD, EED and RESD are mainly positive and reinforcing, there is also a risk of confusion and overlap, at both the EU and national/regional level. The Concerted Action Renewable Energy Sources Directive (CA-RES) has warned that there is some potential for tension between these three Directives due to the interactions between energy efficiency and renewables in buildings: "as buildings become more energy efficient, each additional energy efficiency measure will have diminishing (energy and carbon saving) returns, and renewable energy becomes relatively more cost effective".[416]-[417] According to the Concerted Action, as long as there is dialogue between policymakers and stakeholders at the EU and national level on the appropriate balance between building-related energy efficiency and renewable energy technologies, this tension can be diminished. However, the fact that in almost half of Member States the decision makers and officials responsible for implementing the building regulation aspects of the RESD/EED

[414] See the answers to question 38 in: Ecofys, Public Consultation on the Evaluation of the EPBD, Final Report, Nov. 2015.
[415] See the reaction of EuroACE to question 1.2 of the 2015 public consultation on the EED.
[416] See: CA-RES, WG 4. RES and district heating available at: https://ec.europa.eu/energy/intelligent/projects/sites/iee-projects/files/projects/documents/ca-res_working_group_publication_no_4_en.pdf.
[417] See, for instance, the example of Sweden. According to Göteborg Energi AB (in their answer to question 1.2 of the 2015 public consultation on the EED), "there is a conflict between RED and EED. The RED, supported by EPBD, promotes the use of renewables for heating buildings. In Swedish district heating systems, the main sources of heat are renewables and recovered heat from CHP, waste-to-energy (often co-generation) and industrial waste heat. We believe that priority should be given to recovered heat rather than renewables, since renewables can be put to use elsewhere, which is not the case with recovered heat. The Swedish implementation has put renewables higher than recovered heat, which in practice puts district heating to a disadvantage in comparison to individual heating based on electricity." The same concern is heard by the Finnish Forest Industries Federation: "EED overlaps the RES target and GHG target. One target which should be GHG target would be optimal solution because then companies and countries could choose the most efficient way to reduce greenhouse gases". Further, the Confederation of Swedish Enterprise has supported the one target-approach, and thinks that the climate target should be the superior target. Energy efficiency and renewable energy are means to get there.

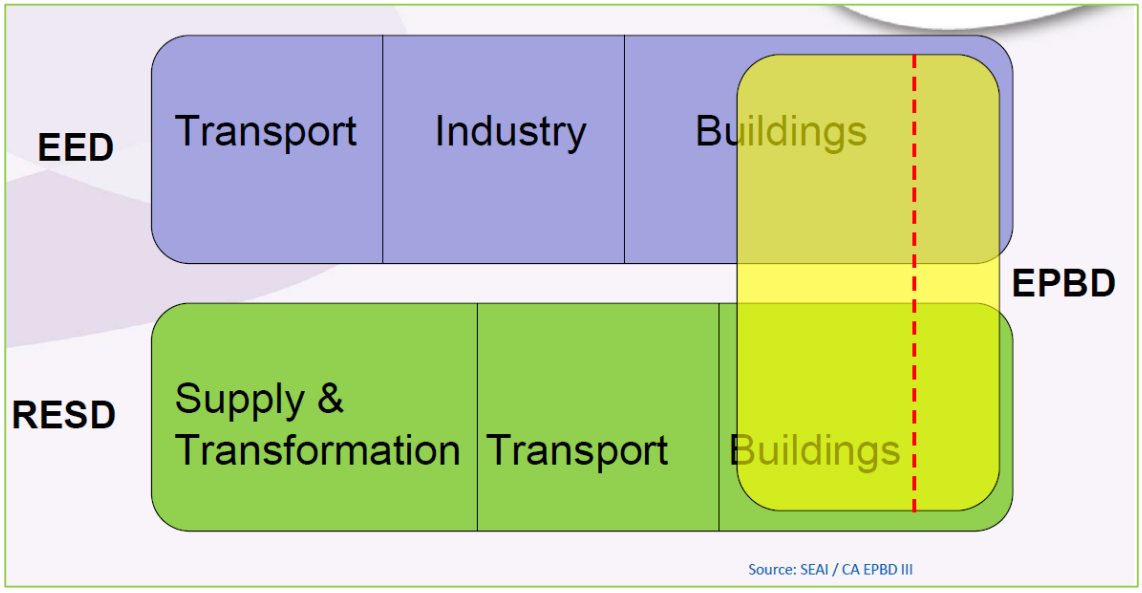
and the EPBD were employed in different ministries will impede the efficient contribution of these Member States to reach the 20-20-20 targets.[418]

B.3.2 Scope and definitions in the EED, EPBD and RESD

Scope of the legislation

The EED is seen as providing the general framework for energy efficiency, consisting of several policy areas where other Directives go into more detail, such as on buildings and products. With regard to buildings, the main pieces of legislation are in particularly the EPBD and the RESD that work together with the EED. The following figure illustrates this relationship.

Exhibit B.3.2 Link between EED, EPBD and RESD



[419]

Exclusions from the scope of the legislation

Pursuant to the EED, EPBD and RESD, some buildings may be exempted – under certain conditions – from some of the energy efficiency requirements laid down in these pieces of EU legislation. In the case of Article 5(2) of the EED and Article 4(2) of the EPBD, the exemptions are optional i.e. they apply only if the Member State decides to do so.

[418] FEDARENE stated the following during the 2015 public consultation on the EED, with regard to question 1.2: "An example of the kind of problems that can occur is where different government departments or other public bodies are made responsible for the implementation of different, but overlapping or synergistic legislation, and do not coordinate effectively at national or regional level. For this reason, it would be useful to 'tidy up' the legislation at EU level, and make the links and connections clearer, while at the same time checking for full coherence and for any potential contradictions or misinterpretations."

[419] J. Magyar, CA EED – Core Theme 6, CA EPBD meeting in Dubrovnik – outcomes on co-ordinated approaches to training and accreditation of experts (EPBD recast Article 17 and EED Article 16), Oct. 2014.

Exhibit B.3.3 Exemptions in the EED, EPBD and RESD

EED	EPBD	RESD
Art. 5(2) on the exemplary role of public bodies' buildings Member States may decide not to set or apply the requirements referred to in paragraph 1 to the following categories of buildings: (a) buildings **officially protected** as part of a designated environment, or because of their special architectural or historical merit, in so far as compliance with certain minimum energy performance requirements would unacceptably alter their character or appearance; (b) buildings owned by the **armed forces** or central government and serving national defence purposes, apart from single living quarters or office buildings for the armed forces and other staff employed by national defence authorities; (c) buildings used as places of **worship** and for religious activities. *Art. 6(2) on the purchasing by public bodies* The obligation referred to in paragraph 1 shall apply to the contracts of the **armed forces** only to the extent that its application does not cause any conflict with the nature and primary aim of the activities of the armed forces. The obligation shall not apply to contracts for the supply of military equipment as defined by Directive 2009/81/EC of the European Parliament and of the Council of 13 July 2009 on the coordination of procedures for the award of certain works contracts, supply contracts and service contracts by contracting authorities or entities in the fields of defence and security.	*Art. 4(2) on the setting of minimum energy performance requirements* Member States may decide not to set or apply the requirements referred to in paragraph 1 to the following categories of buildings: (a) buildings **officially protected** as part of a designated environment or because of their special architectural or historical merit, in so far as compliance with certain minimum energy performance requirements would unacceptably alter their character or appearance; (b) buildings used as places of **worship** and for religious activities; (c) **temporary** buildings with a time of use of two years or less, industrial sites, workshops and non-residential agricultural buildings **with low energy demand** and non-residential agricultural buildings which are in use by a sector covered by a national sectoral agreement on energy performance; (d) **residential** buildings which are used or intended to be used for either less than four months of the year or, alternatively, for a **limited annual time of use** and with an expected energy consumption of less than 25 % of what would be the result of all-year use; (e) **stand-alone buildings with a total useful floor area of less than 50 m 2**.	*Art. 13(4) on introducing renewable energy into building regulations and codes* The requirements of the first subparagraph shall apply to the **armed forces**, only to the extent that its application does not cause any conflict with the nature and primary aim of the activities of the armed forces and with the exception of material used exclusively for military purposes.

Although the content of Arts.5-6 EED, Art.4 EPBD and Art.13(4) RESD is not really comparable, all four provisions aim at raising energy performance, energy efficiency or renewable energy in buildings. The number of potential exemptions to this goal is considerably higher in the EPBD in comparison with the RESD. EPBD exemptions relate to officially protected buildings, places of worship, temporary buildings with low energy demand, residential buildings with limited use and small stand-alone buildings. The EED has the first two exemptions in common with the EPBD and adds buildings owned by the armed forces to its exemptions list. This addition is, on its turn, the only exemption foreseen in the RESD and only when it could ”cause conflict with the nature and primary aim of the activities of the armed forces”.
It is nowhere stated why different exemptions are used for each piece of legislation, but there is no inconsistency in the wording used and there have been no known problems with the reported differences.

Application to SMEs

As the Terms of Reference for this study ask to pay particular attention to “the SME related aspects and to the impacts of this legislation on them”, it is helpful to see whether SMEs are indeed effectively taken up in the scope of application of Directives 2012/27/EU, 2010/31/EU and 2009/28/EC.

Exhibit B.3.4 SME provisions in EED, EPBD and RESD

EED	EPBD	RESD
Recital 24 – To tap the energy savings potential in certain market segments where energy audits are generally not offered commercially (such as small and medium-sized enterprises (SMEs)), Member States should develop programmes to encourage SMEs to undergo energy audits. Recital 41 – Most Union businesses are SMEs. They represent an enormous energy saving potential for the Union. To help them adopt energy efficiency measures, Member States should establish a favourable framework aimed at providing SMEs with technical assistance and targeted information. Art. 8(2) – Member States shall develop programmes to encourage SMEs to undergo energy audits and the subsequent implementation of the recommendations from these audits. […] Art. 18 – Member States shall promote the energy services market and access for SMEs to this market by: […]	Recital 19 - Union financial instruments should be used to give practical effect to the objectives of this Directive, without however substituting national measures. […] They could play an important role in the development of national, regional and local energy efficiency funds, instruments, or mechanisms, which deliver such financing possibilities to private property owners, to small and medium-sized enterprises and to energy efficiency service companies.	Recital 3 – Production of energy from renewable sources often depends on local or regional small and medium-sized enterprises (SMEs). The opportunities for growth and employment that investment in regional and local production of energy from renewable sources bring about in the Member States and their regions are important. Recital 4 - When favouring the development of the market for renewable energy sources, it is necessary to take into account the positive impact on regional and local development opportunities, export prospects, social cohesion and employment opportunities, in particular as concerns SMEs and independent energy producers.

Neither the recitals (apart from recital 19 of the EPBD, which refers to financial instruments) nor any of the provisions in the EPBD refer to SMEs. The Impact Assessment carried out for the EPBD neither includes a section on the impact of the EPBD on SMEs.[420] This does not constitute a potential gap as this Directive is fully directed towards the European construction sector, which is for around 99% composed of SMEs.[421] The EPBD therefore implicitly pays particular attention to SMEs. Nevertheless, it would be welcomed to highlight the opportunities that this energy legislation creates for SMEs in the recital part of the EPBD.

The RESD acknowledges, in its recitals 3 and 4, that the market for renewable energy sources will specifically impact SMEs. Also Article 14 of the RESD, which deals with training and certification of renewable energy equipment installers, is particularly important for SMEs: building owners will need the 'professional guidance, technical advice and sales services of the large community of experienced and trained construction crafts and SMEs throughout Europe, which need to become "energy advisors".'[422] A particular mention of SMEs in this Article 14 is, however, not provided. This is consistent with the Impact Assessment carried out prior to the adoption of the RESD, which does not mention SMEs at all.[423]

The EED, finally, explicitly refers to the fact that "[m]ost Union businesses are SMEs" and that, therefore, special help is needed for SMEs to adopt energy efficiency measures. The impact of the energy efficiency goals laid down in the EED on SMEs is largely dealt with within the directive itself. Also the Impact Assessment carried out for the EED regularly refers the specificities of SMEs.[424]

All in all, the three main directives impacting the construction sector with regard to energy efficiency measures have taken SMEs into account in their scope of application. It can further be emphasised that the EED, which includes a definition of SMEs in its Article 2(26), makes a direct cross-reference to the definition laid down in Title I of the Annex to Commission Recommendation 2003/361/EC of 6 May 2003 concerning the definition of micro, small and medium-sized enterprises – hereby enhancing horizontal coherence on a large scale.

Definitions

Energy. The EED specifically focuses on achieving the 20% energy efficiency target; the EPBD promotes the energy performance of buildings and the RESD applies to energy from renewable sources. All three directives therefore relate to the control of European energy consumption in order to reduce greenhouse gas emissions.

[420] Communication Staff Working Document, Accompanying document to the Proposal for a Recast of the Energy Performance of Buildings Directive (2002/91/EC) – Impact Assessment, COM(2008) 780 final, SEC(2008) 2865.
[421] http://www.ueapme.com/spip.php?rubrique17
[422] UEAPME, Position of the UEAPME Construction Forum on "Directive on the promotion of the use of energy from renewable sources" (COM/2008/19/final), 1 September 2008.
[423] Communication Staff Working Document, Impact Assessment, Document accompanying the Package of Implementation measures for the EU's objectives on climate change and renewable energy for 2020, Proposals for Directive of the European Parliament and of the Council amending Directive 2003/87/EC so as to improve and extend the EU greenhouse gas emission allowance trading system, Decision of the European Parliament and of the Council on the effort of Member States to reduce their greenhouse gas emissions to meet the Community's greenhouse gas emission reduction commitments up to 2020, Directive of the European Parliament and of the Council on the promotion of use of renewable energy sources, SEC(2008) 85.
[424] Communication Staff Working Document, Impact Assessment, Accompanying the document Directive of the European Parliament and of the Council on energy efficiency and amending and subsequently repealing Directives 2004/8/EC and 2006/32/EC, SEC(2011) 779 final.

Exhibit B.3.5 'Energy' definitions in EED, EPBD and RESD

EED	EPBD	RESD
Art. 2(1) – 'energy' means all forms of energy products, combustible fuels, heat, renewable energy, electricity, or any other form of energy, as defined in Article 2(d) of Regulation (EC) No 1099/2008 of the European Parliament and of the Council of 22 October 2008 on energy statistics; Art. 2(4) - 'energy efficiency' means the ratio of output of performance, service, goods or energy, to input of energy;	Art. 2(4) - 'energy performance of a building' means the calculated or measured amount of energy needed to meet the energy demand associated with a typical use of the building, which includes, inter alia, energy used for heating, cooling, ventilation, hot water and lighting; Art. 2(5) - 'primary energy' means energy from renewable and non-renewable sources which has not undergone any conversion or transformation process; Art. 2(6) - 'energy from renewable sources' means energy from renewable non-fossil sources, namely wind, solar, aerothermal, geothermal, hydrothermal and ocean energy, hydropower, biomass, landfill gas, sewage treatment plant gas and biogases;	Art. 2(a) - 'energy from renewable sources' means energy from renewable non-fossil sources, namely wind, solar, aerothermal, geothermal, hydrothermal and ocean energy, hydropower, biomass, landfill gas, sewage treatment plant gas and biogases;

Although all three Directives use the words 'energy', 'primary energy', 'energy from renewable sources' (or renewable energy) and 'energy efficiency', they are not everywhere defined and it is not straightforward why this is not the case. The EED, for example, includes provisions on 'primary energy savings' and 'primary energy consumption' but 'primary energy' is not defined, and there is neither a cross-reference to this definition in the EPBD. The definition of 'energy', on the other hand, is only explicitly provided for within the EED.
'Energy from renewable sources' is defined in both the EPBD and the RESD (but not in the EED) and these definitions are literally the same, hence not leading to any incoherence problems. However, all three legal instruments also use the terms 'renewable energy sources' and 'renewable energy' (even within the EED's 'energy' definition), instead of opting for a consistent terminology.

Further, while the EED provides a definition of 'energy efficiency', an explicit definition – or a cross-reference to the EED – has not been included in the EPBD or the RESD, even though the term is used multiple times throughout these two directives.

This analysis may conclude that there is a gap and an inconsistency with most terms related to 'energy', but literature nor jurisprudence or stakeholder interviews have highlighted any specific problems in this regard.

Renovation of buildings. The EPBD, the EED and the RESD all include provisions that apply to new buildings and existing buildings that are subject to major renovation. Only the EPBD, however, includes various definitions related to buildings, in particular: 'building', 'building envelope', 'building unit' and 'building element' (Art. 2 EPBD). The term 'building' is only defined in the EPBD and a definition is lacking in both the EED and the RESD. The term 'building envelope' is also used in the EED, as is the term 'building element'. Only the definition of the latter is cross-referenced to Art. 2(9) of the EPBD (see Art. 16 and 17 EED), while the definition of the former is completely missing. This analysis may conclude that there is a gap in the EED and RESD with most terms related to 'building', but literature nor jurisprudence or stakeholder interviews have highlighted any specific problems in this regard.
Even though the EPBD defines the term 'building', it does not include any definition or description of what may constitute a 'new building' – even though an entire article is devoted to new buildings (ref. Art. 6 EPBD). There, however, does not seem to be any confusion or interpretation issues with regard to this term.
'Major renovation' is defined in Article 2(10) of the EPBD as "the renovation of a building where:

a) the total cost of the renovation relating to the building envelope or the technical building systems is higher than 25 % of the value of the building, excluding the value of the land upon which the building is situated; or
b) more than 25 % of the surface of the building envelope undergoes renovation."

Recital 16 of the EPBD explains this definition by stating that "Member States should be able to choose to define a 'major renovation' either in terms of a percentage of the surface of the building envelope or in terms of the value of the building. If a Member State decides to define a major renovation in terms of the value of the building, values such as the actuarial value, or the current value based on the cost of reconstruction, excluding the value of the land upon which the building is situated, could be used."

The table below shows whether and how major renovations are defined in the other two legal instruments.

Exhibit B.3.6 'Major renovation' definitions in the EPBD, EED and RESD

Terms used	EED	EPBD	RESD
Major renovation	Recital 30 - When a connection is made in a new building or a building undergoes major renovations, as defined in Directive 2010/31/EU, […] Art. 9(1)(b) – […] a new connection is made in a new building or a building undergoes major renovations, as set out in Directive 2010/31/EU.	Art. 2(10) – 'major renovation' means the renovation of a building where: a) the total cost of the renovation relating to the building envelope or the technical building systems is higher than 25 % of the value of the building, excluding the value of the land upon which the building is situated; or b) more than 25 % of the surface of the building envelope undergoes renovation **;**	Art. 13(4) – […] in new buildings and in existing buildings that are subject to major renovation.
Substantial refurbishment	Art. 2(44) - 'substantial refurbishment' means a refurbishment whose cost exceeds 50 % of the investment cost for a new comparable unit;	/	/
Deep renovation	Recital 16 – […] That strategy should address cost-effective deep renovations which lead to a refurbishment that reduces both the delivered and the final energy consumption of a building by a significant percentage compared with the pre-renovation levels leading to a very high energy performance. Such deep renovations could also be carried out in stages. Art. 4(c) – This strategy shall encompass : policies and measures to stimulate cost-effective deep renovations of buildings, including staged deep renovations; Art. 5 (6) – […] whereby they take other cost-effective measures, including deep renovations and measures for behavioural change of occupants […]	/	/
Comprehensive renovation	Art. 4 - When implementing measures for the comprehensive renovation of central government buildings in accordance with the first subparagraph, […]	/	/

With regard to the definition of 'major renovation', the EED correctly cross-references to the EPBD, while the RESD uses the term but does not provide any definition or cross-reference. The EED further seems to use other similar terms to major renovation, such as 'substantial refurbishment', 'deep renovation' and 'comprehensive renovation'. The first of these terms is defined in Article 2(44) EED, but a definition of 'comprehensive renovation' is lacking and a clear definition of 'deep renovation' can only be found through recital 16 and through the Article 6 guidance document[425]. This guidance document states the following: "Although 'deep renovations' are not defined in the Directive, Recital 16 refers to them as renovations '*which lead to a refurbishment that reduces both the delivered and the final energy consumption of a building by a significant percentage compared with the pre-renovation levels leading to a very high energy performance*'. This implies that such renovations must at least go beyond the minimum efficiency requirements set under the EPBD." The term 'deep renovation' hence makes an unmistakable link between the EED and the EPBD.

This lack of a definition of 'deep renovation' has generally been considered as a gap.[426] Indeed, some stakeholders that replied to the public consultation on the review of progress on the 2020 energy efficiency objective called for a revision of the EPBD and relevant parts of the EED "to include a measurable definition of deep renovations and a quantifiable objective to accelerate deep renovations of residential and tertiary buildings".[427] Related hereto, also an EU-wide definition of 'staged deep renovation' would be welcomed, as there are different definitions on Member State level.[428]

The question of what could be a definition of 'deep renovation' (or refurbishment or retrofit) at EU level has been tackled by, inter alia, the Global Buildings Performance Network (GBPN).[429] According to GBPN's research, "the definition of deep renovation varies between the regions. In Europe most definitions focus on heating, cooling, ventilation and hot water and the general understanding is that these should lead to an improvement of at least 75 % in the before and after performances of the treated building". GBPN further refers to a report published by the European Parliament on 30 July 2012 on the proposal for a directive of the European Parliament and of the Council on energy efficiency and repealing Directives 2004/8/EC and 2006/32/EC. In this report, a definition is proposed for 'deep renovation', meaning "a refurbishment that reduces both the delivered and the final energy consumption of a building by at least 80% compared with the pre-renovation levels."[430] It is also to be noted that the majority of construction stakeholders, interviewed during the course of this study, have pointed out that any definition of major or deep renovation may well be in line with national legislation, but does not necessarily comply with common business practice. For construction companies, a major renovation is simply a renovation work that implies considerable costs or a complicated renovation work, for example because the historical elements of the building are imposing some limits, or because highly specialised staff or highly technological solutions are required.

B.3.3 Substantive requirements established by the EED, EPBD and RESD

Several areas can be identified where the EED, EPBD and RESD may potentially overlap or – positively – create synergies. The following table, which only focuses on the substantive requirements in the three directives that are related to the construction sector, gives a short overview.[431]

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[425] Commission Staff Working Document, Guidance note on Directive 2012/27/EU on energy efficiency, amending Directives 2009/125/EC and 2010/30/EC, and repealing Directives 2004/8/EC and 2006/32/EC, Article 6: Purchasing by public bodies Accompanying the document Communication from the Commission to the European Parliament and the Council Implementing the Energy Efficiency Directive – Commission Guidance, SWD(2013)446final

[426] See, e.g., Economist Intelligence Unit, Investing in energy efficiency in Europe's buildings – A view from the construction and real estate sectors, 2013.

[427] Report of the public consultation on the review of progress on the 2020 energy efficiency objective, 2014, available at: https://ec.europa.eu/energy/sites/ener/files/documents/2014_summary_report_energy2020.pdf

[428] Ecofys, Public Consultation on the Evaluation of the EPBD, Final Report, Nov. 2015.

[429] See: GBPN, What is a deep renovation definition?, Technical Report, Feb. 2013; and Shnapp, Sitjà Gibert and Higgins, How can we renovate deeply if we don't know what that is?, ECEEE 2013 Summer Study Proceedings, 1617-1625.

[430] Amendment 28, Article 2, paragraph 1, point 27.a) in European Parliament (2012). "Report on the proposal for a directive of the European Parliament and of the Council on energy efficiency and repealing Directives 2004/8/EC and 2006/32/EC". European Parliament. Rapporteur: Claude Turmes. Available at: http://www.europarl.europa.eu/sides/getDoc.do?type=REPORT&reference=A7-2012-0265&language=EN.

[431] A more elaborate overview, showing nine identified areas of potential synergy, is provided in: CA-EPBD, Implementing the EPBD – featuring country reports, 2016, p.104.

Exhibit B.3.7 Areas of potential overlap between the EED, EPBD and RESD

Interactions and synergies	EED	EPBD	RESD
Public buildings	Articles 5, 6	Articles 11, 13	Article 13(5)
Certification / auditing	Article 8	Articles 11, 12, 14, 15	/
Training and accreditation	Articles 8, 16	Article 17	Article 14(3)
Information	Article 17	Article 20	Article 14
Control	Article 8, Annex VI	Article 18, Annex II	Article 14(3), Annex IV
Mutual recognition	Article 16(3)	/	Article 14(3)

Public buildings

The EED, EPBD and RESD all include provisions in relation to public/central government buildings and the exemplary role of the public sector in the area of energy efficiency.

Exhibit B.3.8 Provisions on public buildings in the EED, EPBD and RESD

	EED	EPBD	RESD
Recitals	Recital 15 – The total volume of public spending is equivalent to 19 % of the Union's gross domestic product. For this reason the public sector constitutes an important driver to stimulate market transformation towards more efficient products, buildings and services, as well as to trigger behavioural changes in energy consumption by citizens and enterprises. Recital 17 – Buildings owned by public bodies account for a considerable share of the building stock and have high visibility in public life. It is therefore appropriate to set an annual rate of renovation of buildings owned and occupied by central government on the territory of a Member State to upgrade their energy performance. This renovation rate should be without prejudice to the obligations with regard to nearly-zero energy buildings set in Directive 2010/31/EU of the European Parliament and of the Council of 19 May 2010 on the energy performance of buildings. The obligation to renovate central government buildings in this Directive complements that Directive, which requires Member States to ensure that when existing buildings undergo major renovation their energy performance is upgraded so that they meet minimum energy performance requirements. Recital 19 – With regard to the purchase of certain products and services and the purchase and rent of buildings, central governments which conclude public works, supply or service contracts should lead by example and make energy-efficient purchasing decisions.	Recital 21 – The public sector in each Member State should lead the way in the field of energy performance of buildings, and therefore the national plans should set more ambitious targets for the buildings occupied by public authorities. Recital 23 – Public authorities should lead by example and should endeavour to implement the recommendations included in the energy performance certificate. Recital 24 – Buildings occupied by public authorities and buildings frequently visited by the public should set an example by showing that environmental and energy considerations are being taken into account and therefore those buildings should be subject to energy certification on a regular basis.	/

Articles	Art. 5 - *Exemplary role of public bodies' buildings* 1. Without prejudice to Article 7 of Directive 2010/31/EU, each Member State shall ensure that, as from 1 January 2014, 3 % of the total floor area of heated and/or cooled buildings owned and occupied by its central government is renovated each year to meet at least the minimum energy performance requirements that it has set in application of Article 4 of Directive 2010/31/EU. […] Art. 6 – *Purchasing by public bodies* 1. Member States shall ensure that central governments purchase only products, services and buildings with high energy-efficiency performance, insofar as that is consistent with cost-effectiveness, economical feasibility, wider sustainability, technical suitability, as well as sufficient competition, as referred to in Annex III. […]	Art. 11(5) - Subject to national rules, Member States shall encourage public authorities to take into account the leading role which they should play in the field of energy performance of buildings, inter alia, by implementing the recommendations included in the energy performance certificate issued for buildings owned by them within its validity period. Art. 13 - Member States shall take measures to ensure that where a total useful floor area over 500 m 2 of a building for which an energy performance certificate has been issued in accordance with Article 12(1) is occupied by public authorities and frequently visited by the public, the energy performance certificate is displayed in a prominent place clearly visible to the public. On 9 July 2015, this threshold of 500 m 2 shall be lowered to 250 m 2.	Art. 13(5) – Member States shall ensure that new public buildings, and existing public buildings that are subject to major renovation, at national, regional and local level fulfil an exemplary role in the context of this Directive from 1 January 2012 onwards.

Article 5 of the EED stipulates that central governments should continue, as previously required by the Energy Services Directive, to play their exemplary role in energy efficiency through the renovation of the buildings they own or occupy and which do not meet the minimum efficiency requirements set under the EPBD (Article 4 and Annex I). The article also contains obligations for Member States to encourage public bodies at regional and local level to follow the central government's exemplary role (art.5(7)).[432]

Article 13 of the EPBD relates to the issuance and clearly visible display of the public authorities' energy performance certificates, while Article 11 urges the public authorities to lead by example through the implementation of the recommendations included in the energy performance certificate. The exemplary role of public buildings (this time with regard to the use of renewable energy technologies) is further emphasised in Article 13(5) of the RESD.

At first sight, there seems to be overlap between the legislative provisions for public buildings as the three Directives all emphasise the exemplary role of public bodies' buildings. On closer analysis however, this overlap is in reality quite narrow. The following box, as elaborated by CA EED, gives a good illustration.[433]

Exhibit B.3.9 Potential overlaps related to the exemplary role of public bodies' buildings

Public buildings	EED – Art.5	EPBD – Art.11(5) + Art. 13	RESD – Art.13(5)
What is it about? (content)	Existing buildings. Minimum energy performance requirement for renovation of central government buildings.	Buildings where a total useful floor area over 500 m² is occupied by a public authority and frequently visited by the public (threshold lowered to 250 m² on 9 July 2015). Display of energy performance certificates in a prominent place clearly visible to the public. Public authorities should implement the recommendations included in the energy performance certificate.	New build and buildings subject to major renovation fulfil an exemplary role – potentially through complying with standards for nearly zero energy housing or by providing that the roofs of public or mixed private-public buildings are used for producing renewable energy.
Who is it for? (target audience)	Public authorities	Public authorities	National, regional and local public authorities
Method and process (the how)	Exemplary role	Exemplary role	Exemplary role

All in all, many stakeholders have indeed emphasised the positive synergies with existing legislation for buildings, especially in relation to the energy efficiency of public buildings and the public purchases.[434] However, there are also numerous stakeholders who have stated during the 2015 public consultation on the EED that the EED has clear overlaps with the EPBD, especially with regard to the exemplary role of public bodies' buildings, suggesting that the related provisions do not work together but instead work in parallel to each other.[435] Therefore, a "thorough harmonization and coordination" is asked for by these stakeholders.

Also Article 6 EED relates to the exemplary role of public authorities. The article establishes the principle that, when central governments purchase products, buildings and services, they must ensure high energy efficiency and comply with the standards listed in Annex III (which is not exhaustive). This Article does not introduce a new approach to the EU rules on energy efficient procurement (as already laid down in the Energy Services

[432] CA EED, Following central government's exemplary role in building renovation, Executive Summary Report 2.3, Core Theme 2 - Public Sector: public buildings and public purchasing, Working Group 3, April 2014
[433] CA EED, Joint Working Group on potential topics for cooperation between the Concerted Actions, 2013.
[434] See, for example, the answer of an anonymous source to question 1.2 of the 2015 public consultation on the EED.
[435] See, for example, the reaction of EnR (European Energy Network) to question 1.2 of the 2015 public consultation on the EED.

Directive and the Energy Labelling Directive) but merely extends the scope of the obligation to additional items. Also, the rules of the EED must be in line with the Public Procurement Directive.[436] The question whether all EU public procurement rules relating to sustainability should be gathered into a single EU guidance framework has been included in the recent open public consultation on the EED.[437] Another stakeholder raised concerns over the clarity of Article 6 and Annex III, and cross-references to different EU acts and labelling schemes, as well as the lack of mandatory requirements for local/public authorities and public utilities. [438] Finally, the majority of the 300 respondents to the 2015 public consultation on the EED think that there is insufficient guidance to characterise "energy efficient products, services and buildings".[439]

Schemes related to the assessment of a building (unit)

Between the EED and the EPBD, five different schemes are set up to assess the energy efficiency of a building (unit) by an expert. These schemes are the following:

- energy performance certification of residential buildings
- voluntary energy performance certification of non-residential buildings
- inspection of heating systems
- inspection of air-conditioning systems
- energy audit of large companies, which can include their buildings.

The EPBD requires regular inspection of heating and air-conditioning systems (Articles 14 and 15). In addition, according to Articles 11 to 13 of the EBPD, Member States shall also ensure that an energy performance certificate ("EPC") is issued for buildings or building units which are constructed, sold or rented out to a new tenant, along with periodic certification of buildings which are owned by public authorities and frequently visited by the public. Further, a voluntary common European Union certification scheme for the energy performance of non-residential buildings is also adopted. The EED includes a requirement for energy auditing (Article 8).

[436] Recital 19 of the EED states: "The provisions of the Union's public procurement directives should not however be affected."
[437] See question 7.3 at https://ec.europa.eu/energy/en/consultations/consultation-review-directive-201227eu-energy-efficiency.
[438] See the reaction of an anonymous stakeholder to question 2.1 of the 2015 public consultation on the EED.
[439] See the answers to question 2.3 of the 2015 public consultation on the EED.

Exhibit B.3.10 Provisions on schemes related to the assessment of a building (unit) in the EED and EPBD

	EED – mandatory energy audit	EPBD – energy performance certificates	EPBD – regular inspection
Background	Recital 24 - To tap the energy savings potential in certain market segments where energy audits are generally not offered commercially (such as small and medium-sized enterprises (SMEs)), Member States should develop programmes to encourage SMEs to undergo energy audits. Energy audits should be mandatory and regular for large enterprises, as energy savings can be significant.	Recital 22 - The prospective buyer and tenant of a building or building unit should, in the energy performance certificate, be given correct information about the energy performance of the building and practical advice on improving such performance. Information campaigns may serve to further encourage owners and tenants to improve the energy performance of their building or building unit. Owners and tenants of commercial buildings should also be encouraged to exchange information regarding actual energy consumption, in order to ensure that all the data are available to make informed decisions about necessary improvements. The energy performance certificate should also provide information about the actual impact of heating and cooling on the energy needs of the building, on its primary energy consumption and on its carbon dioxide emissions.	Recital 26 - Regular maintenance and inspection of heating and air- conditioning systems by qualified personnel contributes to maintaining their correct adjustment in accordance with the product specification and in that way ensures optimal performance from an environmental, safety and energy point of view. An independent assessment of the entire heating and air-conditioning system should occur at regular intervals during its lifecycle in particular before its replacement or upgrading. In order to minimise the administrative burden on building owners and tenants, Member States should endeavour to combine inspections and certifications as far as possible.
Content	Art. 8 (1) - Member States shall promote the availability to all final customers of high quality **energy audits** […] Art. 8 (4) - Member States shall ensure that enterprises that are not SMEs are subject to an **energy audit** carried out in an independent and cost-effective manner by qualified and/or accredited experts or implemented and supervised by independent authorities under national legislation by 5 December 2015 […]	Art. 11 (1) - Member States shall lay down the necessary measures to establish a **system of certification of the energy performance of buildings**. The energy performance certificate shall include the energy performance of a building and reference values such as minimum energy performance requirements in order to make it possible for owners or tenants of the building or building unit to compare and assess its energy performance. The energy performance certificate may include additional information such as the	Art. 14 (1) - Member States shall lay down the necessary measures to establish a **regular inspection of the accessible parts of systems used for heating buildings**, such as the heat generator, control system and circulation pump(s), with boilers of an effective rated output for space heating purposes of more than 20 kW. That inspection shall include an assessment of the boiler efficiency and the boiler sizing compared with the heating requirements of the building. The assessment of the boiler sizing does not have to be repeated as long as no

	Art. 2 (25) - 'energy audit' means a systematic procedure with the purpose of obtaining adequate knowledge of the existing energy consumption profile of a building or group of buildings, an industrial or commercial operation or installation or a private or public service, identifying and quantifying cost-effective energy savings opportunities, and reporting the findings;	annual energy consumption for non-residential buildings and the percentage of energy from renewable sources in the total energy consumption.	changes were made to the heating system or as regards the heating requirements of the building in the meantime. Art. 15 (1) - Member States shall lay down the necessary measures to establish a **regular inspection of the accessible parts of air-conditioning systems** of an effective rated output of more than 12 kW. The inspection shall include an assessment of the air-conditioning efficiency and the sizing compared to the cooling requirements of the building. The assessment of the sizing does not have to be repeated as long as no changes were made to this air-conditioning system or as regards the cooling requirements of the building in the meantime.
Time interval	Art. 8 (4) - […] and at least **every four years** from the date of the previous energy audit.	Art. 12 (2) - Member States shall require that, **when** buildings or building units are **constructed, sold or rented out**, the energy performance certificate or a copy thereof is shown to the prospective new tenant or buyer and handed over to the buyer or new tenant. Art. 11 (8) - The validity of the energy performance certificate shall not exceed 10 years.	Art. 14 (1) and Art. 15 (1) - Member States shall lay down the necessary measures to establish a **regular** inspection […] Art. 14 (3) - Heating systems with boilers of an effective rated output of more than 100 kW shall be inspected **at least every two years**. For gas boilers, this period may be **extended to four years**.
Subject	Art. 8 (1) - Member States shall promote the availability to **all final customers** of high quality energy audits […] - mandatory for large businesses - optional for SMEs and homes	Art. 12 (1) - Member States shall ensure that an energy performance certificate is issued for: (a) **buildings or building units which are constructed, sold or rented out** to a new tenant; and (b) **buildings** where a total useful floor area over 500 m² is **occupied by a public authority and frequently visited by the**	Art. 14 (1) – […] **systems used for heating buildings**, such as the heat generator, control system and circulation pump(s), with boilers of an **effective rated output** for space heating purposes **of more than 20 kW**. Art. 15 (1) – […] **air-conditioning systems** of an **effective rated output of more than 12 kW**.

		public. On 9 July 2015, this threshold of 500 m² shall be lowered to 250 m².	
Follow-up measures	Annex VI - Energy audits shall allow detailed and validated calculations for the **proposed measures so as to provide clear information on potential savings**.	Art. 11 (2) - The energy performance certificate shall include **recommendations for the cost-optimal or cost-effective improvement of the energy performance of a building or building unit**, unless there is no reasonable potential for such improvement compared to the energy performance requirements in force.	Art. 16 (1) - An inspection report shall be issued after each inspection of a heating or air-conditioning system. The inspection report shall contain the result of the inspection performed in accordance with Article 14 or 15 and include **recommendations for the cost-effective improvement of the energy performance of the inspected system**.

As buildings and building units have great potential to save energy, it is essential to first assess the actual energy-related performance of the building. Based on the various schemes represented above, a combination of measures can be suggested to improve the energy efficiency of the building (unit). The EPC needs to include recommendations 'for the cost-optimal or cost-effective improvement of the energy performance of a building or building unit'. The inspection report shall include recommendations 'for the cost-effective improvement of the energy performance of the inspected system'. And the energy audits need to propose measures 'so as to provide clear information on potential savings'. The EPCs, inspection reports and energy audits are therefore merely "a stimulus to action, rather than an energy saving action itself".[440]

Both the EED and the EPBD include provisions on the energy performance / energy consumption of a building / building unit. The Commission guidance note on Article 8 of the EED[441] already explored the synergies between the EPBD and the EED in this regard. A few of the most important conclusions from this guidance note are replicated below: "Article 11 of the EPBD imposes the obligation on Member States to establish a system of certification of the energy performance of buildings. This makes it possible for owners or tenants of a building to know its energy performance and compare it with others. According to Article 12 of the ESD, certification in accordance with Article 7 of Directive 2002/91/EC on the energy performance of buildings must be regarded as equivalent to an energy audit meeting the requirements set out in Article 12(1) and (2) of the ESD. However, *in recognition of the wider scope of energy audits under Article 8 of the EED, the EED no longer keeps this equivalence*." (emphasis added) "Therefore, energy performance certification in accordance with Article 11 of the EPBD, and inspections in accordance with its Articles 14 and/or 15, cannot automatically be regarded as equivalent to energy audits under Article 8 of the EED (which are e.g. based on measured data on energy consumption and load profiles for electricity, examine - where applicable - industrial operations or installations, including transportation, and allow detailed and validated calculations to provide information on potential savings). However, *it is possible that in specific cases (for instance when auditing office buildings of a large enterprise) certification and/or inspections under the EPBD in a given Member State may fulfil the requirements of Article 8 and Annex VI of the EED*." (emphasis added)

Given the fact that, according to the above Commission guidance note, the energy audits under the EED are no longer equivalent to – but may fulfil the requirements of - the energy performance certificates and/or inspections under the EPBD, a comparison between the various schemes is recommended, given their potential overlaps.

[440] B. Young, Concerted Action EPBD – Core Theme 2, 6th Energy Efficiency Co-ordination Group Meeting, November 2014, available at: https://www.energy-community.org/portal/page/portal/ENC_HOME/DOCS/3464147/07D2038B752D3F7EE053C92FA8C01D12.PDF

[441] Commission Staff Working Document, Guidance note on Directive 2012/27/EU on energy efficiency, amending Directives 2009/125/EC and 2010/30/EC, and repealing Directives 2004/8/EC and 2006/32/EC, Article 8: Energy audits and energy management systems Accompanying the document Communication from the Commission to the European Parliament and the Council Implementing the Energy Efficiency Directive – Commission Guidance, SWD(2013)447final.

Exhibit B.3.11 Potential overlap related to the various schemes to assess a building (unit)

Schemes related to the assessment of a building (unit)	EED – Art.8	EPBD – Art.11	EPBD – Art. 14-15
What is it about? (content)	Energy audit of a building or group of buildings, an industrial or commercial operation or installation or a private or public service	Energy performance certification of buildings	Inspection of the accessible parts of systems used for heating buildings and of air-conditioning systems
Who is it for? (target audience)	Mandatory for large enterprises Voluntary for SMEs and homes	Everybody who constructs, sells or rents out a building or building unit	Everybody who owns a boiler of an effective rated output for space heating purposes of more than 20 kW. Everybody who owns an air-conditioning system of an effective rated output of more than 12 kW
Method and process (the how)	Obtain knowledge of the existing energy consumption profile of a building or group of buildings through detailed and validated calculations, based on up-to-date, measured, traceable operational data	Calculate the energy performance of a building. Can include the annual energy consumption of the building and the percentage of energy from renewable sources.	Visual examination to assess the efficiency and the sizing of the systems in order to give recommendations on their energy performance. No testing or measurements required.
Time interval (the when)	Every 4 years from 5.12.2015	Regular. With regard to boilers with an effective rated output of more than 100 Kw, every two years. With regard to gas boilers, every four years.	Every four years.

Generally, the inspections, certifications and audits all relate to the energy consumption of buildings or technical building systems and therefore require thorough understanding of the energy efficiency of the system(s) installed.[442] In addition, inspections and audits are scheduled at regular intervals. The CA EPBD has further stressed that "[o]n the one hand, inspections tend to be seen not only as a check of proper maintenance, but also as an assessment of the energy efficiency of the systems. On the other hand, the system performance is assessed as part of the overall building performance, using available information on system characteristics or checking the conditions of the system components and their assembly on-site. There are several interactions that might occur between maintenance, inspections and certification procedures"[443]. Said in other words, "[s]ome of the activities of an energy audit carried out for the EED are similar to those for an inspection [or EPC] for the EPBD, although the purpose and level of detail is different".[444] For this reason, it has generally been acknowledged that some of the EPBD's and EED's requirements have been duplicated and have not been harmonized. The majority of respondents to the 2015 public consultation on the EED have indeed expressed

[442] See also: B. Young, Synergy (or not) between inspection and audit, EECG 7th meeting, Vienna, 17 March 2015, available at: https://www.energy-community.org/portal/page/portal/ENC_HOME/DOCS/3648169/12079584F6F271E4E053C92FA8C0B7F4.PDF

[443] CA EPBD, Certification – Core Theme 1, Nov. 2010, available at: http://www.epbd-ca.org/Medias/Pdf/CT_Reports_14-04-2011/CT1_Certification.pdf

[444] See also: CA EPBD, Training – Overview and Outcomes, Aug. 2015.

their concern as to the overlaps between the two Directives related to energy efficiency audits and energy performance certificates.[445]

Therefore, the CA EPBD has stated that "it might be interesting to evaluate the possibility to combine maintenance, inspection and certification of existing buildings", especially in those specific cases where certification and/or inspections under the EPBD in a given Member State may go hand in hand with energy audits – for instance when auditing office buildings of a large enterprise. For example, the intervals at which the assessments need to occur do not coincide.[446] The Concerted Action consequently highlighted this point, saying that they are "performed at different occasions and intervals, limiting the opportunity for shared activity. Carrying them out at the same time could offer significant opportunities for reducing costs and achieving more reliable results."[447]

Further energy savings (and further coordination and harmonization) can additionally be achieved when the apparent gap with regard to EPCs is corrected. Currently, EPCs are only issued for buildings or building units which are constructed, sold or rented out to a new tenant, and buildings where a total useful floor area over 500m² is occupied by a public authority and frequently visited by the public.[448] However, this means that currently occupied buildings (i.e. "existing buildings", or those buildings currently envisaged by the inspections and energy audits) do not have any EPCs. With approximately two thirds of the EU's residential buildings stock being owner occupied[449] and given the relatively long time spans between change of owners, Ecofys has rightly concluded that this represents a substantial potential for further energy savings triggered by EPCs (e.g. realisation of renovation possibilities described in the EPCs in owner occupied buildings).[450] Also, by including currently occupied buildings under the EPC legislation, a further synergy with energy audits and inspections can be achieved.

Harmonization and coordination at a practical and national level is, nonetheless, not straightforward. In most countries, regular inspections / certifications and energy audits are managed by different legislation and by different public authorities.[451] The establishment, at national or regional level, of one-stop-shops for delivering independent, tailor-made advice to homeowners, covering both technical and financial aspects of energy efficiency is therefore to be advocated. Further, according to CA EPBD, the regular inspection procedure is generally well-defined, while the audit procedure has not yet been properly established in many MS. This can be partly due to the much wider scope of an energy audit as it covers building structures, technical building systems and occupants' behaviour. Therefore, energy auditors could possibly prepare the inspections, but the inspectors cannot undertake energy audits without further training. Indeed, reporting templates for inspections and energy audits are different, reflecting their different purposes and procedures. Indeed, the methods to be used to establish the EPCs, the inspection reports and the energy audit reports differ as to their technical difficulty and complexity.[452] Nevertheless, respondents to the 2015 public consultation on the EPBD have suggested to link inspections and inspectors with the energy audit requirements and the energy service providers laid down in the EED.[453]

Further, numerous problems have also been reported with regard to the proper implementation of the EPCs at Member State level, which obviously will impede any harmonization with inspections and energy audits. First,

[445] See the answers to question 1.2 of the 2015 public consultation on the EED.
[446] While the EPBD does not specify what would be regarded as a 'regular inspection', it is the view of the European Commission services that inspections carried out at least every 7–8 years would be considered acceptable, whereas anything less frequent than every 10 years is likely to be problematic. See: Public Consultation on the Evaluation of the Energy Performance of Buildings Directive – questionnaire, 2015.
[447] CA EPBD, Training – Overview and Outcomes, Aug. 2015.
[448] On 9 July 2015, this threshold has been lowered to 250m².
[449] Buildings Performance Institute Europe (BPIE), Europe's buildings under the microscope. A country-by-country review of the energy performance of buildings, 2011.
[450] Ecofys, Ex-post evaluation of the application of Directive 2010/31/EU, Final report, Dec. 2015.
[451] This conclusion was made in CA EPBD, Training – Overview and Outcomes, Aug. 2015.
[452] See also on the differences between the inspections and the audits: B. Young, Concerted Action EPBD – Core Theme 2, 6th Energy Efficiency Co-ordination Group Meeting, November 2014, available at: https://www.energy-community.org/portal/page/portal/ENC_HOME/DOCS/3464147/07D2038B752D3F7EE053C92FA8C01D12.PDF.
[453] See the answers to question 75 and question 76 in: Ecofys, Public Consultation on the Evaluation of the EPBD, Final Report, Nov. 2015.

the interviews performed in the course of this study[454] have highlighted that, even though the EPC was designed to allow consumers to compare different buildings, it is now rather used as a sort of legislative requirement and certificates are based on 'national standards and performances', rather than on the actual usage of energy. Consequently, recommendations are based upon 'standard' interventions rather than tailored ones. Indeed, EPCs are based on theoretical calculations according to normalised assumptions on occupancy or consumption. They are not considered to give a reliable indication of how a building performs. Other more complex assessments, available on the commercial market, are based on real values and can be used by investors and property managers to assess building technical and financial performance of a building. A better EPC regime – accessible to the wider public – is therefore recommended. This is also proven by portfolio managers, who believe that EPCs do not deliver enough value and therefore often resort to more comprehensive certification schemes. Also as a result, there are two types of certificates in the UK: the notional energy performance certificate, comparing your building to a standard building, and the operational certificate which is only used for public buildings and record the actual use of energy in the building. Further, EPCs are generally not comparable across Europe and the experts producing the EPCs can therefore not go cross-border. Given the above, the following proposal was already suggested after the 2012 public consultation on the EPBD: it is highly recommended to adopt a single EU-wide calculation and certification scheme for energy efficiency in buildings.[455] This recommendation still stands today.

To conclude, the serious concern as to the overlaps between the EPBD and EED related to energy efficiency audits and energy performance certificates is grounded and a combination of these building assessment schemes should be further investigated – on the condition that harmonization and coordination at the national level is also further enforced.

Accreditation and training of experts

Inspections, certifications and energy audits are all to be carried out in an independent manner by qualified and/or accredited experts. Such independent experts are also required to install small-scale renewable energy systems. The Commission guidance note on Article 8 of the EED[456] explicitly states that synergies should be explored and consistency should be ensured between "the qualification/certification criteria and schemes of the EED and the EPBD […]". Whether and – potentially – how these synergies could be further enhanced is explored in the following. Also the experts referred to in the RESD are taken up in the comparison.

[454] Based upon the interviews with stakeholders in 10 Member States.
[455] European Commission, Public Consultation "Financial Support for Energy Efficiency in Buildings", Consultation Report, 2012.
[456] Commission Staff Working Document, Guidance note on Directive 2012/27/EU on energy efficiency, amending Directives 2009/125/EC and 2010/30/EC, and repealing Directives 2004/8/EC and 2006/32/EC, Article 8: Energy audits and energy management systems Accompanying the document Communication from the Commission to the European Parliament and the Council Implementing the Energy Efficiency Directive – Commission Guidance, SWD(2013)447 final.

Exhibit B.3.12 Provisions on accreditation and training of experts in the EED, EPBD and RESD

	EED – Art.8 + Art. 16 Energy auditors	EPBD – Art. 17 Independent experts	RESD – Art. 14(3) Installers
Background	Recital 25 - Where energy audits are carried out by in-house experts, the necessary independence would require these experts not to be directly engaged in the activity audited.	Recital 27 - A common approach to the energy performance certification of buildings and to the inspection of heating and air-conditioning systems, carried out by qualified and/or accredited experts, whose independence is to be guaranteed on the basis of objective criteria, will contribute to a level playing field […]. Recital 29 - Installers and builders are critical for the successful implementation of this Directive. Therefore, an adequate number of installers and builders should, through training and other measures, have the appropriate level of competence for the installation and integration of the energy efficient and renewable energy technology required.	Recital 49 - Information and training gaps, especially in the heating and cooling sector, should be removed in order to encourage the deployment of energy from renewable sources.
Expertise	Art. 8 (1) - Member States shall promote the availability to all final customers of high quality energy audits which are cost-effective and: (a) carried out **in an independent manner by qualified and/or accredited experts** according to qualification criteria; or (b) implemented and supervised by **independent authorities** under national legislation.	Art. 17 - Member States shall ensure that the energy performance certification of buildings and the inspection of heating systems and air-conditioning systems are carried out **in an independent manner by qualified and/or accredited experts**, whether operating in a self-employed capacity or employed by public bodies or private enterprises.	Art. 14 (3) - Member States shall ensure that **certification schemes or equivalent qualification schemes** become or are available by 31 December 2012 for installers of small-scale biomass boilers and stoves, solar photovoltaic and solar thermal systems, shallow geothermal systems and heat pumps.[457]

[457] In 2012, the Concerted Action RES reported that not all Member States were ready with the set-up of the certification schemes for the 5 technologies mentioned. Only 35% of Member States were ready with the certification for boilers and stoves installers, 50% for PV installers, 40% for solar thermal, 20% for shallow geothermal and 40% for heat pumps. See: BUILD UP Skills – EU overview report. Staff working document, Oct.2013 (revised in June 2014), available at: https://ec.europa.eu/energy/intelligent/files/library/doc/overview-report.pdf

	The energy audits referred to in the first subparagraph may be carried out by **in-house experts or energy auditors** provided that the Member State concerned has put in place a scheme to assure and check their quality, including, if appropriate, an annual random selection of at least a statistically significant percentage of all the energy audits they carry out.		
Accreditation schemes	Art. 16 (1) - Where a Member State considers that the national level of technical competence, objectivity and reliability is insufficient, it shall ensure that, by 31 December 2014, **certification and/or accreditation schemes and/or equivalent qualification schemes**, including, where necessary, suitable training programmes, become or are available for providers of energy services, energy audits, energy managers and installers of energy-related building elements as defined in Article 2(9) of Directive 2010/31/EU.	Art. 17 - Experts shall be **accredited** taking into account their competence.	Art. 14 (3) - Member States shall ensure that **certification schemes or equivalent qualification schemes** become or are available by 31 December 2012 […]. Those schemes may take into account existing schemes and structures as appropriate, and shall be based on the criteria laid down in Annex IV.
Public availability	Art. 16(3) - Member States shall make publicly available the certification and/or accreditation **schemes** or equivalent qualification schemes referred to in paragraph 1 […]. Member States shall take appropriate measures to make consumers **aware of the availability** of qualification and/or certification schemes in accordance with Article 18(1).	Art. 17 - Member States shall make available to the public **information on training and accreditations**. Member States shall ensure that either regularly **updated lists** of qualified and/or accredited experts or regularly updated lists of accredited companies which offer the services of such experts are made available to the public.	Art. 14 (4) - Member States shall make available to the public information on certification **schemes** or equivalent qualification schemes as referred to in paragraph 3. Member States may also make available the **list** of installers who are qualified or certified in accordance with the provisions referred to in paragraph 3.
Training programmes	Art. 8 (3) - Member States shall encourage training programmes for the qualification of energy auditors in order to facilitate sufficient availability of experts.	Art. 20 (3) - Member States shall ensure that guidance and training are made available for those responsible for implementing this Directive. Such guidance and training shall address the importance of improving energy	Annex IV – 2. Biomass, heat pump, shallow geothermal and solar photovoltaic and solar thermal installers shall be certified by an accredited training programme or training provider.

	Art. 16 (1) - Where a Member State considers that the national level of technical competence, objectivity and reliability is insufficient, it shall ensure that, by 31 December 2014, certification and/or accreditation schemes and/or equivalent qualification schemes, including, where necessary, suitable training programmes, become or are available for providers of energy services, energy audits, energy managers and installers of energy-related building elements as defined in Article 2(9) of Directive 2010/31/EU.	performance, and shall enable consideration of the optimal combination of improvements in energy efficiency, use of energy from renewable sources and use of district heating and cooling when planning, designing, building and renovating industrial or residential areas.	3. The accreditation of the training programme or provider shall be effected by Member States or administrative bodies they appoint. The accrediting body shall ensure that the training programme offered by the training provider has continuity and regional or national coverage. The training provider shall have adequate technical facilities to provide practical training, including some laboratory equipment or corresponding facilities to provide practical training. The training provider shall also offer in addition to the basic training, shorter refresher courses on topical issues, including on new technologies, to enable life-long learning in installations. The training provider may be the manufacturer of the equipment or system, institutes or associations. 4. The training leading to installer certification or qualification shall include both theoretical and practical parts. At the end of the training, the installer must have the skills required to install the relevant equipment and systems to meet the performance and reliability needs of the customer, incorporate quality craftsmanship, and comply with all applicable codes and standards, including energy and eco-labelling. 5. The training course shall end with an examination leading to a certificate or qualification. The examination shall include a practical assessment of successfully installing biomass boilers or stoves, heat pumps, shallow geothermal installations, solar photovoltaic or solar thermal installations.

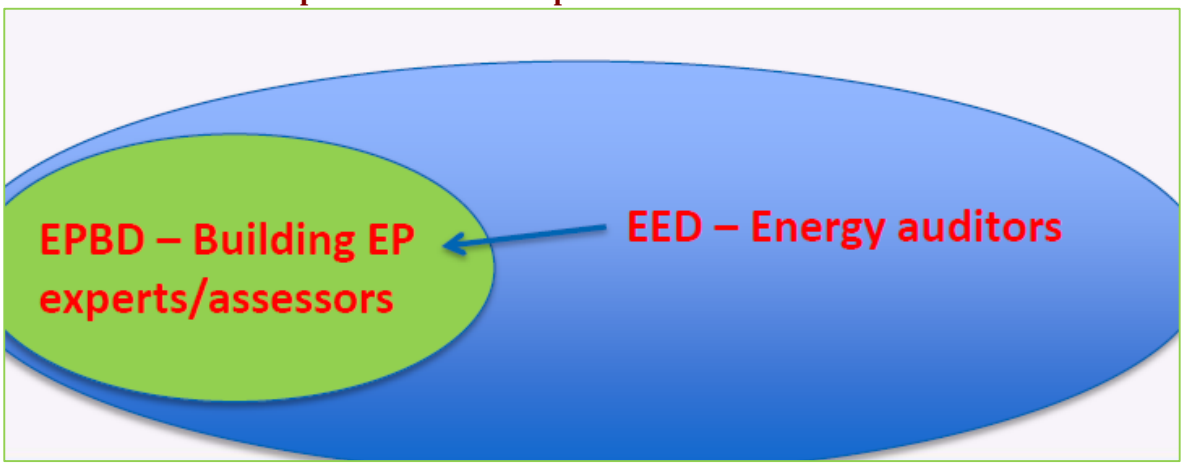
			6. (a) Accredited training programmes should be offered to installers with work experience, who have undergone, or are undergoing, the following types of training: […] (e) The installer certification should be time restricted, so that a refresher seminar or event would be necessary for continued certification.

The EPBD, EED and RESD all create the legal obligation for Member States to ensure that the experts, inspectors, energy auditors and installers may have the necessary accreditations and qualifications – although the EPBD does not explicitly oblige the Member States to ensure the availability of these accreditation and qualification schemes. The importance of training the experts is also underlined, especially in the EED and even more in the RESD.[458] CA EPBD has recognised that there are "significant potential interactions or intersections between the obligations and needs to be addressed by provisions in both the EPBD and EED regarding training, accreditation, certification and registration of experts"[459]. In its latest publication on synergies between EPBD, EED and RESD, it states that "[t]raining and accreditation schemes are an area of potential synergy".[460] And there is not only synergy, but also overlap "where certification in the EPBD, and to some extent the RESD, covers a subset of the energy professions that can be certified under the EED"[461]. This hangs closely together with the following two considerations:

- The EPBD increasingly focuses on the integration of renewable energy sources when calculating the 'minimum requirements of energy performance of buildings'.[462]
- The scope of the EED is much wider than the scope of the EPBD and energy auditing, hence, requires a wider range of professional experience and broader knowledge than inspections alone. In fact, energy auditing includes reporting on heating and air-conditioning systems in buildings and needs to draw a reliable picture of overall energy performance (ref. EPC). The EPBD is thus a subset of and may provide useful input to the energy audits in the EED. For example, it is possible for qualified energy auditors in the framework of the EED to be recognised as qualified experts to deliver EPCs in buildings. Qualified experts to deliver EPCs in buildings could be targeted for training to become qualified energy auditors.[463]

The figure below gives a simple illustration.

Exhibit B.3.13 EPBD experts versus EED experts



Source: J. Magyar, CA EED – Core Theme 6, CA EPBD meeting in Dubrovnik – outcomes on co-ordinated approaches to training and accreditation of experts (EPBD recast Article 17 and EED Article 16), Oct. 2014

All qualification/accreditation schemes and training programmes can thus have the same basis but differ in the details. CA EPBD is therefore proposing Member States to "develop and offer modular education schemes to train experts that can perform EPBD and EED assessments, leading to substantial cost reduction for building

[458] See, e.g.: BUILD UP Skills – EU overview report. Staff working document, Oct.2013 (revised in June 2014), available at: https://ec.europa.eu/energy/intelligent/files/library/doc/overview-report.pdf
[459] CA EPBD, Training – Overview and Outcomes, Aug. 2015.
[460] CA EPBD, 2016 Implementing the Energy Performance of Buildings Directive, Sept. 2015, p. 104, available at: http://www.epbd-ca.eu/outcomes/2011-2015/CA3-BOOK-2016-A-web.pdf
[461] CA EED, Consumer information programmes, training and certification of professionals, July 2015.
[462] CA EPBD, Training – Overview and Outcomes, Aug. 2015.
[463] Commission Staff Working Document, Guidance note on Directive 2012/27/EU on energy efficiency, amending Directives 2009/125/EC and 2010/30/EC, and repealing Directives 2004/8/EC and 2006/32/EC, Article 8: Energy audits and energy management systems Accompanying the document Communication from the Commission to the European Parliament and the Council Implementing the Energy Efficiency Directive – Commission Guidance, SWD(2013)447final.

owners".[464] CA EPBD further states that "[m]odular training of experts has some benefits, e.g., experts can be trained specifically in the particular sector they are interested in, and can expand their training as and when they wish, without having to undergo training in the areas where they are already qualified." It is, in theory, possible that one and the same person could perform all building assessments if he passes the necessary exams and meets the obligatory requirements. There is hence the possibility to create true synergies and avoid duplicated efforts even though, currently, different accreditation/qualification schemes and modalities are foreseen in all three Directives, leading to the fact that different persons are providing the services of energy certification, regular inspection, auditing and the installation of small-scale renewable energy systems.

One important recommendation in order to create synergies is to work upon one harmonised set of definitions with regard to the quality schemes aiming at giving assurance regarding the skills of the energy expert. These schemes now have different names (including certification, qualification, label and accreditation) – at EU level and at national level - and the meaning of these words can be quite different from one country to another.[465] This may lead to insurmountable obstacles in discussions between people from different countries and having different native languages.

However, also in this case, harmonization and coordination at Member State level is not straightforward. Qualification and training remains a competence of Member States and, in most Member States, different ministries are responsible for – especially – the EPBD and the EED/RESD, also leading to different approaches with regard to the accreditation and/or qualification schemes and to the training programmes.[466] [467] Indeed, experts carrying out inspections, audits and EPCs need to fulfil different requirements with regard to their level of education and/or length of experience. In addition, CA EPBD has proven that there is currently still a lack of "accredited institutions offering the required training at sufficient quality" and "EPC assessors are often certified by a public compulsory procedure, while energy auditors are normally part of voluntary schemes", creating a difficult dialogue due to different interests.[468] Further, the fact that the EED allows for in-house experts to perform energy audits, while external experts are needed according to the EPBD is seen as an inconsistency or gap.[469] Also, the remark has been made that, while qualifications are achieved once and for all, certification needs to be reviewed every X number of years, leading to a clear inconsistency.

Further, the existing certification and qualification schemes for installers of small-scale renewable energy systems in buildings are so diverse among themselves that any harmonization with the schemes and training programmes foreseen under the EED and EPBD is impeded. As ADEME has demonstrated, "a scheme might be implemented by public authorities or private organisms, and both have proved to work. Some certifying bodies [for RES installers] comply with an international norm (such as ISO 17024) or have been accredited by the national body. Other bodies have been created by the stakeholders themselves, involved in the RES sector, and have been implemented following a collaborative initiative between installers' unions and industry sectors. Most of the schemes implemented have started with one technology (most often solar thermal installations or heat pumps) and some have then been extended to integrate other technologies. Beyond these intrinsic characteristics, it was found that the success of a scheme very much depends on the way in which it is implemented. In particular, a purely voluntary scheme and one linked to a subsidy programme will draw very different results. Training for RES installers may be provided by different training infrastructures depending on the country. The training structures may [or may not] be accredited."[470] After the 2012 public consultation on the renewable energy strategy, some conclusions were already drawn with regard to the certification and

[464] CA EPBD, Training – Overview and Outcomes, Aug. 2015.
[465] This recommendation has also been given be ADEME with regard to the RES industry. See: ADEME, QualiCert Publishable report - Quality certification & accreditation for installers of small-scale renewable energy systems, supported by Intelligent Energy Europe, 2012.
[466] See, e.g.: ENFORCE, Comparison of building certification and energy auditor training in Europe, Sept. 2010, available at: https://ec.europa.eu/energy/intelligent/projects/sites/iee-projects/files/projects/documents/enforce_european_comparison_energy_auditors_training_en.pdf
[467] It has therefore been proposed to install a central contact point at national level. See: CA EED, Availability of qualification, accreditation and certification schemes, Executive Summary 6.4 Consumer information programmes, training and certification of professionals, Nov. 2014
[468] Taken from: CA EPBD, Training – Overview and Outcomes, Aug. 2015.
[469] Ecofys, Public Consultation on the Evaluation of the EPBD, Final Report, Nov. 2015.
[470] ADEME, QualiCert Manual - A common approach for certification or equivalent qualification of installers of small-scale renewable energy systems in buildings, March 2011.

qualification schemes for installers of small-scale renewable energy systems.[471] In particular, the length and complexity of administrative procedures relating to authorisation, certification and licensing was identified as a key obstacle to further growth of renewables by most respondents.

Finally, also the implementation of Article 14(3) of the RESD in various Member States differs considerably.[472] In France, for example, a very strict interpretation is maintained as both certification and formal training are required. Other countries, on the other hand, have introduced the liberty to choose between the certification scheme or the equivalent qualification scheme. Also in France, certification has – in practice – become compulsory (it is extremely difficult to install e.g. photovoltaic panels if you are not certified). This political pressure against 'simple' qualifications has been a more general concern and has been seen in many forms. In Belgium, for example, even though certification is not obligatory, it is required in public procurement cases or for accessing certain subsidies. Not surprisingly, most installers of RES systems want to see this practice overturned, as equivalent qualification schemes take into account previous professional experience, without having the obligation to undergo numerous compulsory and recurrent training programmes; installers are, after all, constantly trained on the job. Also, installers of RES systems are very often electricians, plumbers, roofers, or other craft professionals who are already contributing to RES in buildings – therefore, equivalent qualification should suffice. SMEs are also highly in favour of the equivalent qualification schemes, as certification would limit market access for SMEs (due to their high costs) and, currently, only 1 to 2 percent of companies in Europe are certified. Therefore, the mid-term evaluation on the RESD has concluded, amongst others, that the "guidelines for certification or qualification training should be more specific as to the depth and length of training. However, this should take into account past and ongoing efforts in Member States, as some already have well organised certification and training in place."[473]

To conclude, there is a high potential for overlap between the EED, EPBD and RESD with regard to the accreditation and training systems for experts. Further coordination and integration, at EU and at national level, is recommended.

B.3.4 Conclusions

The comparative analysis of the EED, EPBD and RESD carried out has uncovered that there is great synergy with regard to their objective. This conclusion has been corroborated through the 2015 ex-post evaluation of the EPBD.[474] The related report has stated the following: "The EPBD and the EED have linked effects on the realisation of the objectives of the EPBD".[475] In addition, "[a]s the EPBD aims to reduce the energy consumption of buildings as well as to increase the use of energy from renewable sources, the EPBD is also connected to the Renewables Directives (2009/28/EC) (RED) and vice versa." According to the stakeholders interviewed by Ecofys in the context of the EPBD ex-post evaluation, the streamlined approach of the EBPD and the RESD has led to an increased uptake of renewables in buildings.

However, there have been some important overlaps between the EED, EPBD and RESD which cause inconsistencies in implementation and may impact on the construction sector. Further to the differences in definitions, scope and minimum requirements for buildings, the most important issue of coherence relates to the EPCs, inspections and energy audits, and their related certification/qualification schemes and training programmes. Due to the existence of some overlaps with regard to the more substantive requirements of the EED, EPBD and RESD, an increasing number of stakeholders is suggesting to have the energy performance of buildings entirely and fully integrated in the EED[476] or to have only one directive entirely focusing on buildings (i.e. separating the EED into two directives – one for industry and another one for the building sector)[477], due to the varying nature of the different sectors (industry, transport, building sector) now covered

[471] European Commission, Executive Summary, Consultation on the renewable energy strategy, 2012.
[472] Based upon the interviews with stakeholders in 10 Member States.
[473] CE DELFT, Mid-term evaluation of the Renewable Energy Directive. A study in the context of the REFIT programme, prepared for DG Energy, April 2015.
[474] Ecofys, Ex-post evaluation of the application of Directive 2010/31/EU, Final report, Dec. 2015.
[475] Ibid, p. 165-166.
[476] Reaction from The Federation of Finnish Technology Industries to question 1.2 of the 2015 public consultation on the EED.
[477] Anonymous contribution to question 1.2 of the 2015 public consultation on the EED.

under the EED. The report on the 2014 public consultation on the review of progress on the 2020 energy efficiency objective, on its turn, suggests that the building-related provisions of the EED (i.e. Articles 4 and 5) should be incorporated in the EPBD to have a "single and powerful policy instrument".[478] Similarly to this suggestion to have all building-related provisions gathered within one directive, the report on the 2015 EPBD public consultation states that a single and robust renovation strategy should be required, "rather than provisions under EPBD and under EED separately and linking to each other".[479] On the whole, numerous stakeholders are of the opinion that it is confusing that the energy performance of buildings is targeted in three different directives.

[478] Report of the public consultation on the review of progress on the 2020 energy efficiency objective, 2014, available at: https://ec.europa.eu/energy/sites/ener/files/documents/2014_summary_report_energy2020.pdf
[479] Ecofys, Ex-post evaluation of the application of Directive 2010/31/EU, Final report, Dec. 2015, p. 160.

B.4 CONSTRUCTION-RELATED EU LEGAL INSTRUMENTS ENHANCING MOBILITY OF PROFESSIONALS IN THE EU AND FREE MOVEMENT OF SERVICES: SD, PQD AND LPD

The previous section of this coherence assessment dealt with product and energy efficiency requirements for materials, construction products or works in the construction sector. The instruments thus focused on the free movement of goods in the EU market and on the achievement of the EU´s overarching climate and energy objectives from the perspective of the construction sector. The current section focuses on the professionals in the construction sector and their free movement in the EU. It thus concerns the possibility for these persons to either establish themselves in a different Member State or to provide services on a temporary basis in another Member State. To this end, this chapter covers in particular the 2006 Services Directive and the 2005 Directive on the mutual recognition of professional qualifications, as amended in 2013.

Under this chapter, we will finally consider the coherence of this legal framework with Directive 2011/7/EU on late payments.

B.4.1 Objectives of the SD and PQD and their relevance to the construction sector

The Services Directive (SD) was adopted in 2006 with the objective of eliminating the remaining obstacles to the freedom of establishment for providers in the Member States and to the free provision of services between Member States.[480] It requires Member States to simplify the procedures that service providers need to comply with when setting up a business or providing services in another Member State. The SD does not deal with qualification requirements but regulates other aspects of free movement of professionals (e.g. tariffs, legal form requirements, ownership requirements, etc.).[481] The mutual recognition of professional qualifications is regulated by Directive 2005/36/EC (PQD). Pursuant to the PQD, a Member State which makes access to or the pursuit of a regulated profession in its territory contingent upon possession of specific professional qualifications shall recognise professional qualifications obtained in other Member States and which allow the holder of the said qualifications to pursue the same profession there, for access to and pursuit of that profession.[482] It also regulates partial access to a regulated profession and recognition of professional traineeships pursued in another Member State.[483] The system was modernised in 2013 through amendments to the 2005 PQD, an issue that was identified as a priority in the 2011 Single Market Act.[484] Improving access to professions, in particular through a more flexible and transparent regulatory environment in Member States, would facilitate the mobility of qualified professionals within the internal market and the cross-border provision of professional services.[485]

The SD and PQD thus aim at making the free provision of services within the Community as simple as within an individual Member State. They share the same general objective of removing obstacles to the free movement of services and enhancing professional mobility in the EU through different complementary measures, in line with the requirements of the TFEU.[486] Construction companies have a high potential for mobility due to the nature of the services they provide.[487] Moreover, there are many regulated professions in the construction

[480] Recitals Directive 2006/123/EC on services in the internal market.
[481] European Commission, Evaluation of the professional qualifications Directive (Directive 2005/36/EC), 5 July 2011
[482] Article 1 Directive 2005/36/EC on the mutual recognition of professional qualifications
[483] Article 1 Directive 2005/36/EC on the mutual recognition of professional qualifications
[484] Communication from the Commission, Single Market Act, Twelve levers to boost growth and strengthen confidence, "Working together to create new growth", COM(2011)206, SEC(2011)467
[485] Communication from the Commission to the European Parliament, the Council and the European Economic and Social Committee on Evaluating national regulations on access to professions, COM(2013)676, 2013.
[486] Article 3(1)(c) of the Treaty establishes the abolition of obstacles to the free movement of persons and services as one of the objectives of the Community. For nationals of the Member States, this includes, in particular, the right to pursue a profession, in a self-employed or employed capacity, in a Member State other than the one in which they have obtained their professional qualifications. Article 47(1) of the Treaty lays down that directives shall be issued for the mutual recognition of diplomas, certificates and other evidence of formal qualifications.
[487] The construction itself generally takes place at its final destination, and many other specialised services that contribute to it are also dispatched on site more or less regularly.

sector (e.g. architects, engineers, electricians, etc.).[488] Hence, the correct implementation of both Directives is important for ensuring the mobility of professionals in the construction sector in the EU internal market.

The objectives of the SD and PQD are overall considered complementary and coherent. Implementation reports on the SD and PQD[489] and stakeholders do not point to inconsistencies among the objectives of both instruments. On the contrary, each of the instruments is considered to clearly aim at achieving specific complementary objectives within the overall objective of achieving a fully functional internal market for services. In spite of progress made, the 2015 Communication on Upgrading the Single Market however still identifies several obstacles affecting mobility of professionals across Member States.[490] These issues of implementation and how they may affect the coherence of the instruments will be discussed below.

B.4.2 Scope and definitions of the SD and PQD

The PQD applies to all Member State nationals wishing to practise a regulated profession, on either a self-employed or employed basis, in a Member State other than the one in which they obtained their professional qualifications.[491] Both the PQD and the SD make a distinction between 'freedom to provide services' and 'freedom of establishment'. While the PQD covers the recognition of professional qualifications, use of titles and knowledge of languages as well as any other requirements under national legislation restricting access to a profession, the SD deals with other requirements, such as tariffs, legal form requirements or ownership requirements, among others. The SD covers a large variety of sectors ranging from traditional activities to knowledge-based services, including services in the construction sector.[492] Therefore both Directives are considered to complement each other whilst covering different aspects of the free movement of professionals.[493]

As mentioned in recital 31 of the SD: "This Directive is consistent with and does not affect Directive 2005/36/EC of the European Parliament and of the Council of 7 September 2005 on the recognition of professional qualifications. It deals with questions other than those relating to professional qualifications, for example professional liability insurance, commercial communications, multidisciplinary activities and administrative simplification. With regard to temporary cross-border service provisions, a derogation from the provision on the freedom to provide services in this Directive ensures that Title II on the free provision of services of Directive 2005/36/EC is not affected. Therefore, none of the measures applicable under that Directive in the Member State where the service is provided is affected by the provision on the freedom to provide services." For matters not relating to professional qualifications, the "Services Directive" applies to those regulated professions that fall within its scope.[494]
Consistency in the definitions is ensured through a specific cross-reference to the PQD in the definition of ´regulated professions´ under the SD.[495] Regulated profession is defined in the SD as ´a professional activity or a group of professional activities as referred to in Article 3(1)(a) of the PQD'.

[488] Commission Staff Working Document, Impact Assessment accompanying the Proposal for a Directive of the European Parliament and of the Council amending Directive 2005/36/EC on the recognition of professional qualifications and Regulation on administrative cooperation through the Internal Market Information System, COM(2011)883, 2011.
[489] Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions on the implementation of the Services Directive. A partnership for new growth in services 2012-2015, COM(2012) 261, 2012, European Commission, Evaluation of the professional qualifications Directive (Directive 2005/36/EC), 5 July 2011, Communication from the Commission to the European Parliament, the Council and the European Economic and Social Committee on Evaluating national regulations on access to professions, COM(2013)676, 2013 and Commission Staff Working Document, Detailed information on the implementation of Directive 2006/123/EC on services in the internal Market, SWD(2012) 148 final.
[490] Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, Upgrading the Single Market: more opportunities for people and business, COM(2015)550, 2015.
[491] Article 2, Directive 2005/36/EC on the mutual recognition of professional qualifications
[492] Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions on the implementation of the Services Directive. A partnership for new growth in services 2012-2015, COM(2012) 261, 2012.
[493] Commission Staff Working Document on the transposition and implementation of the Professional Qualifications Directive, SEC (2010) 1292.
[494] EC website, http://ec.europa.eu/growth/single-market/services/free-movement-professionals/qualifications-recognition/index_en.htm
[495] Article 4, 2006/123/EC on services in the internal market

B.4.3 Substantive requirements of the SD and PQD

The PQD regulates both the freedom of establishment and the freedom of providing services on a temporary basis for EU citizens performing a professional activity through different regimes. For the freedom of establishment, three recognition regimes are foreseen:

1. The automatic recognition system based on harmonised minimum training requirements, currently applicable i.a. to architects;
2. The automatic recognition system based on professional experience, currently applicable to certain craft activities;
3. The general system, applicable to all professions not covered by specific rules and to professionals that do not meet the conditions of the other recognition systems, i.a. engineers, architects whose title is not included in Annex V to the PQD, and craftsmen without sufficient working experience to access the automatic recognition system.

As for temporary service provision ('temporary mobility'), regulating the freedom to provide services, an EU citizen may occasionally and temporarily provide services in a Member State other than the one where he is established. The host Member State may only require a yearly declaration including details of insurance cover, nationality and professional qualifications. It may also conduct a prior check of these qualifications when the profession has public health and safety implications and is not subject to automatic recognition.

The amended PQD also provides for the introduction by 2016 of a European Professional Card (EPC), taking the form of an electronic certificate. The EPC will be delivered in the home MS and transmitted via the Internal Market System (IMI) to the host MS, to present the documents for the recognition process, both for permanent and temporal mobility.[496] However, it should be noted that the EPC has so far been only introduced for five professions, which do not concern the construction sector.

The SD, on the other hand, establishes a broad framework for ensuring the cross-border provision of services in the EU. Similarly to the PQD, the SD distinguishes between the freedom of establishment and the freedom of providing services on a temporary basis. The SD imposes obligations on Member States to remove obstacles to the freedom to provide services by service providers originating from another Member State. To this end, the SD requires Member States to simplify their procedures for providers to set up or carry out service activities in their territory. Member States are also required to establish Points of Single Contact where service providers can obtain information and carry out all formalities required to provide services in the country. The SD also prohibits Member States to implement authorisation schemes that would be discriminatory, disproportional or not justified by overriding reasons of public interest and to have residence or nationality conditions for providing services. Overall, the SD establishes the obligation for Member States to guarantee the free movement of services. While access requirements may exist for regulated professions in the Member State, these should be in line with the requirements of the PQD. Finally, the SD also establishes requirements for administrative cooperation between Member States. These include the obligation, for instance, to provide mutual assistance to each other and to establish electronic exchange of information systems.

The SD and PQD refer in several instances to the mutual complementarity of the requirements established under each instrument with a view to achieve the internal market for services, as illustrated in the section on scope above.

The 2011 evaluation of the 2005 PQD Directive identified several areas where the coherence and interaction between the procedures under both Directives could be enhanced. For instance, the Commission proposal for the 2013 amending PQD noted that the obligations for Member States to exchange information had to be reinforced similar to the alert system existing under the SD.[497] The proposal also noted that one of the major difficulties a citizen who is interested to work in another Member State is facing, is complexity and uncertainty of administrative procedures to comply with under the PQD. The report noted that the single points of contact

[496] Dr Katerina-Marina Kyrieri, "The Modernised Directive on Professional Qualifications and its Impact on National Legislations, 2014.

[497] Proposal for a Directive of the European Parliament and of the Council amending Directive 2005/36/EC on the recognition of professional qualifications and Regulation on administrative cooperation through the Internal Market Information System, COM(2011) 883, 2011.

established under the SD should be used for the purposes of the PQD. Such changes have been introduced in the amended PQD Directive, which, for instance, requires Member States to ensure that certain information is available online and regularly updated through the points of single contact referred to in Article 6 of Directive 2006/123/EC and that all requirements, procedures and formalities relating to matters covered by the PQD may be easily completed, remotely and by electronic means, through the relevant point of single contact or the relevant competent authorities.

Following the positive experience with the mutual evaluation under the SD, the EC proposal also recommended that a similar evaluation system should be included in the PQD, with a view to contribute to more transparency in the professional services market. A similar exercise of mutual evaluation has started under the PQD. Each Member State will be required to actively perform a review and to modernise their regulations on qualifications governing access to professions or professional titles.[498]

Several initiatives have thus been undertaken to improve the coherence of the parallel complementary procedures under the SD and the PQD, with a view to enhance the mobility of professionals in the EU. As noted by the Architect´s Council of Europe, the interplay between the SD and the PQD appears to work reasonably well as far as the architectural profession is concerned.[499] While the substantive requirements of the SD and PQD have thus been largely aligned, the implementation of the free movement of services in the construction sector in practice still raises problems. Stakeholders note, for instance, that mutual recognition in the construction sector is still not working in certain cases, even when professional qualifications are involved and the PQD also applies (such as with professional capacity, certification, and organisational health and safety requirements). Another particular obstacle, for example, highlighted by stakeholders is that some Member States only accept foreign documents if they are authenticated by local professionals (e.g. translators, notaries). Another stakeholder notes that the SD did not have a significant effect on the ground for the construction sector and related services due to a lack of sector-specific implementation (see section A.5 above). A recent study by Ecorys on simplification and mutual recognition in the construction sector under the Services Directive identified several obstacles to the free provision of services in the construction sector. The report concluded that several horizontal authorisation schemes identified in several Member States did not appear to be justified and proportionate under the Services Directive.[500] Moreover, the study identified a lack of mutual recognition rules in some Member States for requirements regarding technical/professional capacity, registration and certification, and organisational health and safety requirements.[501] The challenges related to implementation of the internal market rules for services are addressed in the next section.

The mutual evaluation exercises introduced under the SD and the amended PQD should help identify the existing obstacles to the free movement of services in the EU.

B.4.4 Challenges related to implementation of internal market rules

In spite of progress made towards the achievement of the internal market for services, the 2015 Communication on Upgrading the Single Market still identifies several obstacles in relation to the SD and the PQD, which affect mobility of professionals in other Member States.[502] The 2012 performance checks of the internal market for services, which focused particularly on the construction sector, noted that while the objectives of these Directives are shared, a number of significant challenges still existed for businesses, in particular where they wish to provide services in other Member States.[503] The report noted that businesses are often confronted with

[498] Communication from the Commission to the European Parliament, the Council and the European Economic and Social Committee on Evaluating national regulations on access to professions, COM(2013)676, 2013.
[499] Architect´s Council of Europe, Response to consultation on the internal market for services. 2 May 2015.
[500] Ecorys Nederland, in association with Delft, University of Technology, "Simplification and mutual recognition in the construction sector under the Services Directive, November 2015, published on the European Commission website, DG MARKT.
[501] Ecorys Nederland, in association with Delft, University of Technology, "Simplification and mutual recognition in the construction sector under the Services Directive, November 2015, published on the European Commission website, DG MARKT.
[502] Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, Upgrading the Single Market: more opportunities for people and business, COM(2015)550, 2015.
[503] Commission Staff Working Document on the result of the performance checks of the internal market for services (construction, business services and tourism) accompanying the Communication from the Commission to the European Parliament, the Council, the

requirements imposed on them in addition to those to which they are subject in the Member State where they are established. Problems are also considered to be a consequence of the incomplete or incorrect implementation of the SD, the PQD or the E-Commerce Directive.

The 2012 State of play of the internal market in the construction sector[504] noted that the level and intensity of regulation of the activities of the construction sector and the regulatory options taken vary considerably between the Member States: "There are Member States in which services activities in the construction sector are generally not regulated as such and where these activities can be provided by anybody, qualified professional or not. In these countries (Finland, Sweden, the Netherlands), individual construction projects and activities are subject to requirements related to environmental and spatial planning rules but are not reserved to specific service providers or professionals. In other Member States, construction services activities are in generally reserved to specific regulated professions. Between these two systems there is a multitude of regulatory situations in the Member States."[505] Business Europe noted in 2014 that the high number of regulated professions in some Member States hampers service provision or establishment across borders, and stressed the importance of the evaluation exercise taking place under the SD and PQD to remove such barriers to the free movement of services.[506]

The Commission Staff Working Document on the results of the performance checks highlights a number of instances of deficient implementation of the SD and the PQD which jointly affect the mobility of professionals in the construction sector.[507] The report points, for instance, to the fact that, in the construction sector, some Member States carry out prior checks of qualifications for professions that should benefit from automatic recognition, such as architects. It also identifies additional notification or authorisation obligations and insurance obligations. The specific report on the construction sector also notes that most Member States do not seem to impose any horizontal authorisation on construction service providers.[508] However, some Member States seem to have authorisation schemes under the SD which apply to economic activities / services in a rather horizontal manner, thus affecting also the construction sector.

The 2015 study on simplification and mutual recognition in the construction sector under the Services Directive, moreover, identified several horizontal authorization schemes which do not appear justified on the basis of the Services Directive.[509] Moreover, stakeholders noted in this study that there are still important problems with the provision of services in another Member State. For example, stakeholders point to problems relating to the understanding of documentary requirements (e.g. whether a translation is required), the limitation to locally registered professionals for submitting designs when applying for building permits or very costly insurance obligations to be recognised in other Member States.[510] Finally, it was found that:" many companies choose not to work cross-border due to these problems. If cross border services are provided, a number of different strategies are used to circumvent problems, such as setting up a joint venture with a local company, or hiring a local architect or firm to handle administrative procedures."[511]

The 2012 Communication on the implementation of the Services Directive also found that requirements based on nationality or residence, even though prohibited under the SD and actively removed by Member States,

European Economic and Social Committee and the Committee of the Regions on the implementation of the Services Directive. A partnership for new growth in services 2012-2016, COM(2012)261 and SWD(2012)147, 2012.

[504] 2012 State of play of the internal market in the construction sector, Background Note Expert Group Meeting 22nd March 2012.

[505] Ibid.

[506] Business Europe, "Remaining obstacles to a true single market for services, 15 December 2014.

[507] Commission Staff Working Document on the result of the performance checks of the internal market for services (construction, business services and tourism) accompanying the Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions on the implementation of the Services Directive. A partnership for new growth in services 2012-2016, COM(2012)261 and SWD(2012)147, 2012.

[508] 2012 State of play of the internal market in the construction sector, Background Note Expert Group Meeting 22nd March 2012.

[509] Ecorys Nederland, in association with Delft, University of Technology, "Simplification and mutual recognition in the construction sector under the Services Directive, November 2015, published on the European Commission website, DG MARKT.

[510] Ecorys Nederland, in association with Delft, University of Technology, "Simplification and mutual recognition in the construction sector under the Services Directive, November 2015, published on the European Commission website, DG MARKT.

[511] Ecorys Nederland, in association with Delft, University of Technology, "Simplification and mutual recognition in the construction sector under the Services Directive, November 2015, published on the European Commission website, DG MARKT.

were still applied in specific sectors, including in one Member State in the construction sector.[512] This means that a service provider has to be a national of the country where the service is provided or be resident in the country to start a business or, in the case of a company that its registered office has to be located in the Member State.

The performance check for the construction sector notes that the *cumulative application* of internal market rules, including the SD and PQD, lacks consistency and coherence.[513] For example, tariff or legal form requirements applicable to certain professional services cannot be tentatively applied to cross-border providers on the basis of Article 5(3) of the PQD (since they are not directly linked with professional qualifications). Member States are only allowed to impose such rules on cross-border service providers if they are justified under Article 16 of the SD. Article 16 SD ensures that Member States shall not make access to or exercise of a service activity in their territory subject to compliance with any requirements which do not respect the principles of non-discrimination, necessity and proportionality and prohibits the introduction of specific requirements affecting the free provision of services, such as residency or authorisation requirements, in national legislation. The 2015 Communication on upgrading the single market announced a first step aiming to enhance the notification procedure for Member States to enable the Commission to verify the conformity and proportionality of new regulatory measures adopted in the Member States possibly affecting the free movement of services.[514]

Problems sometimes arise from misinterpretation of Annex VII PQD, which sets out evidentiary rules for certain requirements but does not govern them substantively: compliance with requirements such as good repute, physical or mental health, financial standing, insurance or absence of criminal convictions is proven in accordance with Annex VII PQD but the imposition of such requirements is governed by the SD, namely by Articles 15(2)(d) and 23 SD.

The problems highlighted above are confirmed by stakeholders throughout the interviews carried out under this study. Several stakeholders highlight problems with the implementation of the SD and PQD in the construction sector affecting the freedom to provide services in another Member State. For example, one stakeholder noted that certain Member States only accept documents authenticated by local professionals, such as translators or notaries. Another stakeholder notes that there is, to some extent, in practice an obligation to hire local people instead of working with people from their country of establishment with equivalent requirements due to the practical obstacles on the ground.

B.4.5 Directive 2011/7/EU on late payments

Many payments in commercial transactions between economic operators or between economic operators contract are laid down in the general commercial conditions. Although the goods are delivered or the services performed, many corresponding invoices are paid well after the deadline. Such late payment negatively affects liquidity and complicates the financial management of undertakings.[515] One of the priority actions of the Commission Communication of 26 November 2008 entitled 'European Economic Recovery Plan' was the reduction of administrative burdens and the promotion of entrepreneurship, including through the timely payments of invoices.[516] Directive 2011/7/EU on combating late payments (LPD) aims at combating late payment in commercial transactions, in order to ensure the proper functioning of the internal market, thereby

[512] Commission Staff Working Document, Detailed information on the implementation of Directive 2006/123/EC on services in the internal Market Accompanying the document Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions on the implementation of the Services Directive. A partnership for new growth in services 2012-2015, SWD (2012) 148 final, p. 25.
[513] Commission Staff Working Document on the result of the performance checks of the internal market for services (construction, business services and tourism) accompanying the Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions on the implementation of the Services Directive. A partnership for new growth in services 2012-2016, COM(2012)261 and SWD(2012)147, 2012.
[514] Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, Upgrading the Single Market: more opportunities for people and business, COM (2015)550, 2015.
[515] Recital 3, Directive 2011/7/EU on combating late payment in commercial transactions
[516] Recital 7, Directive 2011/7/EU on combating late payment in commercial transactions

fostering the competitiveness of undertakings and in particular of SMEs.[517] The overarching purpose of the Directive is to improve business cash flow in EU Member States, and to facilitate the functioning of the internal market through the elimination of barriers related to cross-border commercial transactions. Another important objective is to contribute to the development and improvement of the Single Market.[518]

The Directive ultimately aims at contributing to the free provision of services due to the elimination of obstacles to the internal market resulting from the late payments of invoices by businesses established in another Member State. Nevertheless, it regulates a different matter than the SD and PQD. The correct implementation of the LPD should however contribute to a level-playing field for EU businesses in the construction sector providing services in another Member State, in particular for SMEs. No specific inconsistencies were raised between the LPD and the SD in the implementation reports and interviews with stakeholders.

B.4.6 Conclusions

The SD and PQD aim at making the free provision of services within the Community as simple as within an individual Member State. They share the same general objective of removing obstacles to the free movement of services and enhancing professional mobility in the EU through different complementary measures. Both apply to the mobility of professionals in the construction sector.

The objectives of the SD and PQD are overall considered complementary and coherent. Implementation reports and stakeholders do not point to inconsistencies among the general and specific objectives of both instruments.

The PQD covers the recognition of professional qualifications, use of titles and knowledge of languages. Moreover, the mutual evaluation exercise under the PQD requires Member States to examine additional requirements under their legal system restricting access to a profession. The SD deals with other requirements hindering the provision of services in another Member States, including, for example, tariffs, legal form or ownership requirements. As mentioned by the European Parliament: "for matters not relating to professional qualifications, the "Services Directive" applies to those regulated professions that fall within its scope."[519] The SD covers a large variety of sectors ranging from traditional activities to knowledge-based services, including services by construction companies and professionals. Therefore the two Directives are considered to complement each other whilst both covering different aspects of the free movement of professionals.

The Directives cross-refer one to each other in several instances. Consistency in the definitions is, for example, ensured through specific cross-references to the PQD definition within the SD. The 2011 evaluation of the 2005 PQD Directive identified several areas where the coherence and interaction between the procedures under both Directives could be enhanced. Such changes have been introduced in the amended PQD Directive, which now, for instance uses the points of single contact referred to in Article 6 of Directive 2006/123/EC for making available information on the PQD and for easy and remote completion of all requirements, procedures, formalities related to the PQD.

While the substantive requirements of the SD and PQD have thus been largely aligned, the implementation of the free movement of services in the construction sector in practice still raises important problems. Stakeholders note, for instance, that mutual recognition in the construction sector is still not working in certain cases.

The Commission Staff Working Document on the results of the performance checks highlights a number of instances of deficient implementation of the SD and the PQD which jointly affect the mobility of professionals in the construction sector. These concern authorisation requirements for automatically recognised professions (i.e. architects), residence or nationality requirements and insurance obligations. The performance check for

[517] Article 1, Directive 2011/7/EU on combating late payment in commercial transactions
[518] Valdani Vicari Associati, Technopolis Group, Ernst & Young for the European Commission, "Ex-post evaluation of the late payment directive", November 2015.
[519] EC website, http://ec.europa.eu/growth/single-market/services/free-movement-professionals/qualifications-recognition/index_en.htm

the construction sector also notes that the *cumulative application* of internal market rules, including the SD and PQD, lacks consistency and coherence.

While the LPD ultimately also aims at contributing to the free provision of services due to the elimination of obstacles from the late payments of invoices, it regulates a different matter from the SD and PQD. The overarching purpose of the Directive is to facilitate the functioning of the internal market through the elimination of barriers related to cross-border commercial transactions. No specific inconsistencies were raised between the LPD and the SD in the implementation reports and interviews with stakeholders.

B.5 OTHER POTENTIAL COHERENCE ISSUES BETWEEN CONSTRUCTION-RELATED EU LEGAL INSTRUMENTS ON ENERGY EFFICIENCY AND INTERNAL MARKET THAT WERE GROUPED INTO DIFFERENT BLOCKS

After having discussed coherence within each of the three main blocks of EU legal instruments identified for the purpose of this fitness check, some of these pieces of EU legislation are also connected with one another outside of these groups. This is already reflected through the cross-references within the legal text themselves. The following figure systematically lays down any cross-reference that the legal act in each column includes to any of the other legal EU instruments. The green block refers to the coherence subsection on the EPBD, EED and RESD; the orange block to the coherence subsection on the EDD, ELD and CPR; and the purple block to the coherence subsection on the PQD, SD and LPC.

Exhibit B.5.1 Cross-references

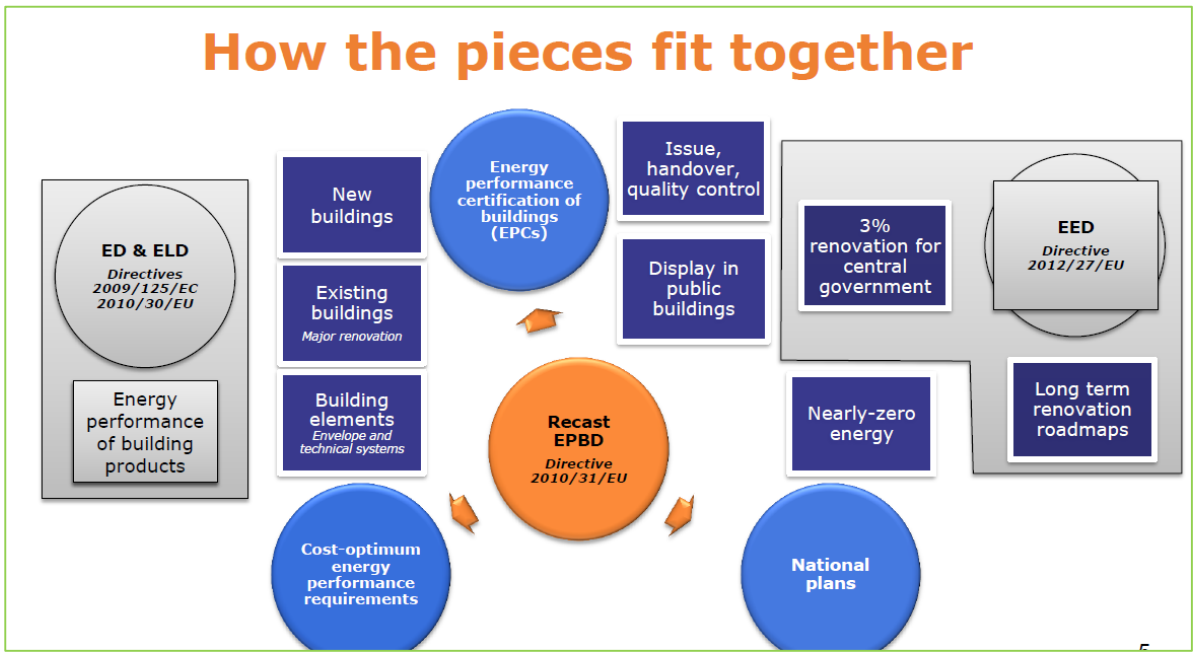
	EPBD	EED	RESD	EDD	ELD	CPR	PQD	SD	LPD
EPBD		Rec.17, Rec.30, Rec.59, Art.5, Art.9, Art.16, Art.17, Art.24, Art.27, Annex III	[old EPBD] Rec.17, Rec.48						
EED	[old EED] Rec.21, Art.5, Art.10, Art.14, Art.15		[old EED] Rec.17						
RESD	Rec.5, Rec.6, Art.9(3)(c), Annex I	Rec.14, Art.15, Art.24							
EDD	Rec.12	Rec.58, Rec.59, Art.27, Annex III, Annex V	[old EDD] Rec.17		Rec.2, Rec.7, Art.10(3)(a)				
ELD	Rec.12	Rec.58, Rec.63, Art.6, Art.27, Annex III		[old ELD) Rec.35					
CPR									
PQD	Rec.30		Rec.50, 51					Rec.31, Art.3(1)(d), Art. 4(11), Art.5(4), Art.15(2)(d), Art.17(6)	
SD							Rec. 5, Art.57, Art.57a		
LPD									

The cross-references also reveal connections between the EPBD – EED and the EDD – ELD, and between the EED – EPBD – RESD and the PQD. An additional connection is made between the EPBD and the CPR. In addition, the CPR, in Annex I, outlines basic requirements for construction works: although meant to serve as the basis for designing harmonised technical specifications for placing products in the market, Member States, while regulating construction services, subject to the Service Directive, must take into consideration these basic requirements. In doing so the CPR takes precedent, as prescribed by Article 3(1) SD.

B.5.1 EPBD – EED and EDD – ELD

The list of EU legal instruments identified for the purpose of this fitness check includes four directives that directly relate to energy, and more particularly to energy performance of buildings: Directive 2012/27/EU (EED), Directive 2010/31/EU (EPBD), Directive 2009/125/EC (EDD) and Directive 2010/30/EU (ELD). The following figure illustrates how these four pieces of legislation relate to each other.

Exhibit B.5.2 Connection between EPBD - EED - EDD and ELD



Source: Ferreira, V. (2015) State of play of EU policy on energy efficiency in buildings, EUSEW

The EPBD and the EED are generally considered to be "the EU's main legislation when it comes to reducing the energy consumption of buildings".[520] In addition, the ELD and the EDD mainly focus on the consumption of energy-related products (e.g. heating and lighting).[521] As the inspection of heating and air-conditioning systems is laid down in the EPBD, the EPBD is already often linked to the EDD and the ELD. Equally, the energy-related products possibly in scope of the EDD and the ELD, though not covered by any secondary regulation so far (e.g. windows or insulation materials), can have a direct impact on the energy performance of buildings (i.e. EPBD).[522]

[520] https://ec.europa.eu/energy/en/topics/energy-efficiency/buildings
[521] See also: Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions on Resource Efficiency Opportunities in the Building Sector, COM(2014)455 final.
[522] Ecofys, Ex-post evaluation of the application of Directive 2010/31/EU, Final report, Dec. 2015, p. 163.

Scope of the EED, EPBD, EDD and ELD

Within the context of the Roadmap to a Resource Efficient Europe[523] and the Strategy for the Sustainable Competitiveness of the Construction Sector and its Enterprises[524], the four directives aim to improve the energy performance of buildings throughout their lifecycle.[525] However, each have their specific scope, as the EED focuses on energy efficiency in general, the EPBD focuses on the energy performance of buildings and the EDD and ELD both establish particular requirements and/or means to provide information on energy consumption with regard to energy-related products. It is to be noted that the ELD and EED addresses the supply side of the product markets, while the EDD addresses the demand side, and the EPBD addresses both sides.

Exhibit B.5.3 Objectives / scope of the EED, EPBD, EDD and ELD

EED	EPBD	EDD	ELD
Art. 1(1) – This Directive establishes a **common framework of measures for the promotion of energy efficiency** within the Union in order to ensure the achievement of the Union's 2020 20 % headline target on energy efficiency and to pave the way for further energy efficiency improvements beyond that date. It lays down rules designed to remove barriers in the energy market and overcome market failures that impede efficiency in the supply and use of energy, and provides for the establishment of indicative national energy efficiency targets for 2020.	Art. 1(1) – This Directive promotes the improvement of the **energy performance of buildings** within the Union, taking into account outdoor climatic and local conditions, as well as indoor climate requirements and cost-effectiveness.	Art. 1(1) - 1. This Directive establishes a framework for the setting of Community ecodesign requirements for **energy-related products** with the aim of ensuring the free movement of such products within the internal market.	Art. 1(1) - This Directive establishes a framework for the harmonisation of national measures on end-user information, particularly by means of labelling and standard product information, on the consumption of energy and where relevant of other essential resources during use, and supplementary information concerning **energy-related products**, thereby allowing end-users to choose more efficient products.

The EPBD and the EDD/ELD do not overlap with regard to their objectives as the EPBD focuses on the building level, components and systems, while the EDD and the ELD target energy-related products.[526] First, however, it is necessary to have a look at the definitions involved.

[523] Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions on Roadmap to a Resource Efficient Europe, COM(2011)571 final.
[524] Communication from the Commission to the European Parliament and the Council on Strategy for the sustainable competitiveness of the construction sector and its enterprises, COM(2012)433 final.
[525] See also with regard to the environmental performance of buildings: Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions on Resource Efficiency Opportunities in the Building Sector, COM(2014)455 final.
[526] Ecofys, Ex-post evaluation of the application of Directive 2010/31/EU, Final report, Dec. 2015, p.46.

Exhibit B.5.4 Definitions in the EED, EPBD, EDD and ELD

	EED	EPBD	EDD	ELD
Technical building system	/	Art. 2(3) – 'Technical building system' means technical equipment for the heating, cooling, ventilation, hot water, lighting or for a combination thereof, of a building or building unit;	(the word building system is not used in the EDD, but 'heating and water heating equipment' as well as 'HVAC (heating ventilating air conditioning) systems' are used, without providing a definition)	/
Air-conditioning system	/	Art. 2(15) – 'Air-conditioning system' means a combination of the components required to provide a form of indoor air treatment, by which temperature is controlled or can be lowered;	('HVAC (heating ventilating air conditioning) systems' is used in the EDD, without providing a definition)	/
Energy-related product	Recital 58 - In order to tap the considerable energy-saving potential of energy-related products, the implementation of Directive 2009/125/EC of the European Parliament and of the Council of 21 October 2009 establishing a framework for the setting of ecodesign requirements for energy-related products and Directive 2010/30/EU of the European Parliament and of the Council of 19 May 2010 on the indication by labelling and standard product information of the consumption of energy and other resources by energy-related products should be accelerated and widened. Priority should be given to products offering the highest energy-saving potential as identified by the Ecodesign Working Plan and the revision, where appropriate, of existing measures.	/	Art. 2(1) - 'Energy-related product', (a 'product'), means any good that has an impact on energy consumption during use which is placed on the market and/or put into service, and includes parts intended to be incorporated into energy-related products covered by this Directive which are placed on the market and/or put into service as individual parts for end-users and of which the environmental performance can be assessed independently;	Art. 2(a) - 'energy-related product' or 'product' means any good having an impact on energy consumption during use, which is placed on the market and/or put into service in the Union, including parts intended to be incorporated into energy-related products covered by this Directive which are placed on the market and/or put into service as individual parts for end-users and of which the environmental performance can be assessed independently;

Component	/	(no definition even though the word is used in the EPBD, see e.g. definition of 'air-conditioning system')	Art. 2(2) - 'Components and sub-assemblies' means parts intended to be incorporated into products which are not placed on the market and/or put into service as individual parts for endusers or the environmental performance of which cannot be assessed independently;	/
Energy efficiency	Art. 2(4) – 'energy efficiency' means the ratio of output of performance, service, goods or energy, to input of energy;	/	/	/

While the EPBD includes definitions for 'technical building system' and 'air-conditioning system', similar wording is used in the EDD, without however providing a definition or a cross-reference to the EPBD. Equally, the EDD includes a definition of 'components and sub-assemblies', while the EPBD uses the word 'components' without referencing a definition. Ecofys has therefore concluded that "to support implementation, the definitions within the Directives (as e.g. definitions of "system" or "component") could be streamlined".[527] It is to be further noted that none of the directives includes a definition of 'energy efficiency' even though these words are used throughout. Therefore, a definition of 'energy efficiency' aligned with the EED should be added.[528]

Technical building systems

According to Article 8 EPBD, Member States are to set system requirements for new, the replacement of and upgrading of technical building systems, including at least heating systems, hot water systems, air-conditioning systems and large ventilation systems (or combinations of such systems). Several stakeholders have argued that incoherence issues with the EDD/ELD may arise related to the regulation of systems, although – according to Ecofys – their comments generally lack argumentation.[529] For example, some have stated that optimizing individual products could be to the detriment of system performance, hence concluding that product and system approaches could be in conflict. However, no example has been put forward, and the argument has therefore lost its attractiveness. After having indeed considered all arguments, Ecofys reached the conclusion that "[o]verall, the products and systems approach (under E[D]D/ELD and EPBD respectively) may be considered compatible, and may complement each other to realize a large energy savings potential. The E[D]D and ELD guarantee a good quality of the individual heating product, also if used for retrofit, while the EPBD addresses the performance of the whole building, mainly for new buildings." Indeed, the EDD and ELD set specific values for the efficiency of certain energy related products, while the EPBD sets energy performance standards via the cost-optimality process at building or component level. Even though there is no incoherence, the links between products, systems and buildings can still be less fragmented.[530]

However, ecodesign requirements for individual product groups which are created under the EDD and which are laid down in specific regulations, may overlap with Article 8 EPBD. An example mentioned in the Ecofys study is the "package label" for boilers[531].[532] Ecofys has also added that "[t]he potential for contradictions will probably grow with provisions of Ecodesign on energy related products, like windows, which are also

[527] Ecofys, Ex-post evaluation of the application of Directive 2010/31/EU, Final report, Dec. 2015, p.46.
[528] This suggestion has also been included in Draft Opinion of the Committee on the Environment, Public Health and Food Safety for the Committee on Industry, Research and Energy on the proposal for a regulation of the European Parliament and of the Council setting a framework for energy efficiency labelling and repealing Directive 2010/30/EU (COM(2015)0341 – C8-0189/2015 – 2015/0149(COD)).
[529] Ecofys, Final technical report Evaluation of the Energy Labelling Directive and specific aspects of the Ecodesign Directive ENER/C3/2012-523, June 2014, pp. 43-44, available at: https://ec.europa.eu/energy/sites/ener/files/documents/Final_technical_report-Evaluation_ELD_ED_June_2014.pdf
[530] This view was also given as an answer to Q76 in Ecofys, Public Consultation on the Evaluation of the EPBD, Final Report, Nov. 2015. For some examples, see: J. Railio, Is the Eco-design Directive compatible with the Energy Performance Buildings Directive?, REHVA journal, Jan. 2011, pp. 28-29, available at: http://www.rehva.eu/fileadmin/hvac-dictio/01-2011/art_jorma-railio-epbd-erp.pdf.
[531] Regulations (EU) No 811 & 812/2013 with regard to energy labelling of space heaters, combination heaters, packages of space heater, temperature control and solar device and packages of combination heater, temperature control and solar device, and of water heaters, hot water storage tanks and packages of water heater and solar device, and Regulations (EU) No 813 & 814/2013 with regard to ecodesign requirements for space heaters and combination heaters, and for water heaters and hot water storage tanks establish minimum requirements and an energy labelling scheme for space heaters and water heaters. These Regulations only came into force on 26 September 2015 and their impacts on the construction sector therefore fall outside of the scope of this study (i.e. 2004-2014).
[532] See, e.g., Ecofys, Ex-post evaluation of the application of Directive 2010/31/EU, Final report, Dec. 2015: "The Ecodesign Directive sets requirements of products such as boilers or air-conditioners and as such does in principal not create an overlap with the EPBD. An exception is the new "package label" for boilers that does create an overlap with the system requirement Article 8 of the EPBD. It remains to be seen whether this overlap will lead to issues in implementation. As a product-specific approach (e.g., an energy efficient boiler) does not consequently lead to an energy efficient building. It is important to reach for the highest efficiency in products to support energy efficiency in buildings and to reduce energy costs. But the highest overall efficiency will only be reached by optimising the entire system by effectively matching – if applicable e.g. in replacements or upgrades new and existing – components [DENA, 2011]. It can be concluded that the product approach of the ED and the system efficiency approach of the EPBD are complementary approaches, with the exception of the package label for boilers."

addressed by component requirements of the cost optimality process under the EPBD."[533] It is therefore recommended to explore potentials for including system aspects in the EDD and ELD.[534]

Inputs and outputs

Articles 3 to 7 of the EPBD relate to the calculation of the energy performance of buildings, the methodology of which shall be adopted at national or regional level. As the EPBD uses the EU-wide primary energy factors (PEF) in calculating the building system efficiency requirements, it is recommended that the PEF are also used in the context of the EDD and ELD – even though there are arguments against using the PEF as these factors do not seem to be technology neutral.[535] In short, the EPBD, EDD and ELD would be more consistent if the required outputs of tests and measurements under the EDD and ELD are made directly compatible with the required data inputs under the EPBD.[536] It is to be noted that Ecofys refers to 'Mandate M480 for updating the set of CEN standards underlying the recast of the EPBD' and that "[d]uring recent discussions in M480, the argument came up that the CE marking, which is governed by the Common Provisions Regulation, might also be the place to define technical parameters that can be used as input into calculations of the energy performance of buildings rather than using Ecodesign for that purpose."[537]

Conclusion

The EED, EPBD, EDD and ELD all have different objectives which are well-aligned with each other and which do not overlap, given that the directives focus on energy efficiency at different levels in the building chain[538]. However, their synergies could be strengthened by streamlining the concepts of 'system', 'product' and 'component' and by focusing on overall system efficiency instead of single-minded measures. Further fragmentation can be avoided by requiring that the outputs under the EDD and ELD are directly compatible with the inputs under the EPBD. This conclusion is supported, inter alia, by the results from the ex-post evaluation of the application of the EPBD and by the results from the evaluation of the EDD.[539]

B.5.2 EPBD – CPR

The clear link between the EPBD and the EDD/ELD has been elaborated upon above as laying down the connection between energy efficiency in buildings and in related products (e.g. a boiler or an air-conditioning system). A similar link exists between the EPBD and the CPR, as the latter establishes harmonised rules for the marketing of construction products, hereby allowing the comparison of the energy performance of products from different manufacturers. As the EPBD takes a system approach while the CPR acts at product level, it is generally acknowledged that both directives do not overlap.[540] Nevertheless, the adoption of a new standard on sustainability or energy economy under the CPR could contribute to achieving the objectives of the EPBD. Annex I to the CPR establishes a list of basic requirements that shall constitute the basis for the preparation of standardisation mandates and harmonised technical specifications. Sustainable construction could be incentivised through the properties and performance of construction products and construction works through the Basic Requirements for construction works as defined in Annex I CPR. These Basic Requirements (BR) cover:

1) Mechanical resistance and stability,
2) Safety in case of fire,
3) Hygiene, health and the environment,

[533] Ecofys, Ex-post evaluation of the application of Directive 2010/31/EU, Final report, Dec. 2015, p. 164.
[534] Ecofys, Final technical report Evaluation of the Energy Labelling Directive and specific aspects of the Ecodesign Directive ENER/C3/2012-523, June 2014, pp. 4-5, available at: https://ec.europa.eu/energy/sites/ener/files/documents/Final_technical_report-Evaluation_ELD_ED_June_2014.pdf.
[535] More information on the PEF, and on the compatibility with the EPBD, can be found in: Ecofys, Final technical report Evaluation of the Energy Labelling Directive and specific aspects of the Ecodesign Directive ENER/C3/2012-523, June 2014, available at: https://ec.europa.eu/energy/sites/ener/files/documents/Final_technical_report-Evaluation_ELD_ED_June_2014.pdf
[536] Ecofys, Ex-post evaluation of the application of Directive 2010/31/EU, Final report, Dec. 2015, p. 164.
[537] Ecofys, Ex-post evaluation of the application of Directive 2010/31/EU, Final report, Dec. 2015, p. 164.
[538] This conclusion is, inter alia, supported by the European Environmental Citizens' Organisation for Standardisation (ECOS), in their reply to the 2015 EED open public consultation.
[539] Ecofys, Ex-post evaluation of the application of Directive 2010/31/EU, Final report, Dec. 2015; and CSES, Evaluation of Ecodesign Directive, 3rd stakeholder meeting, 18 January 2012, available at: http://www.cses.co.uk/upl/File/session-1.pdf
[540] See, e.g., Ecofys, Ex-post evaluation of the application of Directive 2010/31/EU, Final report, Dec. 2015, p. 156.

4) Safety and accessibility in use,
5) Protection against noise,
6) Energy economy and heat retention,
7) Sustainable use of natural resources.

Sustainable construction requirements for construction products would involve BR3 (hygiene, health and the environment), BR6 (energy economy and heat retention) and BR7 (sustainable use of natural resources).

The development of harmonised standards at EU level for sustainable or energy efficient construction products could therefore contribute to the achievement of the objectives of the EPBD. In particular, where the EDD adopts a product-based approach, the CPR considers the product in the lifecycle of the construction works. There is thus an opportunity to achieve important synergies between the CPR and the EPBD through a coordinated approach. Many stakeholders moreover clearly express a preference for regulating the issue of sustainable construction products through the CPR rather than the EDD for these same reasons.

Setting standards is considered the most direct and appropriate way to target sustainable construction. It is important to consider, however, that the development and implementation of EU standards is a timely and often costly process.

B.5.3 EED – EPBD – RESD and PQD - SD

Amongst others, Directive 2005/36/EC of the European Parliament and of the Council of 7 September 2005 on the recognition of professional qualifications encourages the automatic recognition of professional qualifications and, in this context, provides for three qualification recognition systems. The certification/accreditation schemes or other equivalent schemes set up under EED, EPBD and RESD apply without prejudice to the requirements of the PQD and SD. The requirements on access to professions and on free movement of services thus apply in parallel with the specific certification schemes set up under these Directives. This means, for instance, that any authorisation scheme established under national law shall meet the requirements of Article 10 of the SD, including the requirement to be non-discriminatory. The EPBD and RESD refer explicitly to the Professional Qualifications Directive (PQD).

Exhibit B.5.5 Provisions on mutual recognition in the EED, EPBD and RESD

EED	EPBD	RESD
Art. 16(3) - Member States shall make publicly available the certification and/or accreditation schemes or equivalent qualification schemes referred to in paragraph 1 and shall cooperate among themselves and with the Commission on comparisons between, and recognition of, the schemes.	Recital 30 - Member States should take account of Directive 2005/36/EC of the European Parliament and of the Council of 7 September 2005 on the recognition of professional qualifications with regard to the mutual recognition of professional experts which are addressed by this Directive, and the Commission should continue its activities under the Intelligent Energy Europe Programme on guidelines and recommendations for standards for the training of such professional experts.	Recital 50 - In so far as the access or pursuit of the profession of installer is a regulated profession, the preconditions for the recognition of professional qualifications are laid down in Directive 2005/36/EC of the European Parliament and of the Council of 7 September 2005 on the recognition of professional qualifications. This Directive therefore applies without prejudice to Directive 2005/36/EC. Art. 14 (3) – […] Each Member State shall recognise certification awarded by other Member States in accordance with those criteria.

The EED, in its Article 16(3) urges Member States to cooperate on the recognition of the certification and/or accreditation schemes or equivalent qualification schemes for the providers of energy services, energy audits, energy managers and installers of energy-related building elements. However, it does not refer to PQD, nor does it set rules on mutual recognition. The EPBD explicitly refers to the PQD in its recitals with regard to the mutual recognition of 'professional experts' (qualified and/or accredited). The RESD also makes a direct

reference to the PQD in its recital with regard to the access or pursuit of the profession of installers in particular when it is a regulated profession. It also includes in its Article 14(3) a general requirement on mutual recognition for certification awarded in accordance with a number of general criteria listed in Annex IV to the Directive.

When there are no rules on the mutual recognition of certificates, the recognition procedure of the PDQ applies:

- If the holders of the certificates have to fulfil minimum requirements, there should be automatic recognition of the certificates.
- In the absence of such minimum requirements, but when the EU legislation requires MS to establish a certification scheme, MS can decide on the criteria and the certificates should follow the general recognition procedure of the PQD.

Under each of the three energy-related directives, the certification schemes or equivalent can be voluntary. It should also be noted that the PQD does not apply to voluntary schemes. For instance, certification schemes under the RESD can be voluntary or compulsory, even if the majority of those are voluntary.[541] Where the scheme is compulsory, the recognition of certificates shall meet the requirements of the PQD.

Under the SD, MS when establishing the conditions of access to certification schemes can not establish any condition which constitutes a discrimination towards EU citizens from other MS, for example, because of their nationality. This is particularly relevant for those cases where a certification scheme would be mandatory as certification would be considered an authorisation for access to the services market in the country.

In 2012, the Commission raise concerns, noting that "businesses and professionals face problems because of the lack of mutual recognition clauses in sector-specific EU legislation that provides for authorisation or registration schemes or the certification of experts".[542] Even in the case of the RESD, which provides for mutual recognition, the differences in certification or qualification systems lead to challenges in practice[543]. This suggests that the application of the PDQ and SD does not prevent problems in terms of practical implementation. The mutual evaluation exercise of obstacles to the access to professions under the PQD and to the freedom to provide services under the SD could provide a useful tool to identify and address such problems in practical implementation.

The QualiCert project has been working on this challenging issue of recognition of individual competences in relation to RESD and has highlighted some of the practical implementation problems.[544] First, EU legislation does not opt for certification or equivalent qualification and both schemes therefore co-exist, with good results. Further, there can be individual or company certificates, and in some countries, both coexist.[545]. Also, not all certification or equivalent qualification schemes are undergoing an audit to ensure their persistent high-quality – even though their crucial role is generally acknowledged.[546] Related hereto, different types of audits might be realised (i.e. administrative audits based on documentation sent by the company or on-site audits). In addition, the fact that the certification schemes are often based on different Member State criteria (leading to differences in structure, compulsoriness, actors involved and cost) and that

[541] CA-RES II Core Theme Interim Report – Core Theme 3 RES HEAT, February 2015, available at http://www.ca-res.eu/fileadmin/cares/public/Reports/CT_Interim_Reports/CT3_Interim_Report_Final.pdf, p.6

[542] Commission Staff Working Document on the result of the performance checks of the internal market for services (construction, business services and tourism) - Accompanying the document Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions on the implementation of the Services Directive. A partnership for new growth in services 2012-2015, SWD(2012)147 final, p.9.

[543] See, e.g., in the conclusions of CE DELFT, Mid-term evaluation of the Renewable Energy Directive. A study in the context of the REFIT programme, prepared for DG Energy, April 2015. See also: CA EPBD, 2016 Implementing the Energy Performance of Buildings Directive, Sept. 2015, p. 105, available at: http://www.epbd-ca.eu/outcomes/2011-2015/CA3-BOOK-2016-A-web.pdf

[544] The QualiCert project relates to installers of small-scale renewable energy systems but the results of the project can be broadened to the certification schemes and professional qualifications under the EED and EPBD. See: ADEME, QualiCert Publishable report - Quality certification & accreditation for installers of small-scale renewable energy systems, supported by Intelligent Energy Europe, 2012.

[545] ADEME, QualiCert Publishable report - Quality certification & accreditation for installers of small-scale renewable energy systems, supported by Intelligent Energy Europe, 2012, p. 38.

[546] ADEME, QualiCert Manual - A common approach for certification or equivalent qualification of installers of small-scale renewable energy systems in buildings, March 2011.

the duration and content of the required training also differs from one country to another complicates the mutual recognition of Member States certificates, as required by Article 14(3) of the RESD and Article 16(3) of the EED.[547] Furthermore, some of the requirements/criteria in Annex IV of the RESD just consist of guidelines and are thus not compulsory. In addition, this Annex is seen as leaving much leeway to Member States, rather vague, and not always properly enforced.[548]

During the interviews performed for this study, the case of Belgium was highlighted, where Flanders and Wallonia could not agree on the certification requirements for RES installers. As a result, a region accepts (i.e. recognise) the certificates from other countries but possibly not from the other region.

QualiCert has suggested an approach to make the various schemes compatible in the context of a European market with free movement of labour.[549] Stakeholders have also suggested that providing EU-specific training and examination regulations could ensure a higher standard of installations and increase the coherence across Member States, although this could lead to costly system adaptations. CE Delft has proposed the introduction of a standardised test for all European installers/inspectors/certifiers/auditors as part of national certification/qualification (including country-specific elements), which could also benefit the harmonisation of training standards and would be a quite cost-efficient way to guarantee a Europe-wide minimum standard while keeping intervention into national systems low.[550]

Conclusion

Even though the EED, EPBD and RESD consistently urge Member States to take the PQD into account, the problem of differences in certification and qualification criteria persists and cross border mutual recognition therefore remains slow to emerge. This is considered problematic in view of the PQD and the SD, which aim at reducing obstacles to the free provision of services across the EU and which apply without prejudice to the specific certification requirements set out in these Directives. In addition, some specialised construction workers, such as installers of small-scale renewable energy systems, may be considered 'regulated professions' under the PQD in some Member States, but not in all: installers of RES technologies are considered a regulated profession in 40% of the Member States.[551] The regulation of some specialised construction activities in a limited number of Member States can further create an obstacle to the free movement of professionals, as protected under the SD and the PQD.[552] Any authorisation schemes established in national law shall meet the requirements of Article 10 SD, which requires, among others, that such schemes be non-discriminatory. Particular attention thus seems necessary to the correct application of the internal market legislation for services to the certification schemes established under sector-specific legislation in the construction sector. The mutual evaluation exercise under the SD and PQD could provide a useful tool for identifying and remedying the obstacles to the free movement of services and the mutual recognition of professional qualifications in these specific cases.

[547] See also: Commission Staff Working Document on the result of the performance checks of the internal market for services (construction, business services and tourism) - Accompanying the document Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions on the implementation of the Services Directive. A partnership for new growth in services 2012-2015, SWD(2012)147 final, p.9.
[548] CE DELFT, Mid-term evaluation of the Renewable Energy Directive. A study in the context of the REFIT programme, prepared for DG Energy, April 2015, p. 26.
[549] ADEME, QualiCert Manual - A common approach for certification or equivalent qualification of installers of small-scale renewable energy systems in buildings, March 2011.
[550] CE DELFT, Mid-term evaluation of the Renewable Energy Directive. A study in the context of the REFIT programme, prepared for DG Energy, April 2015, p. 26.
[551] CA-RES, Working Group 5. Information and training, available at: https://ec.europa.eu/energy/intelligent/projects/sites/iee-projects/files/projects/documents/ca-res_working_group_publication_no_5_en.pdf
[552] CSES, Study to provide an Inventory of Reserves of Activities linked to professional qualifications requirements in 13 EU Member States & assessing their economic impact, Final Report, January 2012, p.1, available at: http://ec.europa.eu/internal_market/qualifications/docs/news/20120214-report_en.pdf

B.6 COHERENCE EVALUATION QUESTIONS

To what extent do all pieces of EU legislation fit together sufficiently well and provide the construction sector with a clear and predictable regulatory framework?

The list of legal instruments identified for the purpose of this fitness check consists of three Directives and one Regulation mainly aimed at Internal Market, and five Directives mainly focusing on Energy Efficiency. For the purpose of the coherence analysis, these EU instruments were divided into three blocks, of which the first block comprehends three instruments which establish requirements for construction products, either as product requirements or as labelling requirements, namely the Construction Product Regulation (EU) 305/2011 (CPR), the Eco-Design Directive 2009/125/EC (EDD) and the Energy Labelling Directive 2010/30/EU (ELD). The second block includes the energy efficiency legislation that is applicable to the construction sector, in particular the Energy Efficiency Directive 2012/27/EU (EED), the Energy Performance in Buildings Directive 2010/31/EU (EPBD) and the Renewable Energy Sources Directive 2009/28/EC (RESD). The third block deals with legislation applicable to the provision of services in the construction sector, in particular Directive 2006/123/EC on services in the internal market (SD), Directive 2005/36/EC on the mutual recognition of professional qualifications (PQD) and Directive 2011/7/EU on combating late payment in commercial transactions (LPD). Within each block, an analysis was made as to what extent the three pieces of EU legislation fit together sufficiently well. An overall analysis has not been provided as there are hardly any links between Internal Market legislation impacting on the construction industry and Energy Efficiency legislation impacting on the construction industry. The few existing links have been discussed in the last subsection B.5.

- The SD and PQD aim at making the free provision of services within the Community as simple as within an individual Member State. They share the same general objective of removing obstacles to the free movement of services and enhancing professional mobility in the EU through different complementary measures. Both apply to the mobility of professionals in the construction sector. The objectives of both Directives are overall considered complementary and coherent. Implementation reports and stakeholders do not point to inconsistencies among the general and specific objectives of both instruments. Consistency in the definitions is, for example, ensured through specific cross-references to the PQD definition within the SD.

- While the LPD ultimately also aims at contributing to the free provision of services due to the elimination of obstacles from the late payments of invoices, it regulates a different matter from the SD and PQD. The overarching purpose of the Directive is to facilitate the functioning of the internal market through the elimination of barriers related to cross-border commercial transactions. No specific inconsistencies were raised between the LPD and the SD in the implementation reports and interviews with stakeholders.

- The comparative analysis of the EED, EPBD and RESD carried out has uncovered that there is great synergy with regard to their objective. This conclusion has been corroborated through the 2015 ex-post evaluation of the EPBD. The related report has stated the following: "The EPBD and the EED have linked effects on the realisation of the objectives of the EPBD". In addition, "[a]s the EPBD aims to reduce the energy consumption of buildings as well as to increase the use of energy from renewable sources, the EPBD is also connected to the Renewables Directives (2009/28/EC) (RED) and vice versa."

- The objectives of the CPR, ELD and EDD are clearly distinct and are mostly considered complementary and coherent. While, similarly to the CPR aiming to eliminate barriers in the EU internal market, the EDD also aims at reducing the overall negative impact of products placed on the EU market in the perspective of sustainable development. The ELD complements the EDD by setting a framework for the labelling and the provision of information regarding energy consumption. The substantial requirements under the EDD and ELD are mostly considered coherent and complementary.

- The EED, EPBD, EDD and ELD all have different objectives which are well-aligned with each other and which do not overlap, given that the directives focus on energy efficiency at different levels in the building chain.

What are the specific inconsistencies overlaps (e.g. in terms of definitions) or gaps that can be identified across the identified EU legal acts?

- The 2011 evaluation of the 2005 PQD Directive identified several areas where the coherence and interaction between the procedures under both Directives could be enhanced. Such changes have been introduced in the amended PQD Directive, which now, for instance uses the points of single contact referred to in Article 6 of Directive 2006/123/EC for making available information on the PQD and for easy and remote completion of all requirements, procedures, formalities related to the PQD. The substantive requirements of the SD and PQD have thus been largely aligned. However, the performance check for the construction sector notes that the cumulative application of internal market rules, including the SD and PQD, lacks consistency and coherence.

- There have been some important overlaps between the EED, EPBD and RESD. Further to the differences in definitions, scope and minimum requirements for buildings, the most important issue of coherence relates to the EPCs, inspections and energy audits, and their related certification/qualification schemes and training programmes. Due to the existence of some overlaps with regard to the more substantive requirements of the EED, EPBD and RESD, an increasing number of stakeholders is suggesting to have the energy performance of buildings entirely and fully integrated in the EED or to have only one directive entirely focusing on buildings (i.e. separating the EED into two directives – one for industry and another one for the building sector), due to the varying nature of the different sectors (industry, transport, building sector) now covered under the EED. The report on the 2014 public consultation on the review of progress on the 2020 energy efficiency objective, on its turn, suggests that the building-related provisions of the EED (i.e. Articles 4 and 5) should be incorporated in the EPBD to have a "single and powerful policy instrument".

- There is currently only concrete overlap between the EDD and CPR for specific product categories, namely for solid fuel space heaters, as regulated by the recently adopted Commission Regulation (EU) 2015/1185 and a harmonised standard under the CPR. For five other product categories which may be considered a construction product and an energy-related product at the same time, there are currently no concrete overlaps as both acts cover different aspects of the products and have different objectives.. The overlap could extend to other product categories when implementing acts for additional construction products are adopted under the EDD. In Recital 18 of the most recent Regulation (EU) 2015/1185, the Commission announced the further integration of eco-design requirements in harmonised standards for the sake of legal certainty and simplification. It should be noted though that the adoption or modification of harmonised standards is a lengthy process and not a sole competence of the European Commission. Close collaboration will be required between the European Commission, on the one hand, and the European Standardisation Organisations. Finally, eco-design requirements will have to be integrated with an applicable standard, when adopted, for every product category. Nevertheless, the integration would be an easy, but clear way forward to remedy the concerns expressed by stakeholders, given the small scope of overlaps currently existing between both legal instruments (currently only one product category).

- The different legal instruments do not use identical definitions of the economic operators covered by the obligations nor of the term ´placing on the market´. While the definitions in this case do not directly lead to substantial differences and inconsistencies, it is recommended in view of legal clarity to aim at using same definitions where possible, especially in the situation in which the requirements under the different instruments will apply to a same operator for making one same product available on the market.

- Further fragmentation between EED, EPBD, EDD and ELD can be avoided by requiring that the outputs under the EDD and ELD are directly compatible with the inputs under the EPBD and by streamlining the concepts of 'system', 'product' and 'component'. This conclusion is supported, inter alia, by the results from the ex-post evaluation of the application of the EPBD and by the results from the evaluation of the EDD.

To what extent can the inconsistencies and overlaps be attributed to provisions in the existing EU legislative framework or to implementation and/or transposition at national (including regional and local) level or to existing national legislative frameworks?

- The implementation of the free movement of services in the construction sector in practice still raises important problems. Stakeholders note, for instance, that mutual recognition in the construction sector is still not working in certain cases. The Commission Staff Working Document on the results of the performance checks highlights a number of instances of deficient implementation of the SD and the PQD which jointly affect the mobility of professionals in the construction sector. These concern authorisation requirements for automatically recognised professions (i.e. architects), residence or nationality requirements and insurance obligations.

- With regard to the harmonization and coordination at a practical and national level of the EED, EPBD and RESD, several impediments have arisen. In most countries, regular inspections / certifications and energy audits are managed by different legislation and by different public authorities. Further, numerous problems have also been reported with regard to the proper implementation of the EPCs at Member State level, which obviously will impede any harmonization with inspections and energy audits. One important recommendation in order to create synergies is to work upon one harmonised set of definitions with regard to the quality schemes aiming at giving assurance regarding the skills of the energy expert. These schemes now have different names (including certification, qualification, label and accreditation) – at EU level and at national level - and the meaning of these words can be quite different from one country to another. Further, also qualification and training of energy efficiency experts remains a competence of Member States and, in most Member States, different ministries are responsible for – especially – the EPBD and the EED/RESD, also leading to different approaches with regard to the accreditation and/or qualification schemes and to the training programmes. In addition, the existing certification and qualification schemes for installers of small-scale renewable energy systems in buildings are so diverse among themselves that any harmonization with the schemes and training programmes foreseen under the EED and EPBD is impeded. Finally, also the implementation of Article 14(3) of the RESD in various Member States differs considerably.

- Generally, both the SD and PQD have insufficiently been implemented and this obstructs the free movement of services. Coherence issues are therefore more related to the fact that Member States draw up barriers or obstacles in their national legislation, either under the SD or on under the PQD or both.
- Even though the EED, EPBD and RESD consistently urge Member States to take the PQD into account, the problem of differences in certification and qualification criteria persists and cross border mutual recognition therefore remains slow to emerge. This is considered problematic in view of the PQD and the SD, which aim at reducing obstacles to the free provision of services across the EU and which apply without prejudice to the specific certification requirements set out in these Directives. In addition, some specialised construction workers, such as installers of small-scale renewable energy systems, may be considered 'regulated professions' under the PQD in some Member States, but not in all: installers of RES technologies are considered a regulated profession in 40% of the Member States.[553] The regulation of some specialised construction activities in a limited number of Member States can further create an obstacle to the free movement of professionals, as protected under the SD and the PQD.[554] Any authorisation schemes established in national law shall meet the requirements of Article 10 SD, which requires, among others, that such schemes be non-discriminatory. Particular attention thus seems necessary to the correct application of the internal market legislation for services to the certification schemes established under sector-specific legislation in the construction sector. The mutual evaluation exercise under the SD and PQD could provide a useful tool for identifying and remedying the obstacles to the free movement of services and the mutual recognition of professional qualifications in these specific cases.

[553] CA-RES, Working Group 5. Information and training, available at: https://ec.europa.eu/energy/intelligent/projects/sites/iee-projects/files/projects/documents/ca-res_working_group_publication_no_5_en.pdf

[554] CSES, Study to provide an Inventory of Reserves of Activities linked to professional qualifications requirements in 13 EU Member States & assessing their economic impact, Final Report, January 2012, p.1, available at: http://ec.europa.eu/internal_market/qualifications/docs/news/20120214-report_en.pdf

PART C – OPEN PUBLIC CONSULTATION

Open public consultation as part of the Fitness Check for the Construction Sector

This open public consultation will last for 12 weeks. The questionnaire will be online until XX 2016.

Policy field

Industrial policy: Construction sector
Impacts of EU legislation relating to Internal Market, Energy Efficiency, Environment, Health and Safety

Target group(s)

All: construction industry, middle size and micro enterprises, industry associations, public authorities, Member States authorities, private organisations trade unions, consultancies, other relevant stakeholders and citizens are welcome to contribute to this consultation.

Objective of the consultation

The aim of this consultation is to gather the experience and the views and opinions of interested stakeholders and the public on the impact of current EU legislation on the construction sector.[555] The results will feed into the Fitness Check for the Construction Sector undertaken by the Commission and expected to be completed by the end of 2016.

The Fitness Check is part of the European Commission's Regulatory Fitness and Performance Programme (REFIT). It involves a comprehensive, evidence-based assessment of whether the current regulatory framework is proportionate and fit for purpose, and delivering as expected. Specifically, it assesses the relevance, effectiveness, efficiency, coherence and EU added value of the abovementioned legislative framework.

Background

The construction sector is at the heart of the Europe 2020 strategy and is one of the keys to unlocking the 2020 vision for smart and sustainable growth and jobs. More than any other sector, the performance of the construction sector determines the development of the overall economy: not only does it generate almost 9% of GDP and provides 18 million direct jobs in the EU, construction consumes about 800 billion EUR of intermediate products from various industrial sectors. The construction sector has been hit particularly strong by the financial and economic crisis. At the same time, the building sector is facing a number of challenges to mainstream practices to save energy, to minimise the sector's contribution to anthropogenic climate change, and to minimise its total environmental impact in terms of emissions, material use, water use and waste generation which is considerable.

Making buildings more energy- and resource-efficient is increasingly considered as an urgent global challenge. Buildings are responsible for 40% of the total final energy use, and 36% of greenhouse gas emissions in the EU-28. Improving **energy efficiency** in buildings therefore represents an important cost-effective potential for meeting the EU's targets for reducing greenhouse gas emissions by 2020 and beyond.

To enhance the competitiveness and sustainability of the construction sector in the EU, it is essential to ensure a properly and effectively functioning **Internal Market** for construction products and services, with a

[555] This public consultation is not related to any other past or current public consultation on the individual EU legal texts. For an overview, please go to: http://ec.europa.eu/yourvoice/consultations/index_en.htm

clear and predictable legal framework, as well as to ensure that administrative and compliance costs are proportionate to the objectives pursued by the legislative acts.

In 2010, 13.4 million[556] people were employed in the construction sector in the EU, and making those people, along with the rest of the workforce, **safe** in their working environment and doing this in a way that protects workers without raising costs to businesses more than is necessary (which could lead to significant job losses) is a key social objective of EU legislation.

Protecting the **environment** across the EU and beyond is an urgent responsibility. The construction and use of buildings in the EU account for about half of all our extracted materials and energy consumption and about one third of water consumption and generates about one third of all waste. Requiring control and minimisation of the waste we produce and making sure that major projects consider the environment through assessing possible impacts before a project is implemented are essential steps to realise resource efficiency gains and to protect our environment that is essential to maintain prosperity and high quality of life.

The present public consultation, therefore, offers a unique opportunity for society to provide direct feedback, identifying some of the main success factors, shortcomings or unintended effects offered by the legal framework in pursuance of their individual objectives.

Scope of the consultation

The Fitness check focuses on 15 EU legislative texts in the policy fields of Internal Market, Energy Efficiency, Environment and Health & Safety - and, more specifically, on those provisions within these EU texts that may impact the construction sector. This public consultation asks about key procedures and issues affected by these instruments.

In particular, the open public consultation includes questions related to the following EU legislative texts:

- **Construction Products Regulation** (Regulation No 305/2011 laying down harmonised conditions for the marketing of construction products)
- **Professional Qualifications Directive** (Directive 2005/36/EC on the recognition of professional qualifications)
- **Services Directive** (Directive 2006/123/EC on services in the Internal Market)
- **Late Payments Directive** (Directive 2011/7/EU on combating late payment in commercial transactions)
- **Energy Efficiency Directive** (Directive 2012/27/EU on energy efficiency)
- **Energy Performance of Buildings Directive** (Directive 2010/31/EU of the European Parliament and of the Council on the energy performance of buildings)
- **Ecodesign Directive** (Directive 2009/125/EC establishing a framework for the setting of eco-design requirements for energy-using products)
- **Energy Labelling Directive** (Directive 2010/30/EU on the indication by labelling and standard product information of the consumption of energy and other resources by energy-related products)
- **Renewable Energy Sources Directive** (Directive 2009/28/EC of the European Parliament and of the Council of 23 April 2009 on the promotion of the use of energy from renewable sources)
- **Occupational Safety and Health Framework Directive** (Directive 89/391/EEC on the introduction of measures to encourage improvements in the safety and health of workers at work)
- **Directive on the Manual Handling of Loads** (Directive 90/269/EEC on the minimum health and safety requirements for the manual handling of loads where there is a risk particularly of back injury to workers)

[556] Source: Eurostat. http://ec.europa.eu/eurostat/statistics-explained/index.php/Construction_statistics_-_NACE_Rev._2

- **Directive on Temporary or Mobile Construction Sites** (Directive 92/57/EEC on the implementation of minimum safety and health requirements at temporary or mobile construction sites)
- **Asbestos Directive** (Directive 2009/148/EC on the protection of workers from the risks related to exposure to asbestos at work)
- **Waste Framework Directive** (Directive 2008/98/EC of the European Parliament and of the Council on waste and repealing certain Directives)
- **Environmental Impact Assessment Directive** (Directive 2011/92/EU of the European Parliament and of the Council on the assessment of the effects of certain public and private projects on the environment)

Questionnaire structure

This open public consultation begins with an introductory section followed by two main sections, each asking questions on a group of EU legal acts in the areas of Internal Market and Energy Efficiency, and Environment and Health & Safety respectively. Each main section is further divided into various subsections.
Generally, you can choose at the beginning of each subsection whether you want to answer the questions on a specific EU legal text, or whether you want to skip this part. This gives you the opportunity to answer questions on the EU legislation that affect you the most or that you are most familiar with.
Most questions are mandatory to answer (marked with *), but you will always have the option to tick "no opinion".

Three sets of questions have been elaborated in order to gather the most relevant information from various stakeholders. Therefore, the following three questionnaires are available:

- questionnaire directed towards citizens,
- questionnaire directed towards professionals in the construction sector (e.g. employee, independent, entrepreneur) and those respondents answering on behalf of an organisation/institution/company,
- questionnaire directed towards public authorities.

YOU CAN ACCESS THE PDF VERSION OF EACH QUESTIONNAIRE BY CLICKING ON THE BULLETS ABOVE

TO ANSWER ON-LINE, PLEASE CLICK ON THE APPROPRIATE REPLY TO THE FOLLOWING QUESTION:

In what capacity are you answering to this questionnaire?*

a. I am answering as a citizen.
b. I am answering as a professional in the construction sector (e.g. employee, independent, entrepreneur) or on behalf of an organisation/institution/company
c. I am answering on behalf of / as an employee of a public authority.

Open public consultation as part of the Fitness Check for the Construction Sector

Questionnaire for citizens

I. Information about the citizen

Please note throughout the questionnaire, hidden questions may show up depending on your answers, so please disregard the numbering in case it does not follow a completely logical order.

1. Please indicate your principal country of residence*

AT, BE, BG, etc. (*drop-down menu with "non-EU country: please specify"*)

2. Please enter your full name.*

Open text box - max. 100 characters

3. How would you prefer your contribution to be published on the Commission website, if at all?*

a. Under the name indicated (All your responses to the consultation will be published as submitted)
b. Anonymously (Please ensure that your contribution does not include information which may disclose your identity. Except for the preliminary identification section I, your responses to the consultation will be published as submitted)
c. Not at all

ONLY IF Q3. = c: ***Please explain your objection to publication:****

Open text box

II. Questionnaire on Internal market and energy efficiency

II.1. Questions on EU legislation related to the activity of construction businesses and professionals

This first section asks questions on the implications on the construction sector of the following Directives: Professional Qualifications Directive, Services Directive and Late Payments Directive.

- **Services Directive** (Directive 2006/123/EC on services in the Internal Market)
  http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex:32006L0123

The Services Directive aims at realising the full potential of the internal market, facilitating the establishment and cross-border operations of service providers. To this effect, it requires Member States to simplify the procedures for the permanent or temporary provision of service activities and to eliminate authorisation schemes that are discriminatory, disproportionate or not justified by overriding public interest considerations. This is accompanied by measures aimed at strengthening the rights of service users and at promoting the high quality of services. The Directive adopts a very broad definition of services, which includes construction and related professional services as well as real estate services.

- **Professional Qualifications Directive** (Directive 2005/36/EC on the recognition of professional qualifications)
- http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:02005L0036-20140117

The Professional Qualification Directive aims at facilitating the mobility of members of regulated professions (such as architects, engineers, plumbers, electricians and energy auditors) across the EU. This objective is pursued primarily through the establishment of mechanisms for the recognition of qualifications based on training or experience (automatic recognition, mutual recognition). This is accompanied by specific measures intended to ease the provision of professional services on a temporary basis and the setting of certain minimum requirements and obligations for professionals operating across borders.

- **Late Payments Directive** (Directive 2011/7/EU on combating late payment in commercial transactions)
  http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32011L0007

The Late Payment Directive aims at combating late payments in commercial transactions in order to contribute to the proper functioning of the internal market and to foster the competitiveness of undertakings, particularly small and medium-sized enterprises. This is done by setting time limits for the payment of invoices and by imposing penalties for late payments.

II.1.a. Simplification of administrative procedures

EU legislation (in particular the Services Directive) requires national authorities to simplify administrative procedures, including those related to the construction and renovation of buildings. This is intended to lower the administrative burden, with a reduction in applicable procedures (including due to elimination of time or territorial validity limitations) or procedural steps, complexity of application forms, documents to be submitted, administrative fees charged and/or other out-of-pocket costs and/or workload (staff time) time required to handle administrative procedures, including availability of information online, submission of simple-form documents, e-procedure availability and tacit approval.

4. ***Have you asked for a permit for construction works and/or the provision of services related to construction works in the period 2004-2014?****

The following permits are envisaged under this section: building permit for new construction; building permit for renovation work; operational permit (e.g. permit for scaffolding) required during construction works; and use permit (e.g. a permit necessary upon completion of construction works)

a. I asked for one or more permits for construction works and/or the provision of services related to the construction works
b. I acted as a representative or intermediary in the permit process for construction works
c. No

5. ***Do you want to respond to questions on permits for construction works and/or the provision of services related to construction works?****

a. Yes
b. No (*you will be redirected to question 11*)

6. ONLY IF Q5. = a: ***Have you noted or perceived any changes in dealing with any of the following administrative procedures?****

	More complexity	No change	Simplification	No opinion
Obtaining a building permit for new construction				
Obtaining a building permit for renovation work				
Obtaining an operational permit (e.g. permit for scaffolding) required during construction works				
Obtaining a use permit (e.g. a permit necessary upon completion of construction works)				

7. ONLY IF Q6. = Obtaining a building permit for new construction - More complexity OR Simplification: ***Do the above perceived changes relate to the duration of the process, the requirements to submit the permit request (e.g. online submission) and/or the cost related to a building permit for new construction?****

	Duration	Requirements	Cost	No opinion
Obtaining a building permit for new construction				

8. ONLY IF Q6. = Obtaining a building permit for renovation work - More complexity OR Simplification: ***Do the above perceived changes relate to the duration of the process, the requirements to submit the permit request (e.g. online submission) and/or the cost related to a building permit for renovation work?****

	Duration	Requirements	Cost	No opinion
Obtaining a building permit for renovation work				

9. ONLY IF Q6. = Obtaining an operational permit (e.g. permit for scaffolding) required during construction works - More complexity OR Simplification: ***Do the above perceived changes relate to the duration of the process, the requirements to submit the permit request (e.g. online submission) and/or the cost related to an operational permit?****

	Duration	Requirements	Cost	No opinion
Obtaining an operational permit (e.g. permit for scaffolding) required during construction works				

10. ONLY IF Q6. = Obtaining a use permit (e.g. a permit necessary upon completion of construction works) - More complexity OR Simplification: ***Do the above perceived changes relate to the duration of the process, the requirements to submit the permit request (e.g. online submission) and/or the cost related to a use permit?****

	Duration	Requirements	Cost	No opinion
Obtaining a use permit (e.g. a permit necessary upon completion of construction works)				

II.1.b. Cross-border operations

This module investigates the influence of EU legislation (in particular the Professional Qualifications Directive) on cross border operations, both outbound (i.e. the influence on the investee's operations abroad, if any) and inbound (i.e. the influence of a stronger presence of construction firms from other EU countries).

11. Do you want to respond to questions on the recognition of professional qualifications?*

a. Yes
b. No (*you will be redirected to question 18*)

12. ONLY IF Q11. = a: ***Have you noted or perceived any changes of these procedures in the past years?****

	More complexity	No change	Simplification	No opinion
Obtaining the recognition of qualifications of professionals qualified in other EU Member States				
Obtaining the authorisation to perform an activity in the construction sector in another EU Member States on a temporary basis (freedom to provide services)				
Obtaining the authorisation to perform an activity in the construction sector in another EU Member States on a permanent basis (freedom of establishment)				

13. ONLY IF Q12. = Obtaining the recognition of qualifications of professionals qualified in other EU Member States - More complexity OR Simplification: ***Do the above perceived changes relate to the duration of the process, the requirements related to the authorisation or recognition (e.g. online submission, possibility to work with more qualified partners) and/or the cost related to the authorisation or recognition?****

	Duration	Requirements	Cost	No opinion
Obtaining the recognition of qualifications of professionals qualified in other EU Member States				

14. ONLY IF Q12. = Obtaining the authorisation to perform an activity in the construction sector in another EU Member States on a temporary basis (freedom to provide services) - More complexity OR Simplification: ***Do the above perceived changes relate to the duration of the process, the requirements related to the authorisation or recognition (e.g. online submission, possibility to work with more qualified partners) and/or the cost related to the authorisation or recognition?****

	Duration	Requirements	Cost	No opinion
Obtaining the authorisation to perform an activity in the construction sector in another EU Member States on a temporary basis (freedom to provide services)				

15. ONLY IF Q12. = Obtaining the authorisation to perform an activity in the construction sector in another EU Member States on a permanent basis (freedom of establishment) - More complexity OR Simplification: ***Do the above perceived changes relate to the duration of the process, the requirements related to the authorisation or recognition (e.g. online submission, possibility to work with more qualified partners) and/or the cost related to the authorisation or recognition?****

	Duration	Requirements	Cost	No opinion
Obtaining the authorisation to perform an activity in the construction sector in another EU Member States on a permanent basis (freedom of establishment)				

16. ONLY IF Q11. = a: ***Over the period 2009-2014, have you perceived a stronger presence of construction firms from other EU countries in your home market?****

a. Yes
b. No

17. ONLY IF Q11. = a: ***In your experience, among the changes identified in the questions above, have any…:****

	Yes	No	No opinion
Stimulated favourable investment conditions within your sector			
Facilitated the free circulation of construction products			
Facilitated establishment in a Member State			
Facilitated the mobility of construction workers			
Facilitated the provision of cross-border construction services			
Fostered the global competitive position of EU construction enterprises			
Reduced administrative costs for the construction sector industry			

Please explain (If you refer to a specific Member State, please state this clearly):
[TEXT BOX - MAX 500 CHARACTERS PER BOX]

Stimulated favourable investment conditions within the sector
Facilitated the free circulation of construction products
Facilitated establishment in a Member State
Facilitated the mobility of construction workers
Facilitated the provision of cross-border construction services
Fostered the global competitive position of EU construction enterprises
Reduced administrative costs for the sector construction industry

II.1.c. Late payments

EU legislation (in particular the Late Payments Directive, approved in 2011) requires national authorities to adopt measures to reduce the problem of late payments. In particular, government authorities are required to pay within maximum 30 days, payments among private parties should be settled within 60 days. These measures are intended to improve the firms' cash flow position. In addition, EU legislation gives creditors an automatic entitlement to the payment of late payment interests, which potentially allows for the reduction of litigation costs.

18. Do you want to respond to questions on late payments?*

a. Yes b. No (*you will be redirected to question 23*)

19. ONLY IF Q18. = a: ***In the years following the implementation of the Late Payments Directive, have payment times from <u>public</u> clients – according to your own experience:****

Decreased	Remained the same	Increased	No opinion

20. ONLY IF Q18. = a: ***In the years following the implementation of the Late Payments Directive, have your own payment times to <u>public</u> clients – according to your own experience:****

Decreased	Remained the same	Increased	No opinion

21. ONLY IF Q18. = a: ***In the years following the implementation of the Late Payments Directive, have payment times from <u>private</u> clients – according to your own experience:****

Decreased	Remained the same	Increased	No opinion

22. ONLY IF Q18. = a: ***In the years following the implementation of the Late Payments Directive, have your own payment times to <u>private</u> clients – according to your own experience:****

Decreased	Remained the same	Increased	No opinion

II.2. Questions on EU legislation related to energy efficiency in general and the use of renewable energy in the construction sector

This second section asks questions on the implications on the construction sector of the following Directives: Energy Efficiency Directive, Energy Performance of Buildings Directive, Renewable Energy Sources Directive.

- **Energy Efficiency Directive** (Directive 2012/27/EU on energy efficiency)
  http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex:32012L0027

The Energy Efficiency Directive introduces a series of measures intended to facilitate the achievement of the EU's 2020 energy savings target. These include provisions concerning: (i) the renovation of the stock of buildings, including an annual target for the renovation of central government buildings; (ii) the reduction in the volume of energy sales by energy distributors; (iii) the strengthening of energy audits (mandatory for large enterprises); and (iv) the promotion of other energy efficiency mechanisms (certification schemes, performance related contractual arrangements). While these obligations fall on public authorities or other entities outside the construction sector, their fulfilment may contribute to an increase in the demand for both building renovation and specialised energy efficiency services.

- **Energy Performance of Buildings Directive** (Directive 2010/31/EU of the European Parliament and of the Council on the energy performance of buildings)
  http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32010L0031

The Energy Performance of Buildings Directive supports the achievement of the energy efficiency targets by requiring Member States to introduce specific measures for buildings (both existing and new ones) and affecting construction, renovation, and ancillary services. In particular, the EPBD provides for: (i) a common methodological framework for measuring the energy performance of buildings; (ii) the obligation for Member States to set minimum requirements for the energy performance of new buildings, buildings undergoing major renovation, and technical building elements and systems; (iii) mandatory energy performance certification and inspections.

- **Renewable Energy Sources Directive** (Directive 2009/28/EC of the European Parliament and of the Council of 23 April 2009 on the promotion of the use of energy from renewable sources)
  http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:02009L0028-20151005

The Renewable Energy Sources Directive's objective is to establish a common framework for the promotion of energy from renewable sources, including setting mandatory national targets for the overall share of energy from renewable sources. In particular, the Directive includes a provision on the development and mutual recognition by Member States of certification or equivalent qualification schemes for installers of small-scale renewable energy systems.

II.2.a. Inspection/Installation and accredited experts

EU legislation (in particular the Energy Performance in Buildings Directive) requires inspections of heating and air-conditioning systems to be carried out by qualified and/or accredited experts. Similarly, the Renewable Energy Sources Directive requires the installation of renewable energy systems to be carried out by qualified and/or accredited experts.

23. Do you wish to respond to questions on inspection/installation and accreditation?*

a. Yes
b. No (*you will be redirected to question 28*)

24. ONLY IF Q23. = a: ***Was the inspection/installation carried out by visibly qualified and/or accredited experts (or in any case such a qualification was brought up in the context of the inspection/installation)? ****

	Yes	No	No opinion
Inspection of heating systems			
Inspection of air-conditioning systems			
Installation of renewable energy systems			

25. ONLY IF Q23. = a: ***In your Member State, is the list of installers and/or inspectors who are qualified or certified publicly available to your knowledge? In your experience, does the general public make use of this list?****

The list of installers and the list of inspectors are only available if your Member State did not opt for an alternative system.

	Publicly available	Not publicly available	Actively used by general public	Not actively used by general public	No opinion
List of qualified and/or accredited experts for the inspection of heating and air-conditioning systems(relevant under the Energy Performance in Buildings Directive)					
List of qualified and/or certified installers of renewable energy systems (relevant under the Renewable Energy Sources Directive)					

26. ONLY IF Q23. = a : ***Have you noted or perceived any changes related to the frequency of inspection of heating and air-conditioning systems and of installation of renewable energy systems?****

	More frequent	No change	Less frequent	No opinion
Inspection of heating systems				
Inspection of air-conditioning systems				
Receiving advice concerning the efficiency of the boiler				
Receiving advice concerning the efficiency of the air-conditioning system				
Installation of renewable energy systems				

27. ONLY IF Q26. = More frequent OR Less frequent: ***In your experience, among the changes you have identified in the questions above, have any…:****

	No	Yes	No opinion
Improved the energy performance of construction products			
Improved the energy efficiency of buildings			
Reduced the environmental footprint of buildings			
Stimulated the construction of new buildings			
Stimulated the renovation of buildings			
Stimulated the installation of renewable energy systems			

Please explain:

[TEXT BOX - MAX 500 CHARACTERS PER BOX]

Improved the energy performance of construction products
Improved the energy efficiency of buildings
Reduced the environmental footprint of buildings
Stimulated the construction of new buildings
Stimulated the renovation of buildings
Stimulated the installation of renewable energy systems
Improved the energy performance of construction products

II.2.b. Public procurement

One of the objectives of the Energy Efficiency Directive is to improve and strengthen energy efficiency through public procurement. Article 6 of the Directive states that Member States shall ensure that central governments purchase only products, services and buildings with a high energy-efficiency performance. The central governments of the Member States should "lead by example" so that local and regional procurement bodies also strengthen energy efficiency in their public procurement procedures.

28. Did you notice an increased use of energy efficiency criteria in the public tenders of the central, local and regional governments?*

	Yes	No	No opinion
National government			
Local government			
Regional government			

II.3. Questions on EU legislation related to products used in construction

This third section asks questions on the implications on the construction sector of the following Directives and Regulation: the Construction Products Regulation, the Ecodesign Directive and the Energy Labelling Directive.

- **Construction Products Regulation** (Regulation No 305/2011 laying down harmonised conditions for the marketing of construction products)
  http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:02011R0305-20140616

The Construction Products Regulation sets out the conditions for the placing or making available on the market of construction products, by establishing harmonised rules on how to express the performance of construction products in relation to their essential characteristics and on the affixing of the CE marking. In addition, the Regulation requires manufacturers to draw up a declaration of performance for construction products that are either covered by harmonised standards or conform to an issued European Technical Assessment.

- **Ecodesign Directive** (Directive 2009/125/EC establishing a framework for the setting of eco-design requirements for energy-using products)
  http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:02009L0125-20121204

The Ecodesign Directive establishes a framework for the setting of mandatory requirements for both energy-using and energy-related products (i.e. products that do not use energy but have an impact on energy consumption). In particular, the Directive includes various articles relating to ensuring compliance of a product with the Directive's requirements prior to placing on the market. Other provisions related to CE market, consumer information and the prohibition of markings likely to mislead users. Finally, a large part of the Directive deals with the creation of ecodesign implementing measures for products, which must respond to different sets of criteria.

The Ecodesign Directive is a framework directive, and the ecodesign requirements are set through Commission regulations. Several construction products and materials are classified as energy-using or energy-related products. However, no secondary regulations specifically targeting construction materials have been adopted so far, although work in this direction has been initiated (e.g. for windows and insulation materials).

- **Energy Labelling Directive** (Directive 2010/30/EU on the indication by labelling and standard product information of the consumption of energy and other resources by energy-related products)
  http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:02010L0030-20140605

The Energy Labelling Directive complements the Ecodesign Directive by setting a framework for the labelling and the provision of information regarding energy consumption. In particular, the Energy Labelling Directive settles the responsibility of suppliers to provide the product's label and fiche, which must be accurate. Initially targeted at household appliances, the Directive is now applicable to a wide range of energy-related products. As in the case of the Ecodesign Directive, no secondary legislation has so far been adopted that relates to construction products.

II.3.a. CE marking and Declaration of Performance

CE marking under the Construction Products Regulation enables a product to be placed legally on the market in any Member State. CE marking indicates that a product is consistent with its Declaration of Performance (DoP) as made by the manufacturer. The declaration varies according to the particular harmonised technical specification covering the product.

29. Do you wish to respond to questions on CE marking and Declaration of Performance (DoP)?*

a. Yes
b. No (*you will be redirected to question 33*)

30. ONLY IF Q29. = a: ***To what extent is the information provided through the DoP and the CE marking important in accessing other Member States' markets?****

a. Not at all
b. To a limited extent
c. To some extent
d. To a high extent
e. No opinion

31. ONLY IF Q29. = a: ***Have the DoP and CE marking procedures for construction products been changed according to policies in the following areas?****

	No	Yes	No opinion
Energy efficiency in buildings			
Environmental protection			
Public health and safety			
Health & safety at work			

ONLY IF Q31. = yes: ***If yes, please explain (e.g. what are the effects in terms of costs, duration of the procedures, particular requirements of Member States)***
[TEXT BOX - MAX 500 CHARACTERS]

32. ONLY IF Q29 = a: ***To what extent does the Ecodesign framework affect the credibility of the CE marking of construction products?****

a. Not at all
b. To a limited extent
c. To some extent
d. To a high extent
e. No opinion

II.4. Coherence questions

This final section is linked to all of the above as it wants to identify sources of impact - positive or negative - between either the various pieces of EU legislation themselves or between EU legislation and its implementation at national level.

33. *Are you familiar with two or more of the pieces of the EU legal framework for the Construction Sector discussed above?*

These EU instruments are: Construction Product Regulation, Professional Qualifications Directive, Services Directive, Late Payments Directive, Energy Efficiency Directive, Energy Performance of Buildings Directive, Ecodesign Directive, Energy Labelling Directive, Renewable Energy Sources Directive.

a. Yes
b. No (*you will be redirected to question 36*)

34. ONLY IF Q33. = a: ***How familiar are you with the each of the following pieces of the EU legal framework for the Construction Sector, and how they apply in your country?****

	Very familiar	Somewhat familiar	Not familiar
Construction Product Regulation			
Professional Qualification Directive			
Services Directive			
Late Payments Directive			
Energy Efficiency Directive			
Energy Performance of Buildings Directive			
Ecodesign Directive			
Energy Labelling Directive			
Renewable Energy Sources Directive			

35. ONLY IF Q47. = very familiar AND/OR somewhat familiar: ***If you are somewhat familiar to very familiar with any of the above pieces of EU and/or national (transposition) legislation, have you…?****

	Yes	No	No opinion
Benefitted from the harmonisation of reporting requirements			
Experienced easier access to European Markets			
Identified requirements where simplification has improved implementation			
Found requirements that are consistent with each other and complementary, offering a mutually supportive implementation			
Spotted inconsistencies or overlaps among various requirements			
Found concepts, notions, and definitions that are unclear and for which interpretation is difficult			
Identified obsolete requirements, i.e. requirements that are not aligned with current market reality and technical developments			
Identified requirements that need to be simplified			
Identified requirements where simplification has not brought an improvement to implementation			
Other aspects – please specify below			

If you replied yes on any of the above, please explain your answer. Please clearly indicate whether your answer relates to EU legislation (and which EU legislation) and/or to national (transposition) legislation.

[TEXT BOX - MAX 500 CHARACTERS PER BOX]

Benefitted from the harmonisation of reporting requirements
Experienced easier access to European Markets
Identified requirements where simplification has improved implementation
Found requirements that are consistent with each other and complementary, offering a mutually supportive implementation

Spotted inconsistencies or overlaps among various requirements
Found concepts, notions, and definitions that are unclear and for which interpretation is difficult
Identified obsolete requirements, i.e. requirements that are not aligned with current market reality and technical developments
Identified requirements that need to be simplified
Identified requirements where simplification has not brought an improvement to implementation
Other aspects – please specify

III. Questionnaire on environment and health & safety

III.1. Questions on EU legislation related to occupational health and safety in the construction sector

36. Do you wish to respond to questions on the health and safety of construction workers?*

a. Yes b. No

III.1.a. Occupational Safety and Health Framework Directive

The Occupational Safety and Health Framework Directive (89/391/EEC) sets out general requirements **for the protection of the health and safety of workers** in the EU. Under the Directive, employers have a "duty to ensure the safety and health of workers in every aspect related to the work" (Article 5(1)) and must "take the measures necessary for the safety and health protection of workers" (Article 6(1)).
Further information is available via the following link: https://osha.europa.eu/en/legislation/directives/the-osh-framework-directive/1

37. ONLY IF Q36 = a: ***Please indicate the extent of any costs incurred by the construction sector as a result of the following health and safety measures?****

	Significant costs	Moderate costs	No costs	No opinion
Provision of information and training for workers on health and safety				
Carrying out an evaluation of the risks to the health and safety of workers				
Purchasing Personal Protective Equipment				
Implementing protective organisational measures				
Reporting on occupational accidents				
Employing dedicated health and safety personnel (either in-house or externally)				
Monitoring workers' health				
Other (please specify)				

Please explain your reply.

38. ONLY IF Q36 = a: ***Please indicate the extent of any benefits that have arisen as a result of the following health and safety measures?****

	Significant benefits	Moderate benefits	No benefits	No opinion
Provision of information and training for workers on health and safety				
Carrying out an evaluation of the risks to the health and safety of workers				
Purchasing Personal Protective Equipment				
Implementing protective organisational measures				
Reporting on occupational accidents				

Employing dedicated health and safety personnel (either in-house or externally)				
Monitoring workers' health				
Other (please specify)				

Please explain your reply.

39. ONLY IF Q36 = a: ***To what extent has the Occupational Safety and Health Framework Directive (89/391/EEC) contributed to the following benefits?****

	Large positive impact (++)	Slight positive impact (+)	No impact	Slight negative impact (-)	Large negative impact (--)	No opinion
Reduced risks to workers' health and safety						
Fewer work days lost to work related injuries and ill-health						
Increased productivity in the construction sector						
Increased employee retention in the construction sector						
Reduced insurance premiums for companies in the construction sector						
Reduced legal costs for companies in the construction sector						

Please explain your reply.

III.1.b. Manual handling of loads

Directive 90/269/EEC lays down minimum health and safety requirements for the manual handling of loads where there is a particular risk of back injury to workers. Under the Directive, employers are required to take appropriate organisational measures, or use the appropriate means (in particular mechanical equipment), in order to avoid the need for the manual handling of loads by workers. Where the need for the manual handling of loads by workers cannot be avoided, employers must take the appropriate organisational measures, use the appropriate means or provide workers with such means in order to reduce the risk involved in the manual handling of such loads.
Further information is available via the following link: https://osha.europa.eu/en/legislation/directives/6

40. ONLY IF Q36 = a: ***Please indicate the extent of any costs incurred by the construction sector as a result of the following measures designed to reduce the risks associated with the manual handling of loads by workers.****

	Significant costs	Moderate costs	No costs	No opinion
Purchasing mechanical equipment to avoid the need for manual handling of loads by workers				
Implementing organisational measures to reduce the risk involved in the manual handling of loads				
Providing information on the weight and centre of gravity of heavy loads				
Providing training on the correct way to handle loads				
Other (please specify)				

Please explain your reply.

41. ONLY IF Q36 = a: ***Please indicate the extent of any benefits that have arisen as a result of the following measures designed to reduce the risks associated with the manual handling of loads by workers.****

	Significant benefits	Moderate benefits	No benefits	No opinion
Purchasing mechanical equipment to avoid the need for manual handling of loads by workers				
Implementing organisational measures to reduce the risk involved in the manual handling of loads				
Providing information on the weight and centre of gravity of heavy loads				
Providing training on the correct way to handle loads				
Other (please specify)				

Please explain your reply.

42. ONLY IF Q36 = a: ***To what extent has Directive 90/269/EEC on the manual handling of loads contributed to the following benefits?****

	Large positive impact (++)	Slight positive impact (+)	No impact	Slight negative impact (-)	Large negative impact (--)	No opinion
Reduced risks to workers' health and safety						
Fewer work days lost to work related injuries and ill-health						
Increased productivity in the construction sector						
Increased employee retention in the construction sector						
Reduced insurance premiums for companies in the construction sector						
Reduced legal costs for companies in the construction sector						

Please explain your reply.

III.1.c. Temporary or mobile construction sites

Directive 92/57/EEC lays down the minimum safety and health requirements for temporary or mobile construction sites (defined in Article 2(a) of the Directive as "any construction site at which building or civil engineering works are carried out").
Further information is available via the following link: https://osha.europa.eu/en/legislation/directives/15

43. ONLY IF Q36 = a: ***Please indicate the extent of any costs incurred by the construction sector as a result of the following health and safety measures on temporary or mobile construction sites.****

	Significant costs	Moderate costs	No costs	No opinion
Appointing one or more coordinators for health and safety matters				
Drawing up a safety and health plan				

Complying with the minimum safety and health requirements for construction sites set out in Annex IV to the Directive				
Other (please specify)				

Please explain your reply.

44. ONLY IF Q36 = a: ***Please indicate the extent of any benefits that have arisen as a result of the following health and safety measures on temporary or mobile construction sites.****

	Significant benefits	Moderate benefits	No benefits	No opinion
Appointing one or more coordinators for health and safety matters				
Drawing up a safety and health plan				
Complying with the minimum safety and health requirements for construction sites set out in Annex IV to the Directive				
Other (please specify)				

Please explain your reply.

45. ONLY IF Q36 = a: ***To what extent has Directive 92/57/EEC on the minimum safety and health requirements for temporary or mobile construction sites contributed to the following benefits?****

	Large positive impact (++)	Slight positive impact (+)	No impact	Slight negative impact (-)	Large negative impact (--)	No opinion
Reduced risks to workers' health and safety						
Fewer work days lost to work related injuries and ill-health						
Increased productivity in the construction sector						
Increased employee retention in the construction sector						

Reduced insurance premiums for companies in the construction sector						
Reduced legal costs for companies in the construction sector						

Please explain your reply.

III.1.d. Asbestos Directive

The Asbestos Directive (2009/148/EC) aims to protect workers against risks to their health, including the prevention of such risks, arising or likely to arise from exposure to asbestos.
Further information is available via the following link: https://osha.europa.eu/en/legislation/directives/2009-148-ec-exposure-to-asbestos-at-work

46. ONLY IF Q36 = a: ***Please indicate the extent of any costs that have been incurred by the construction sector as a result of the following measures designed to reduce the risks to workers associated with asbestos.****

	Significant costs	Moderate costs	No costs	No opinion
Undertaking a risk assessment in cases where an activity is likely to involve a risk of exposure to asbestos				
Undertaking clinical surveillance of workers				
Compiling and submitting information to the national register, indicating the nature and duration of the activity and the exposure to which workers have been subjected				
Purchasing and displaying warning signs				
Training of workers who are, or are likely to be, exposed to dust from asbestos				
Submitting a notification to the responsible authority				
Measuring asbestos fibres in the air at the workplace				
Purchasing respiratory and/or other personal protective equipment				
Purchasing other equipment to minimize exposure to dust arising from asbestos				
Implementing organizational measures				
Storing, transporting and cleaning materials and equipment contaminated with asbestos dust				
Drawing up a plan of work				
Other (please specify)				

Please explain.

47. ONLY IF Q36 = a: ***Please indicate the extent of any benefits that have arisen as a result of the following measures designed to reduce the risks to workers associated with asbestos.****

	Significant benefits	Moderate benefits	No benefits	No opinion
Undertaking a risk assessment in cases where an activity is likely to involve a risk of exposure to asbestos				
Undertaking clinical surveillance of workers				
Compiling and submitting information to the national register, indicating the nature and duration of the activity and the exposure to which workers have been subjected				
Purchasing and displaying warning signs				
Training of workers who are, or are likely to be, exposed to dust from asbestos				
Submitting a notification to the responsible authority				
Measuring asbestos fibres in the air at the workplace				
Purchasing respiratory and/or other personal protective equipment				
Purchasing other equipment to minimize exposure to dust arising from asbestos				
Implementing organizational measures				
Storing, transporting and cleaning materials and equipment contaminated with asbestos dust				
Drawing up a plan of work				
Other (please specify)				

Please explain.

48. ONLY IF Q36 = a: ***To what extent has the Asbestos Directive (2009/148/EC) contributed to the following benefits?****

	Large positive impact (++)	Slight positive impact (+)	No impact	Slight negative impact (-)	Large negative impact (--)	No opinion
Reduced risks to workers' health and safety						
Fewer work days lost to work related injuries and ill-health						

Increased productivity in the construction sector						
Increased employee retention in the construction sector						
Reduced insurance premiums for companies in the construction sector						
Reduced legal costs for companies in the construction sector						

Please explain your reply.

III.2. Questions on EU legislation related to the environment and the construction sector

49. Do you wish to respond to questions on the environment and the construction sector?*

a. Yes b. No

III.2.a. Waste Framework Directive

The Waste Framework Directive introduced the "polluter-pays principle" by requiring that the cost of waste management be borne by the original waste producer or by the current or previous waste holders. It allows European Member States to take measures to ensure that any company that professionally develops, manufactures, processes, treats, sells or imports products has "extended producer responsibility". Such measures may include an acceptance of returned products and of the waste that remains after those products have been used, as well as the subsequent management of the waste and financial responsibility for such activities.
Further information is available via the following link: http://ec.europa.eu/environment/waste/framework

50.** ONLY IF Q49 = a: **Please indicate how the cost of waste management has changed now that businesses are required to separate their waste for recovery?*

Costs have increased significantly	Costs have increased slightly	Costs have not changed	Costs have reduced slightly	Costs have reduced significantly	No opinion

51.** ONLY IF Q49 = a: **To what extent has EU legislation on waste contributed to the following benefits?*

Potential benefits	Large positive impact (++)	Slight positive impact (+)	No impact	Slight negative impact (-)	Large negative impact (--)	No opinion
Reduced environmental impacts						
Improved corporate image for companies operating in the construction sector						
Improved resource efficiency						
Reduced risks to human health						
Reduced insurance premiums for companies in the construction sector						
Reduced legal costs for companies in the construction sector						

Please explain your reply.

III.2.b. Environmental Impact Assessment Directive

The Environmental Impact Assessment Directive (1985/337/EEC) states that consent for public and private projects which are likely to have "significant effects" on the environment should be granted only after an assessment of the likely significant environmental effects of those projects has been carried out.
Further information is available via the following link: http://ec.europa.eu/environment/eia/eia-legalcontext.htm

52. ONLY IF Q49 = a: ***What impacts have arisen for the construction sector as a result of having to carry out an Environmental Impact Assessment?****

Costs have increased significantly	Costs have increased slightly	Costs have not changed	Costs have reduced slightly	Costs have reduced significantly	No opinion

53. ONLY IF Q49 = a: ***What is your opinion regarding the criteria and thresholds determining when an Environmental Impact Assessment is required to be carried out?****

	Agree	Disagree	No opinion
Criteria/thresholds for projects to require an Environmental Impact Assessment are set too low			
Criteria/thresholds for projects to require an Environmental Impact Assessment are set too high			
Criteria/thresholds for projects to require an Environmental Impact Assessment are set about right			
Most/all of the right types of projects require an Environmental Impact Assessment			
Some types of projects that should have an Environmental Impact Assessment do not require them under the legislation			
Environmental Impact Assessment legislation captures the majority/all of the right types of project			

54. ONLY IF Q49 = a: ***To what extent has the requirement to carry out an Environmental Impact Assessment for certain projects helped to reduce the environmental impacts of construction projects?****

Large positive impact (++)	Slight positive impact (+)	No impact	Slight negative impact (-)	Large negative impact (--)	No opinion

55. ONLY IF Q49 = a: ***Are you aware of any other benefits arising from the requirement to carry out an Environmental Impact Assessment for certain construction projects?* If yes, please explain your answer.***

III.3. Final questions on environment and health & safety

III.3.a. Final questions on health and safety

56. ONLY IF Q36 = a: ***Please indicate the extent to which you agree or disagree with the following statements****

	Strongly agree	Somewhat agree	Somewhat disagree	Strongly disagree	No opinion
Workers in the construction sector are **adequately protected** against the risks posed to their health by **exposure to asbestos**					
Workers in the construction sector are **adequately protected** against the risks posed to their health by the **manual handling of loads**					
Workers in the construction sector are **adequately protected** against the risks posed to their health **on temporary and mobile construction sites**					

57. ONLY IF Q36 = a: ***Have you or your organisation … (please select)****

	Yes	No	No opinion
Benefitted from the harmonisation of reporting requirements for health and safety			
Benefitted from a harmonisation of other health and safety requirements (excluding reporting requirements)			
Found health and safety requirements that are consistent with each other and complementary, offering a mutually supportive implementation			
Spotted inconsistencies or overlaps among various health and safety requirements			
Identified areas within wider EU (or national) policy that are in conflict with EU (or national) health and safety legislation			
Identified health and safety requirements that help to support EU (or national) policy in other policy areas			
Found concepts, notions, and definitions that are unclear and for which interpretation is difficult			
Identified obsolete health and safety requirements, i.e. requirements that are not aligned with current market reality and technical developments			
Identified health and safety requirements that need to be simplified			
Other aspects – please specify below			

If you replied yes to any of the above, please explain your answer. Please clearly indicate which EU (or national) legislation you are discussing.

[TEXT BOX - MAX 500 CHARACTERS PER BOX]

Benefitted from the harmonisation of reporting requirements for health and safety
Benefitted from a harmonisation of other health and safety requirements (excluding reporting requirements)
Found health and safety requirements that are consistent with each other and complementary, offering a mutually supportive implementation
Spotted inconsistencies or overlaps among various health and safety requirements
Identified areas within wider EU (or national) policy that are in conflict with EU (or national) health and safety legislation

Identified health and safety requirements that help to support EU (or national) policy in other policy areas
Found concepts, notions, and definitions that are unclear and for which interpretation is difficult
Identified obsolete health and safety requirements, i.e. requirements that are not aligned with current market reality and technical developments
Identified health and safety requirements that need to be simplified
Other aspects – please specify below

III.3.b. Final questions on environment

58. ONLY IF Q49 = a: ***To what extent do you agree with the following statement?****

	Strongly agree	Somewhat agree	Somewhat disagree	Strongly disagree	No opinion
The environment is adequately protected against harm caused by the construction industry					

59. ONLY IF Q49 = a: ***Have you or your organisation … (please select)****

	Yes	No	No opinion
Benefitted from the harmonisation of environmental reporting requirements			
Benefitted from a harmonisation of other requirements designed to protect the environment (excluding reporting requirements)			
Found requirements pertaining to the environment that are consistent with each other and complementary, offering a mutually supportive implementation			
Spotted inconsistencies or overlaps among various environment requirements			
Identified areas within wider EU (or national) policy that are in conflict with EU (or national) environment legislation			
Identified requirements that have been designed to protect the environment that also help to support EU (or national) policy in other policy areas			
Found concepts, notions, and definitions that are unclear and for which interpretation is difficult			
Identified requirements designed to protect the environment that are now obsolete, i.e. requirements that are not aligned with current market reality and technical developments			
Identified environmental requirements that need to be simplified			
Other aspects – please specify below			

If you replied yes on any of the above, please explain your answer. Please clearly indicate which EU (or national) legislation you are discussing.

[TEXT BOX - MAX 500 CHARACTERS PER BOX]

Benefitted from the harmonisation of environmental reporting requirements
Benefitted from a harmonisation of other requirements designed to protect the environment (excluding reporting requirements)
Found requirements pertaining to the environment that are consistent with each other and complementary, offering a mutually supportive implementation

Spotted inconsistencies or overlaps among various environment requirements
Identified areas within wider EU (or national) policy that are in conflict with EU (or national) environment legislation
Identified requirements that have been designed to protect the environment that also help to support EU (or national) policy in other policy areas
Found concepts, notions, and definitions that are unclear and for which interpretation is difficult
Identified requirements designed to protect the environment that are now obsolete, i.e. requirements that are not aligned with current market reality and technical developments
Identified environmental requirements that need to be simplified

Open public consultation as part of the Fitness Check for the Construction Sector

Questionnaire for professionals in the construction sector / respondents answering on behalf of an organisation, institution or company

I. Information about the construction sector professionals or organisation/institution/company

Please note throughout the questionnaire, hidden questions may show up depending on your answers, so please disregard the numbering in case it does not follow a completely logical order.

1. ***Please specify which category best describes you or the organisation/institution/company you are representing from the list below.****
[SINGLE CHOICE FILTER QUESTION]

a.	Employee in the construction sector – not representing my company
b.	Independent/Entrepreneur in the construction sector – not representing my company
c.	Private company – representing my company
d.	Utility
e.	International organisation
f.	Workers organisation/association/trade union
g.	Non-governmental organisation (NGO)
h.	Industry/business association
i.	Other interest group organisation/association
j.	Consultancy
k.	University
l.	Think Tank/research institute
m.	Political party/organisation
n.	Other (please specify: *Open text box*)

2. ONLY IF Q1. = c: ***If you are answering on behalf of a private company, please indicate the size of your business/the business you work for/in: ****
[SINGLE CHOICE]

a.	a micro enterprise (between 1 and 9 employees, including self-employed professionals)
b.	a small enterprise (between 10 and 49 employees)
c.	a medium enterprise (between 50 and 249 employees)
d.	a large enterprise (≥ 250 employees)

3. ***Do you or your organisation/institution/company primarily deal with the construction sector?****

a.	Yes
b.	No

4. ONLY IF Q3. = a: ***Please indicate the principal field of your activity :****
[SINGLE CHOICE]

a. Manufacturing/import/distribution of construction materials or construction products (NACE Rev.2, sections B and C)
b. Building construction activities (NACE Rev.2, code F41)
c. Development of building projects (NACE Rev.2, code F41.1)
d. Demolition of buildings (NACE Rev.2, code F43.1)
e. Provision of construction installation services (such as plumbers, electricians, installers of heating, ventilation and air conditioning) (NACE Rev.2, code F43.2)
f. Provision of building finishing services (roofing, plastering, etc.) (NACE Rev.2, code F43.3 and F43.9)
g. Architecture and/or engineering (NACE Rev.2, code M71)
h. Technical testing and analysis (such as auditors, certifiers) (NACE Rev.2, code M71)
i. Real estate activities (NACE Rev.2, code L)
j. Other (please specify)

5. ONLY IF Q3. = a: ***Among the following market segments, what is the most relevant for your business?****

a. Construction of new buildings – Residential
b. Construction of new buildings – Non Residential (e.g. office buildings, schools)
c. Maintenance/Renovation of existing buildings – Residential
d. Maintenance/Renovation of existing buildings – Non Residential (e.g. office buildings, schools)
e. Other construction works (e.g. public works, infrastructure)

6. Please indicate the principal country of your establishment or of the organisation/institution/business you are representing.*

AT, BE, BG, etc. (*drop-down menu with "non-EU country: please specify"*)

7. Please enter your full name and the full name of your business, or of your organisation/institution/company *

Open text box - max. 100 characters

8. Is your organisation/institution/company registered in the EU Transparency Register? (If not, you may register here, although you do not have to be registered to reply to this consultation)*

a. Yes
b. No

ONLY IF Q8. = a: ***If registered, please indicate your ID number:****

Open text box

9. How would you prefer your contribution to be published on the Commission website, if at all?*

d. Under the name indicated (All your responses to the consultation will be published as submitted)
e. Anonymously (Please ensure that your contribution does not include information which may disclose your identity. Except for the preliminary identification section I, your responses to the consultation will be published as submitted)
f. Not at all

ONLY IF Q9. = c: ***Please explain your objection to publication:****

Open text box

II. Questionnaire on Internal market and energy efficiency

II.1. Questions on EU legislation related to the activity of construction businesses and professionals

This first section asks questions on the implications on the construction sector of the following Directives: Professional Qualifications Directive, Services Directive and Late Payments Directive.

- **Services Directive** (Directive 2006/123/EC on services in the Internal Market)
  http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex:32006L0123

The Services Directive aims at realising the full potential of the internal market, facilitating the establishment and cross-border operations of service providers. To this effect, it requires Member States to simplify the procedures for the permanent or temporary provision of service activities and to eliminate authorisation schemes that are discriminatory, disproportionate or not justified by overriding public interest considerations. This is accompanied by measures aimed at strengthening the rights of service users and at promoting the high quality of services. The Directive adopts a very broad definition of services, which includes construction and related professional services as well as real estate services.

- **Professional Qualifications Directive** (Directive 2005/36/EC on the recognition of professional qualifications)
  http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:02005L0036-20140117

The Professional Qualification Directive aims at facilitating the mobility of members of regulated professions (such as architects, engineers, plumbers, electricians and energy auditors) across the EU. This objective is pursued primarily through the establishment of mechanisms for the recognition of qualifications based on training or experience (automatic recognition, mutual recognition). This is accompanied by specific measures intended to ease the provision of professional services on a temporary basis and the setting of certain minimum requirements and obligations for professionals operating across borders.

- **Late Payments Directive** (Directive 2011/7/EU on combating late payment in commercial transactions)
  http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32011L0007

The Late Payment Directive aims at combating late payments in commercial transactions in order to contribute to the proper functioning of the internal market and to foster the competitiveness of undertakings, particularly small and medium-sized enterprises. This is done by setting time limits for the payment of invoices and by imposing penalties for late payments.

II.1.a. Simplification of administrative procedures

EU legislation (in particular the Services Directive) requires national authorities to simplify administrative procedures, including those related to the construction and renovation of buildings. This is intended to lower the administrative burden, with a reduction in applicable procedures (including due to elimination of time or territorial validity limitations) or procedural steps, complexity of application forms, documents to be submitted, administrative fees charged and/or other out-of-pocket costs and/or workload (staff time) time required to handle administrative procedures, including availability of information online, submission of simple-form documents, e-procedure availability and tacit approval.

10. ***Have you asked for a permit for construction works and/or the provision of services related to construction works in the period 2004-2014?****

The following permits are envisaged under this section: building permit for new construction; building permit for renovation work; operational permit (e.g. permit for scaffolding) required during construction works; and use permit (e.g. a permit necessary upon completion of construction works)

a. I asked for one or more permits for construction works and/or the provision of services related to the construction works
b. I acted as a representative or intermediary in the permit process for construction works
c. No

11. ***Do you want to respond to questions on permits for construction works and/or the provision of services related to construction works?****

a. Yes
b. No (*you will be redirected to question 17*)

12. ONLY IF Q11. = a: ***Have you noted or perceived any changes in dealing with any of the following administrative procedures?****

	More complexity	No change	Simplification	No opinion
Obtaining a building permit for new construction				
Obtaining a building permit for renovation work				
Obtaining an operational permit (e.g. permit for scaffolding) required during construction works				
Obtaining a use permit (e.g. a permit necessary upon completion of construction works)				

13. ONLY IF Q12. = Obtaining a building permit for new construction - More complexity OR Simplification: ***Do the above perceived changes relate to the duration of the process, the requirements to submit the permit request (e.g. online submission) and/or the cost related to a building permit for new construction?****

	Duration	Requirements	Cost	No opinion
Obtaining a building permit for new construction				

14. ONLY IF Q12. = Obtaining a building permit for renovation work - More complexity OR Simplification: ***Do the above perceived changes relate to the duration of the process, the requirements to submit the permit request (e.g. online submission) and/or the cost related to a building permit for renovation work?****

	Duration	Requirements	Cost	No opinion
Obtaining a building permit for renovation work				

15. ONLY IF Q12. = Obtaining an operational permit (e.g. permit for scaffolding) required during construction works - More complexity OR Simplification: ***Do the above perceived changes relate to the duration of the process, the requirements to submit the permit request (e.g. online submission) and/or the cost related to an operational permit?****

	Duration	Requirements	Cost	No opinion
Obtaining an operational permit (e.g. permit for scaffolding) required during construction works				

16. ONLY IF Q12. = Obtaining a use permit (e.g. a permit necessary upon completion of construction works) - More complexity OR Simplification: ***Do the above perceived changes relate to the duration of the process, the requirements to submit the permit request (e.g. online submission) and/or the cost related to a use permit?****

	Duration	Requirements	Cost	No opinion
Obtaining a use permit (e.g. a permit necessary upon completion of construction works)				

II.1.b. Cross-border operations

This module investigates the influence of EU legislation (in particular the Professional Qualifications Directive) on cross border operations, both outbound (i.e. the influence on the investee's operations abroad, if any) and inbound (i.e. the influence of a stronger presence of construction firms from other EU countries).

17. Are you or is the organisation you are representing carrying out cross-border activities in the EU?*
"cross-border activity": cross-border establishment or cross-border provision of products or services

a. Yes
b. No

18. ONLY IF Q17. = a: Please indicate the Member State(s) in which the cross-border activity took place or was intended to take place.*

AT, BE, BG, etc. (*drop-down menu*)

19. Do you want to respond to questions on the recognition of professional qualifications?*

a. Yes
b. No (*you will be redirected to question 26*)

20. ONLY IF Q19. = a: ***Have you noted or perceived any changes of these procedures in the past years?****

	More complexity	No change	Simplification	No opinion
Obtaining the recognition of qualifications of professionals qualified in other EU Member States				
Obtaining the authorisation to perform an activity in the construction sector in another EU Member States on a temporary basis (freedom to provide services)				
Obtaining the authorisation to perform an activity in the construction sector in another EU Member States on a permanent basis (freedom of establishment)				

21. ONLY IF Q20. = Obtaining the recognition of qualifications of professionals qualified in other EU Member States - More complexity OR Simplification: ***Do the above perceived changes relate to the duration of the process, the requirements related to the authorisation or recognition (e.g. online submission, possibility to work with more qualified partners) and/or the cost related to the authorisation or recognition?****

	Duration	Requirements	Cost	No opinion
Obtaining the recognition of qualifications of professionals qualified in other EU Member States				

22. ONLY IF Q20. = Obtaining the authorisation to perform an activity in the construction sector in another EU Member States on a temporary basis (freedom to provide services) - More complexity OR Simplification: ***Do the above perceived changes relate to the duration of the process, the requirements related to the authorisation or recognition (e.g. online submission, possibility to work with more qualified partners) and/or the cost related to the authorisation or recognition?****

	Duration	Requirements	Cost	No opinion
Obtaining the authorisation to perform an activity in the construction sector in another EU Member States on a temporary basis (freedom to provide services)				

23. ONLY IF Q20. = Obtaining the authorisation to perform an activity in the construction sector in another EU Member States on a permanent basis (freedom of establishment) - More complexity OR Simplification: ***Do the above perceived changes relate to the duration of the process, the requirements related to the authorisation or recognition (e.g. online submission, possibility to work with more qualified partners) and/or the cost related to the authorisation or recognition?****

	Duration	Requirements	Cost	No opinion
Obtaining the authorisation to perform an activity in the construction sector in another EU Member States on a permanent basis (freedom of establishment)				

24. ONLY IF Q19. = a: ***Over the period 2009-2014, have you perceived a stronger presence of construction firms from other EU countries in your home market?****

a. Yes
b. No

25. ONLY IF Q19. = a: ***In your experience, among the changes identified in the questions above, have any…:****

	Yes	No	No opinion
Stimulated favourable investment conditions within your sector			
Facilitated the free circulation of construction products			
Facilitated establishment in a Member State			
Facilitated the mobility of construction workers			
Facilitated the provision of cross-border construction services			
Fostered the global competitive position of EU construction enterprises			
Reduced administrative costs for the construction sector industry			

Please explain (If you refer to a specific Member State, please state this clearly):
[TEXT BOX - MAX 500 CHARACTERS PER BOX]

Stimulated favourable investment conditions within the sector
Facilitated the free circulation of construction products
Facilitated establishment in a Member State
Facilitated the mobility of construction workers
Facilitated the provision of cross-border construction services
Fostered the global competitive position of EU construction enterprises

Reduced administrative costs for the sector construction industry

II.1.c. Late payments

EU legislation (in particular the Late Payments Directive, approved in 2011) requires national authorities to adopt measures to reduce the problem of late payments. In particular, government authorities are required to pay within maximum 30 days, payments among private parties should be settled within 60 days. These measures are intended to improve the firms' cash flow position. In addition, EU legislation gives creditors an automatic entitlement to the payment of late payment interests, which potentially allows for the reduction of litigation costs.

26. Do you want to respond to questions on late payments?*

c. Yes d. No (*you will be redirected to question 31*)

27. ONLY IF Q26. = a: ***In the years following the implementation of the Late Payments Directive, have payment times from <u>public</u> clients – according to your own experience:****

Decreased	Remained the same	Increased	No opinion

28. ONLY IF Q26. = a: ***In the years following the implementation of the Late Payments Directive, have your own payment times to <u>public</u> clients – according to your own experience:****

Decreased	Remained the same	Increased	No opinion

29. ONLY IF Q26. = a: ***In the years following the implementation of the Late Payments Directive, have payment times from <u>private</u> clients – according to your own experience:****

Decreased	Remained the same	Increased	No opinion

30. ONLY IF Q26. = a: ***In the years following the implementation of the Late Payments Directive, have your own payment times to <u>private</u> clients – according to your own experience:****

Decreased	Remained the same	Increased	No opinion

II.2. Questions on EU legislation related to energy efficiency in general and the use of renewable energy in the construction sector

This second section asks questions on the implications on the construction sector of the following Directives: Energy Efficiency Directive, Energy Performance of Buildings Directive, Renewable Energy Sources Directive.

- **Energy Efficiency Directive** (Directive 2012/27/EU on energy efficiency)
  http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex:32012L0027

The Energy Efficiency Directive introduces a series of measures intended to facilitate the achievement of the EU's 2020 energy savings target. These include provisions concerning: (i) the renovation of the stock of buildings, including an annual target for the renovation of central government buildings; (ii) the reduction in the volume of energy sales by energy distributors; (iii) the strengthening of energy audits (mandatory for large enterprises); and (iv) the promotion of other energy efficiency mechanisms (certification schemes, performance related contractual arrangements). While these obligations fall on public authorities or other entities outside the construction sector, their fulfilment may contribute to an increase in the demand for both building renovation and specialised energy efficiency services.

- **Energy Performance of Buildings Directive** (Directive 2010/31/EU of the European Parliament and of the Council on the energy performance of buildings)
  http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32010L0031

The Energy Performance of Buildings Directive supports the achievement of the energy efficiency targets by requiring Member States to introduce specific measures for buildings (both existing and new ones) and affecting construction, renovation, and ancillary services. In particular, the EPBD provides for: (i) a common methodological framework for measuring the energy performance of buildings; (ii) the obligation for Member States to set minimum requirements for the energy performance of new buildings, buildings undergoing major renovation, and technical building elements and systems; (iii) mandatory energy performance certification and inspections.

- **Renewable Energy Sources Directive** (Directive 2009/28/EC of the European Parliament and of the Council of 23 April 2009 on the promotion of the use of energy from renewable sources)
  http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:02009L0028-20151005

The Renewable Energy Sources Directive's objective is to establish a common framework for the promotion of energy from renewable sources, including setting mandatory national targets for the overall share of energy from renewable sources. In particular, the Directive includes a provision on the development and mutual recognition by Member States of certification or equivalent qualification schemes for installers of small-scale renewable energy systems.

II.2.a. Inspection/Installation and accredited experts

EU legislation (in particular the Energy Performance in Buildings Directive) requires inspections of heating and air-conditioning systems to be carried out by qualified and/or accredited experts. Similarly, the Renewable Energy Sources Directive requires the installation of renewable energy systems to be carried out by qualified and/or accredited experts.

31. Do you wish to respond to questions on inspection/installation and accreditation?*

a.	Yes
b.	No (*you will be redirected to question 36*)

32. ONLY IF Q31. = a: ***Was the inspection/installation carried out by visibly qualified and/or accredited experts (or in any case such a qualification was brought up in the context of the inspection/installation)? ****

	Yes	No	No opinion
Inspection of heating systems			
Inspection of air-conditioning systems			
Installation of renewable energy systems			

33. ONLY IF Q31. = a: ***In your Member State, is the list of installers and/or inspectors who are qualified or certified publicly available to your knowledge? In your experience, does the general public make use of this list?****

The list of installers and the list of inspectors are only available if your Member State did not opt for an alternative system.

	Publicly available	Not publicly available	Actively used by general public	Not actively used by general public	No opinion
List of qualified and/or accredited experts for the inspection of heating and air-conditioning systems(relevant under the Energy Performance in Buildings Directive)					
List of qualified and/or certified installers of renewable energy systems (relevant under the Renewable Energy Sources Directive)					

34. ONLY IF Q31. = a : ***Have you noted or perceived any changes related to the frequency of inspection of heating and air-conditioning systems and of installation of renewable energy systems?****

	More frequent	No change	Less frequent	No opinion
Inspection of heating systems				
Inspection of air-conditioning systems				
Receiving advice concerning the efficiency of the boiler				
Receiving advice concerning the efficiency of the air-conditioning system				
Installation of renewable energy systems				

35. ONLY IF Q34. = More frequent OR Less frequent: ***In your experience, among the changes you have identified in the questions above, have any…:****

	No	Yes	No opinion
Improved the energy performance of construction products			
Improved the energy efficiency of buildings			
Reduced the environmental footprint of buildings			
Stimulated the construction of new buildings			
Stimulated the renovation of buildings			
Stimulated the installation of renewable energy systems			

Please explain:

[TEXT BOX - MAX 500 CHARACTERS PER BOX]

Improved the energy performance of construction products
Improved the energy efficiency of buildings
Reduced the environmental footprint of buildings
Stimulated the construction of new buildings
Stimulated the renovation of buildings
Stimulated the installation of renewable energy systems
Improved the energy performance of construction products

II.2.b. Public procurement

One of the objectives of the Energy Efficiency Directive is to improve and strengthen energy efficiency through public procurement. Article 6 of the Directive states that Member States shall ensure that central governments purchase only products, services and buildings with a high energy-efficiency performance. The central governments of the Member States should "lead by example" so that local and regional procurement bodies also strengthen energy efficiency in their public procurement procedures.

36. Did you notice an increased use of energy efficiency criteria in the public tenders of the central, local and regional governments?*

	Yes	No	No opinion
National government			
Local government			
Regional government			

II.3. Questions on EU legislation related to products used in construction

This third section asks questions on the implications on the construction sector of the following Directives and Regulation: the Construction Products Regulation, the Ecodesign Directive and the Energy Labelling Directive.

- **Construction Products Regulation** (Regulation No 305/2011 laying down harmonised conditions for the marketing of construction products)
  http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:02011R0305-20140616

The Construction Products Regulation sets out the conditions for the placing or making available on the market of construction products, by establishing harmonised rules on how to express the performance of construction products in relation to their essential characteristics and on the affixing of the CE marking. In addition, the Regulation requires manufacturers to draw up a declaration of performance for construction products that are either covered by harmonised standards or conform to an issued European Technical Assessment.

- **Ecodesign Directive** (Directive 2009/125/EC establishing a framework for the setting of eco-design requirements for energy-using products)
  http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:02009L0125-20121204

The Ecodesign Directive establishes a framework for the setting of mandatory requirements for both energy-using and energy-related products (i.e. products that do not use energy but have an impact on energy consumption). In particular, the Directive includes various articles relating to ensuring compliance of a product with the Directive's requirements prior to placing on the market. Other provisions related to CE market, consumer information and the prohibition of markings likely to mislead users. Finally, a large part of the Directive deals with the creation of ecodesign implementing measures for products, which must respond to different sets of criteria.

The Ecodesign Directive is a framework directive, and the ecodesign requirements are set through Commission regulations. Several construction products and materials are classified as energy-using or energy-related products. However, no secondary regulations specifically targeting construction materials have been adopted so far, although work in this direction has been initiated (e.g. for windows and insulation materials).

- **Energy Labelling Directive** (Directive 2010/30/EU on the indication by labelling and standard product information of the consumption of energy and other resources by energy-related products)
  http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:02010L0030-20140605

The Energy Labelling Directive complements the Ecodesign Directive by setting a framework for the labelling and the provision of information regarding energy consumption. In particular, the Energy Labelling Directive settles the responsibility of suppliers to provide the product's label and fiche, which must be accurate. Initially targeted at household appliances, the Directive is now applicable to a wide range of energy-related products. As in the case of the Ecodesign Directive, no secondary legislation has so far been adopted that relates to construction products.

II.3.a. CE marking and Declaration of Performance

CE marking under the Construction Products Regulation enables a product to be placed legally on the market in any Member State. CE marking indicates that a product is consistent with its Declaration of Performance (DoP) as made by the manufacturer. The declaration varies according to the particular harmonised technical specification covering the product.

37. Do you wish to respond to questions on CE marking and Declaration of Performance (DoP)?*

a.	Yes
b.	No (*you will be redirected to question 41*)

38. ONLY IF Q37. = a: ***To what extent is the information provided through the DoP and the CE marking important in accessing other Member States' markets?****

a.	Not at all
b.	To a limited extent

c. To some extent
d. To a high extent
e. No opinion

39. ONLY IF Q37. = a: ***Have the DoP and CE marking procedures for construction products been changed according to policies in the following areas?****

	No	Yes	No opinion
Energy efficiency in buildings			
Environmental protection			
Public health and safety			
Health & safety at work			

ONLY IF Q39. = Yes: ***If yes, please explain (e.g. what are the effects in terms of costs, duration of the procedures, particular requirements of Member States)***

[TEXT BOX - MAX 500 CHARACTERS]

40. ONLY IF Q37. = a: ***To what extent does the Ecodesign framework affect the credibility of the CE marking of construction products?****

a. Not at all
b. To a limited extent
c. To some extent
d. To a high extent
e. No opinion

II.4. Coherence questions

This final section is linked to all of the above as it wants to identify sources of impact - positive or negative - between either the various pieces of EU legislation themselves or between EU legislation and its implementation at national level.

41. Are you familiar with two or more of the pieces of the EU legal framework for the Construction Sector discussed above?

These EU instruments are: Construction Product Regulation, Professional Qualifications Directive, Services Directive, Late Payments Directive, Energy Efficiency Directive, Energy Performance of Buildings Directive, Ecodesign Directive, Energy Labelling Directive, Renewable Energy Sources Directive.

c. Yes
d. No (*you will be redirected to question 44*)

42. ONLY IF Q41. = a: ***How familiar are you with the each of the following pieces of the EU legal framework for the Construction Sector, and how they apply in your country?****

	Very familiar	Somewhat familiar	Not familiar
Construction Product Regulation			
Professional Qualification Directive			
Services Directive			
Late Payments Directive			
Energy Efficiency Directive			
Energy Performance of Buildings Directive			
Ecodesign Directive			
Energy Labelling Directive			
Renewable Energy Sources Directive			

43. ONLY IF Q42. = very familiar AND/OR somewhat familiar: ***If you are somewhat familiar to very familiar with any of the above pieces of EU and/or national (transposition) legislation, have you…?****

	Yes	No	No opinion
Benefitted from the harmonisation of reporting requirements			
Experienced easier access to European Markets			
Identified requirements where simplification has improved implementation			
Found requirements that are consistent with each other and complementary, offering a mutually supportive implementation			
Spotted inconsistencies or overlaps among various requirements			
Found concepts, notions, and definitions that are unclear and for which interpretation is difficult			
Identified obsolete requirements, i.e. requirements that are not aligned with current market reality and technical developments			
Identified requirements that need to be simplified			
Identified requirements where simplification has not brought an improvement to implementation			
Other aspects – please specify below			

If you replied yes on any of the above, please explain your answer. Please clearly indicate whether your answer relates to EU legislation (and which EU legislation) and/or to national (transposition) legislation.

[TEXT BOX - MAX 500 CHARACTERS PER BOX]

Benefitted from the harmonisation of reporting requirements
Experienced easier access to European Markets
Identified requirements where simplification has improved implementation
Found requirements that are consistent with each other and complementary, offering a mutually supportive implementation

Spotted inconsistencies or overlaps among various requirements
Found concepts, notions, and definitions that are unclear and for which interpretation is difficult
Identified obsolete requirements, i.e. requirements that are not aligned with current market reality and technical developments
Identified requirements that need to be simplified
Identified requirements where simplification has not brought an improvement to implementation
Other aspects – please specify

III. Questionnaire on environment and health & safety

III.1. Questions on EU legislation related to occupational health and safety in the construction sector

44. Do you wish to respond to questions on the health and safety of construction workers?*

c. Yes d. No

III.1.a. Occupational Safety and Health Framework Directive

The Occupational Safety and Health Framework Directive (89/391/EEC) sets out general requirements **for the protection of the health and safety of workers** in the EU. Under the Directive, employers have a "duty to ensure the safety and health of workers in every aspect related to the work" (Article 5(1)) and must "take the measures necessary for the safety and health protection of workers" (Article 6(1)).
Further information is available via the following link: https://osha.europa.eu/en/legislation/directives/the-osh-framework-directive/1

45. ONLY IF Q44 = a: ***Are you answering on behalf of a private company?***

a. Yes b. No

46. ONLY IF Q45 = a: ***Please indicate the extent of any costs incurred by your company as a result of the following health and safety measures?****

	Significant costs	Moderate costs	No costs	No opinion
Provision of information and training for workers on health and safety				
Carrying out an evaluation of the risks to the health and safety of workers				
Purchasing Personal Protective Equipment				
Implementing protective organisational measures				
Reporting on occupational accidents				
Employing dedicated health and safety personnel (either in-house or externally)				
Monitoring workers' health				
Other (please specify)				

Please explain your reply.

47. ONLY IF Q45 = a: ***Please indicate the extent of any benefits that have arisen for your company as a result of the following health and safety measures?****

	Significant benefits	Moderate benefits	No benefits	No opinion
Provision of information and training for workers on health and safety				
Carrying out an evaluation of the risks to the health and safety of workers				

Purchasing Personal Protective Equipment				
Implementing protective organisational measures				
Reporting on occupational accidents				
Employing dedicated health and safety personnel (either in-house or externally)				
Monitoring workers' health				
Other (please specify)				

Please explain your reply.

48. ONLY IF Q45 = b: ***Please indicate the extent of any costs incurred by the construction sector as a result of the following health and safety measures?****

	Significant costs	Moderate costs	No costs	No opinion
Provision of information and training for workers on health and safety				
Carrying out an evaluation of the risks to the health and safety of workers				
Purchasing Personal Protective Equipment				
Implementing protective organisational measures				
Reporting on occupational accidents				
Employing dedicated health and safety personnel (either in-house or externally)				
Monitoring workers' health				
Other (please specify)				

Please explain your reply.

49. ONLY IF Q45 = b: ***Please indicate the extent of any benefits that have arisen as a result of the following health and safety measures?****

	Significant benefits	Moderate benefits	No benefits	No opinion
Provision of information and training for workers on health and safety				
Carrying out an evaluation of the risks to the health and safety of workers				
Purchasing Personal Protective Equipment				
Implementing protective organisational measures				
Reporting on occupational accidents				
Employing dedicated health and safety personnel (either in-house or externally)				
Monitoring workers' health				
Other (please specify)				

Please explain your reply.

50. IF Q44 = a: ***To what extent has the Occupational Safety and Health Framework Directive (89/391/EEC) contributed to the following benefits?****

	Large positive impact (++)	Slight positive impact (+)	No impact	Slight negative impact (-)	Large negative impact (--)	No opinion
Reduced risks to workers' health and safety						
Fewer work days lost to work related injuries and ill-health						
Increased productivity in the construction sector						
Increased employee retention in the construction sector						
Reduced insurance premiums for companies in the construction sector						
Reduced legal costs for companies in the construction sector						

Please explain your reply.

III.1.b. Manual handling of loads

Directive 90/269/EEC lays down minimum health and safety requirements for the manual handling of loads where there is a particular risk of back injury to workers. Under the Directive, employers are required to take appropriate organisational measures, or use the appropriate means (in particular mechanical equipment), in order to avoid the need

for the manual handling of loads by workers. Where the need for the manual handling of loads by workers cannot be avoided, employers must take the appropriate organisational measures, use the appropriate means or provide workers with such means in order to reduce the risk involved in the manual handling of such loads.
Further information is available via the following link: https://osha.europa.eu/en/legislation/directives/6

51. ONLY IF Q45 = a: ***Please indicate the extent of any costs incurred by your company as a result of the following measures designed to reduce the risks associated with the manual handling of loads by workers.****

	Significant costs	Moderate costs	No costs	No opinion
Purchasing mechanical equipment to avoid the need for manual handling of loads by workers				
Implementing organisational measures to reduce the risk involved in the manual handling of loads				
Providing information on the weight and centre of gravity of heavy loads				
Providing training on the correct way to handle loads				
Other (please specify)				

Please explain your reply.

52. ONLY IF Q45 = a: ***Please indicate the extent of any benefits that have arisen for your company as a result of the following measures designed to reduce the risks associated with the manual handling of loads by workers.****

	Significant benefits	Moderate benefits	No benefits	No opinion
Purchasing mechanical equipment to avoid the need for manual handling of loads by workers				
Implementing organisational measures to reduce the risk involved in the manual handling of loads				
Providing information on the weight and centre of gravity of heavy loads				
Providing training on the correct way to handle loads				
Other (please specify)				

Please explain your reply.

53. ONLY IF Q45 = b: ***Please indicate the extent of any costs incurred by the construction sector as a result of the following measures designed to reduce the risks associated with the manual handling of loads by workers.****

	Significant costs	Moderate costs	No costs	No opinion
Purchasing mechanical equipment to avoid the need for manual handling of loads by workers				
Implementing organisational measures to reduce the risk involved in the manual handling of loads				

Providing information on the weight and centre of gravity of heavy loads				
Providing training on the correct way to handle loads				
Other (please specify)				

Please explain your reply.

54. ONLY IF Q45 = b: ***Please indicate the extent of any benefits that have arisen as a result of the following measures designed to reduce the risks associated with the manual handling of loads by workers.****

	Significant benefits	Moderate benefits	No benefits	No opinion
Purchasing mechanical equipment to avoid the need for manual handling of loads by workers				
Implementing organisational measures to reduce the risk involved in the manual handling of loads				
Providing information on the weight and centre of gravity of heavy loads				
Providing training on the correct way to handle loads				
Other (please specify)				

Please explain your reply.

55. ONLY IF Q44 = a: ***To what extent has Directive 90/269/EEC on the manual handling of loads contributed to the following benefits?****

	Large positive impact (++)	Slight positive impact (+)	No impact	Slight negative impact (-)	Large negative impact (--)	No opinion
Reduced risks to workers' health and safety						
Fewer work days lost to work related injuries and ill-health						
Increased productivity in the construction sector						
Increased employee retention in the construction sector						

	Large positive impact (++)	Slight positive impact (+)	No impact	Slight negative impact (-)	Large negative impact (--)	No opinion
Reduced insurance premiums for companies in the construction sector						
Reduced legal costs for companies in the construction sector						

Please explain your reply.

III.1.c. Temporary or mobile construction sites

Directive 92/57/EEC lays down the minimum safety and health requirements for temporary or mobile construction sites (defined in Article 2(a) of the Directive as "any construction site at which building or civil engineering works are carried out").
Further information is available via the following link: https://osha.europa.eu/en/legislation/directives/15

56. ONLY IF Q45 = a: ***Please indicate the extent of any costs incurred by your company as a result of the following health and safety measures on temporary or mobile construction sites.****

	Significant costs	Moderate costs	No costs	No opinion
Appointing one or more coordinators for health and safety matters				
Drawing up a safety and health plan				
Complying with the minimum safety and health requirements for construction sites set out in Annex IV to the Directive				
Other (please specify)				

Please explain your reply.

57. ONLY IF Q45 = a: ***Please indicate the extent of any benefits that have arisen for your company as a result of the following health and safety measures on temporary or mobile construction sites*.***

	Significant benefits	Moderate benefits	No benefits	No opinion
Appointing one or more coordinators for health and safety matters				
Drawing up a safety and health plan				
Complying with the minimum safety and health requirements for construction sites set out in Annex IV to the Directive				
Other (please specify)				

Please explain your reply.

58. ONLY IF Q45 = b: ***Please indicate the extent of any costs incurred by the construction sector as a result of the following health and safety measures on temporary or mobile construction sites.****

	Significant costs	Moderate costs	No costs	No opinion
Appointing one or more coordinators for health and safety matters				
Drawing up a safety and health plan				
Complying with the minimum safety and health requirements for construction sites set out in Annex IV to the Directive				
Other (please specify)				

Please explain your reply.

59. ONLY IF Q45 = b: ***Please indicate the extent of any benefits that have arisen as a result of the following health and safety measures on temporary or mobile construction sites.****

	Significant benefits	Moderate benefits	No benefits	No opinion
Appointing one or more coordinators for health and safety matters				
Drawing up a safety and health plan				
Complying with the minimum safety and health requirements for construction sites set out in Annex IV to the Directive				
Other (please specify)				

Please explain your reply.

60. ONLY IF Q44 = a: ***To what extent has Directive 92/57/EEC on the minimum safety and health requirements for temporary or mobile construction sites contributed to the following benefits?****

	Large positive impact (++)	Slight positive impact (+)	No impact	Slight negative impact (-)	Large negative impact (--)	No opinion
Reduced risks to workers' health and safety						
Fewer work days lost to work related injuries and ill-health						
Increased productivity in the construction sector						
Increased employee retention in the construction sector						
Reduced insurance premiums for companies in the construction sector						
Reduced legal costs for companies in the construction sector						

Please explain your reply.

III.1.d. Asbestos Directive

The Asbestos Directive (2009/148/EC) aims to protect workers against risks to their health, including the prevention of such risks, arising or likely to arise from exposure to asbestos.
Further information is available via the following link: https://osha.europa.eu/en/legislation/directives/2009-148-ec-exposure-to-asbestos-at-work

61. ONLY IF Q45 = a: ***Please indicate the extent of any costs incurred by your company as a result of the following measures designed to reduce the risks to workers associated with asbestos.****

	Significant costs	Moderate costs	No costs	No opinion
Undertaking a risk assessment in cases where an activity is likely to involve a risk of exposure to asbestos				
Undertaking clinical surveillance of workers				
Compiling and submitting information to the national register, indicating the nature and duration of the activity and the exposure to which workers have been subjected				
Purchasing and displaying warning signs				
Training of workers who are, or are likely to be, exposed to dust from asbestos				
Submitting a notification to the responsible authority				
Measuring asbestos fibres in the air at the workplace				
Purchasing respiratory and/or other personal protective equipment				
Purchasing other equipment to minimize exposure to dust arising from asbestos				
Implementing organizational measures				
Storing, transporting and cleaning materials and equipment contaminated with asbestos dust				
Drawing up a plan of work				
Other (please specify)				

Please explain your reply.

62. ONLY IF Q45 = a: ***Please indicate the extent of any benefits that have arisen for your company as a result of the following measures designed to reduce the risks to workers associated with asbestos.****

	Significant benefits	Moderate benefits	No benefits	No opinion
Undertaking a risk assessment in cases where an activity is likely to involve a risk of exposure to asbestos				
Undertaking clinical surveillance of workers				
Compiling and submitting information to the national register, indicating the nature and duration of the activity and the exposure to which workers have been subjected				
Purchasing and displaying warning signs				
Training of workers who are, or are likely to be, exposed to dust from asbestos				
Submitting a notification to the responsible authority				
Measuring asbestos fibres in the air at the workplace				
Purchasing respiratory and/or other personal protective equipment				
Purchasing other equipment to minimize exposure to dust arising from asbestos				
Implementing organizational measures				
Storing, transporting and cleaning materials and equipment contaminated with asbestos dust				

	Significant benefits	Moderate benefits	No benefits	No opinion
Drawing up a plan of work				
Other (please specify)				

Please explain your reply.

63. ONLY IF Q45 = b: ***Please indicate the extent of any costs that have been incurred by the construction sector as a result of the following measures designed to reduce the risks to workers associated with asbestos.****

	Significant costs	Moderate costs	No costs	No opinion
Undertaking a risk assessment in cases where an activity is likely to involve a risk of exposure to asbestos				
Undertaking clinical surveillance of workers				
Compiling and submitting information to the national register, indicating the nature and duration of the activity and the exposure to which workers have been subjected				
Purchasing and displaying warning signs				
Training of workers who are, or are likely to be, exposed to dust from asbestos				
Submitting a notification to the responsible authority				
Measuring asbestos fibres in the air at the workplace				
Purchasing respiratory and/or other personal protective equipment				
Purchasing other equipment to minimize exposure to dust arising from asbestos				
Implementing organizational measures				
Storing, transporting and cleaning materials and equipment contaminated with asbestos dust				
Drawing up a plan of work				
Other (please specify)				

Please explain your reply.

64. ONLY IF Q45 = b: ***Please indicate the extent of any benefits that have arisen as a result of the following measures designed to reduce the risks to workers associated with asbestos.****

	Significant benefits	Moderate benefits	No benefits	No opinion
Undertaking a risk assessment in cases where an activity is likely to involve a risk of exposure to asbestos				
Undertaking clinical surveillance of workers				

	Significant benefits	Moderate benefits	No benefits	No opinion
Compiling and submitting information to the national register, indicating the nature and duration of the activity and the exposure to which workers have been subjected				
Purchasing and displaying warning signs				
Training of workers who are, or are likely to be, exposed to dust from asbestos				
Submitting a notification to the responsible authority				
Measuring asbestos fibres in the air at the workplace				
Purchasing respiratory and/or other personal protective equipment				
Purchasing other equipment to minimize exposure to dust arising from asbestos				
Implementing organizational measures				
Storing, transporting and cleaning materials and equipment contaminated with asbestos dust				
Drawing up a plan of work				
Other (please specify)				

Please explain your reply.

65. ONLY IF Q44 = a: ***To what extent has the Asbestos Directive (2009/148/EC) contributed to the following benefits?****

	Large positive impact (++)	Slight positive impact (+)	No impact	Slight negative impact (-)	Large negative impact (--)	No opinion
Reduced risks to workers' health and safety						
Fewer work days lost to work related injuries and ill-health						
Increased productivity in the construction sector						
Increased employee retention in the construction sector						

Reduced insurance premiums for companies in the construction sector						
Reduced legal costs for companies in the construction sector						

Please explain your reply.

Health and Safety in General

66. ONLY IF Q45 = a: ***Do you find it difficult and burdensome to comply with health and safety requirements?****

Complying with health and safety legislation is very difficult and burdensome	Complying with health and safety legislation is somewhat difficult and burdensome	Complying with health and safety legislation is acceptable	Complying with health and safety legislation is easy	Complying with health and safety legislation is very easy	No opinion

III.2. Questions on EU legislation related to the environment and the construction sector

67. Do you wish to respond to questions on the environment and the construction sector?*

a. Yes
b. No

III.2.a. Waste Framework Directive

The Waste Framework Directive introduced the "polluter-pays principle" by requiring that the cost of waste management be borne by the original waste producer or by the current or previous waste holders. It allows European Member States to take measures to ensure that any company that professionally develops, manufactures, processes, treats, sells or imports products has "extended producer responsibility". Such measures may include an acceptance of returned products and of the waste that remains after those products have been used, as well as the subsequent management of the waste and financial responsibility for such activities.
Further information is available via the following link: http://ec.europa.eu/environment/waste/framework

68. ONLY IF Q67 = a: ***Are you answering on behalf of a private company?***

a. Yes
b. No

69. ONLY IF Q67 = a: ***Please indicate how the cost of waste management has changed now that businesses are required to separate their waste for recovery?****

Costs have increased significantly	Costs have increased slightly	Costs have not changed	Costs have reduced slightly	Costs have reduced significantly	No opinion

70. ONLY IF Q68 = a: ***Do you find it difficult and burdensome to comply with waste management requirements?****

Complying with waste management legislation is very difficult and burdensome	Complying with waste management legislation is somewhat difficult and burdensome	Complying with waste management legislation is acceptable	Complying with waste management legislation is easy	Complying with waste management legislation is very easy	No opinion

Please explain your reply.

71. ONLY IF Q67 = a: ***To what extent has EU legislation on waste contributed to the following benefits?****

Potential benefits	Large positive impact (++)	Slight positive impact (+)	No impact	Slight negative impact (-)	Large negative impact (--)	No opinion
Reduced environmental impacts						
Improved corporate image for companies operating in the construction sector						
Improved resource efficiency						

Potential benefits	Large positive impact (++)	Slight positive impact (+)	No impact	Slight negative impact (-)	Large negative impact (--)	No opinion
Reduced risks to human health						
Reduced insurance premiums for companies in the construction sector						
Reduced legal costs for companies in the construction sector						

Please explain your reply.

III.2.b. Environmental Impact Assessment Directive

The Environmental Impact Assessment Directive (1985/337/EEC) states that consent for public and private projects which are likely to have "significant effects" on the environment should be granted only after an assessment of the likely significant environmental effects of those projects has been carried out.
Further information is available via the following link: http://ec.europa.eu/environment/eia/eia-legalcontext.htm

72. ONLY IF Q67 = a: ***What impacts have arisen for the construction sector as a result of having to carry out an Environmental Impact Assessment?****

Costs have increased significantly	Costs have increased slightly	Costs have not changed	Costs have reduced slightly	Costs have reduced significantly	No opinion

73. ONLY IF Q67 = a: ***What is your opinion regarding the criteria and thresholds determining when an Environmental Impact Assessment is required to be carried out?****

	Agree	Disagree	No opinion
Criteria/thresholds for projects to require an Environmental Impact Assessment are set too low			
Criteria/thresholds for projects to require an Environmental Impact Assessment are set too high			
Criteria/thresholds for projects to require an Environmental Impact Assessment are set about right			
Most/all of the right types of projects require an Environmental Impact Assessment			
Some types of projects that should have an Environmental Impact Assessment do not require them under the legislation			
Environmental Impact Assessment legislation captures the majority/all of the right types of project			

74. ONLY IF Q67 = a: ***To what extent has the requirement to carry out an Environmental Impact Assessment for certain projects helped to reduce the environmental impacts of construction projects?****

Large positive impact (++)	Slight positive impact (+)	No impact	Slight negative impact (-)	Large negative impact (--)	No opinion

75. ONLY IF Q67 = a: ***Are you aware of any other benefits arising from the requirement to carry out an Environmental Impact Assessment for certain construction projects?* If yes, please explain your answer.***

Please explain your reply.

III.3. Final questions on environment and health & safety

III.3.a. Final questions on health and safety

76. ONLY IF Q44 = a: ***Please indicate the extent to which you agree or disagree with the following statements****

	Strongly agree	Somewhat agree	Somewhat disagree	Strongly disagree	No opinion
Workers in the construction sector are **adequately protected** against the risks posed to their health by **exposure to asbestos**					
Workers in the construction sector are **adequately protected** against the risks posed to their health by the **manual handling of loads**					
Workers in the construction sector are **adequately protected** against the risks posed to their health **on temporary and mobile construction sites**					

77. ONLY IF Q44 = a: ***Have you or your organisation … (please select)****

	Yes	No	No opinion
Benefitted from the harmonisation of reporting requirements for health and safety			
Benefitted from a harmonisation of other health and safety requirements (excluding reporting requirements)			
Found health and safety requirements that are consistent with each other and complementary, offering a mutually supportive implementation			
Spotted inconsistencies or overlaps among various health and safety requirements			
Identified areas within wider EU (or national) policy that are in conflict with EU (or national) health and safety legislation			
Identified health and safety requirements that help to support EU (or national) policy in other policy areas			
Found concepts, notions, and definitions that are unclear and for which interpretation is difficult			
Identified obsolete health and safety requirements, i.e. requirements that are not aligned with current market reality and technical developments			
Identified health and safety requirements that need to be simplified			
Other aspects – please specify below			

If you replied yes to any of the above, please explain your answer. Please clearly indicate which EU (or national) legislation you are discussing.

[TEXT BOX - MAX 500 CHARACTERS PER BOX]

Benefitted from the harmonisation of reporting requirements for health and safety
Benefitted from a harmonisation of other health and safety requirements (excluding reporting requirements)
Found health and safety requirements that are consistent with each other and complementary, offering a mutually supportive implementation
Spotted inconsistencies or overlaps among various health and safety requirements
Identified areas within wider EU (or national) policy that are in conflict with EU (or national) health and safety legislation

Identified health and safety requirements that help to support EU (or national) policy in other policy areas
Found concepts, notions, and definitions that are unclear and for which interpretation is difficult
Identified obsolete health and safety requirements, i.e. requirements that are not aligned with current market reality and technical developments
Identified health and safety requirements that need to be simplified
Other aspects – please specify below

III.3.b. Final questions on environment

78. ONLY IF Q67 = a: ***To what extent do you agree with the following statement?****

	Strongly agree	Somewhat agree	Somewhat disagree	Strongly disagree	No opinion
The environment is adequately protected against harm caused by the construction industry					

79. ONLY IF Q67 = a: ***Have you or your organisation … (please select)****

	Yes	No	No opinion
Benefitted from the harmonisation of environmental reporting requirements			
Benefitted from a harmonisation of other requirements designed to protect the environment (excluding reporting requirements)			
Found requirements pertaining to the environment that are consistent with each other and complementary, offering a mutually supportive implementation			
Spotted inconsistencies or overlaps among various environment requirements			
Identified areas within wider EU (or national) policy that are in conflict with EU (or national) environment legislation			
Identified requirements that have been designed to protect the environment that also help to support EU (or national) policy in other policy areas			
Found concepts, notions, and definitions that are unclear and for which interpretation is difficult			
Identified requirements designed to protect the environment that are now obsolete, i.e. requirements that are not aligned with current market reality and technical developments			
Identified environmental requirements that need to be simplified			
Other aspects – please specify below			

If you replied yes on any of the above, please explain your answer. Please clearly indicate which EU (or national) legislation you are discussing.

[TEXT BOX - MAX 500 CHARACTERS PER BOX]

Benefitted from the harmonisation of environmental reporting requirements
Benefitted from a harmonisation of other requirements designed to protect the environment (excluding reporting requirements)
Found requirements pertaining to the environment that are consistent with each other and complementary, offering a mutually supportive implementation

Spotted inconsistencies or overlaps among various environment requirements
Identified areas within wider EU (or national) policy that are in conflict with EU (or national) environment legislation
Identified requirements that have been designed to protect the environment that also help to support EU (or national) policy in other policy areas
Found concepts, notions, and definitions that are unclear and for which interpretation is difficult
Identified requirements designed to protect the environment that are now obsolete, i.e. requirements that are not aligned with current market reality and technical developments
Identified environmental requirements that need to be simplified

Open public consultation as part of the Fitness Check for the Construction Sector

Questionnaire for public authorities

I. Information about the public authority

Please note throughout the questionnaire, hidden questions may show up depending on your answers, so please disregard the numbering in case it does not follow a completely logical order.

1. ***Please specify which category best describes the public authority you work for / answer on behalf of from the list below.****

[SINGLE CHOICE FILTER QUESTION]

a. National public authority
b. Regional / Local public authority
c. Other (please specify)

2. ***Does this public authority primarily deal with the construction sector?****

a. Yes
b. No

3. ***Please indicate the principal country of establishment of the public authority you work for / answer on behalf of ****

AT, BE, BG, etc. (*drop-down menu with "non-EU country: please specify"*)

4. ***Please enter the full name of the public authority you work for / answer on behalf of****

Open text box - max. 100 characters

5. ***Is this public authority registered in the EU Transparency Register? (If not, you may register here, although you do not have to be registered to reply to this consultation)****

c. Yes
d. No

ONLY IF Q5. = a: ***If registered, please indicate your ID number:****

Open text box

6. ***How would you prefer your contribution to be published on the Commission website, if at all?****

g. Under the name indicated (All your responses to the consultation will be published as submitted)

h.	Anonymously (Please ensure that your contribution does not include information which may disclose your identity. Except for the preliminary identification section I, your responses to the consultation will be published as submitted)
i.	Not at all

ONLY IF Q6. = c: ***Please explain your objection to publication:****

Open text box

II. Questionnaire on Internal market and energy efficiency

II.1. Questions on EU legislation related to the activity of construction businesses and professionals

This first section asks questions on the implications on the construction sector of the following Directives: Professional Qualifications Directive, Services Directive and Late Payments Directive.

- **Services Directive** (Directive 2006/123/EC on services in the Internal Market)
  http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex:32006L0123

The Services Directive aims at realising the full potential of the internal market, facilitating the establishment and cross-border operations of service providers. To this effect, it requires Member States to simplify the procedures for the permanent or temporary provision of service activities and to eliminate authorisation schemes that are discriminatory, disproportionate or not justified by overriding public interest considerations. This is accompanied by measures aimed at strengthening the rights of service users and at promoting the high quality of services. The Directive adopts a very broad definition of services, which includes construction and related professional services as well as real estate services.

- **Professional Qualifications Directive** (Directive 2005/36/EC on the recognition of professional qualifications)
  http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:02005L0036-20140117

The Professional Qualification Directive aims at facilitating the mobility of members of regulated professions (such as architects, engineers, plumbers, electricians and energy auditors) across the EU. This objective is pursued primarily through the establishment of mechanisms for the recognition of qualifications based on training or experience (automatic recognition, mutual recognition). This is accompanied by specific measures intended to ease the provision of professional services on a temporary basis and the setting of certain minimum requirements and obligations for professionals operating across borders.

- **Late Payments Directive** (Directive 2011/7/EU on combating late payment in commercial transactions)
  http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32011L0007

The Late Payment Directive aims at combating late payments in commercial transactions in order to contribute to the proper functioning of the internal market and to foster the competitiveness of undertakings, particularly small and medium-sized enterprises. This is done by setting time limits for the payment of invoices and by imposing penalties for late payments.

II.1.a. Simplification of administrative procedures

EU legislation (in particular the Services Directive) requires national authorities to simplify administrative procedures, including those related to the construction and renovation of buildings. This is intended to lower the administrative burden, with a reduction in applicable procedures (including due to elimination of time or territorial validity limitations) or procedural steps, complexity of application forms, documents to be submitted, administrative fees charged and/or other out-of-pocket costs and/or workload (staff time) time required to handle administrative procedures, including availability of information online, submission of simple-form documents, e-procedure availability and tacit approval.

7. Have you provided a permit for construction works and/or the provision of services related to construction works in the period 2004-2014?*

The following permits are envisaged under this section: building permit for new construction; building permit for renovation work; operational permit (e.g. permit for scaffolding) required during construction works; and use permit (e.g. a permit necessary upon completion of construction works)

a. I granted one or more permits for construction works and/or the provision of services related to the construction works
b. I acted as a representative or intermediary in the permit process for construction works
c. No

8. Do you want to respond to questions on permits for construction works and/or the provision of services related to construction works?*

a. Yes
b. No (*you will be redirected to question 14*)

9. ONLY IF Q8. = a: ***Have you noted or perceived any changes in dealing with any of the following administrative procedures?****

	More complexity	No change	Simplification	No opinion
Granting a building permit for new construction				
Granting a building permit for renovation work				
Granting an operational permit (e.g. permit for scaffolding) required during construction works				
Granting a use permit (e.g. a permit necessary upon completion of construction works)				

10. ONLY IF Q9. = Granting a building permit for new construction - More complexity OR Simplification: ***Do the above perceived changes relate to the duration of the process, the requirements to submit the permit request (e.g. online submission) and/or the cost related to a building permit for new construction?****

	Duration	Requirements	Cost	No opinion
Granting a building permit for new construction				

11. ONLY IF Q9. = Granting a building permit for renovation work - More complexity OR Simplification: ***Do the above perceived changes relate to the duration of the process, the requirements to submit the permit request (e.g. online submission) and/or the cost related to a building permit for renovation work?****

	Duration	Requirements	Cost	No opinion
Granting a building permit for renovation work				

12. ONLY IF Q9. = Granting an operational permit (e.g. permit for scaffolding) required during construction works - More complexity OR Simplification: ***Do the above perceived changes relate to the duration of the process, the requirements to submit the permit request (e.g. online submission) and/or the cost related to an operational permit?****

	Duration	Requirements	Cost	No opinion
Granting an operational permit (e.g. permit for scaffolding) required during construction works				

13. ONLY IF Q9. = Granting a use permit (e.g. a permit necessary upon completion of construction works) - More complexity OR Simplification: ***Do the above perceived changes relate to the duration of the process, the requirements to submit the permit request (e.g. online submission) and/or the cost related to a use permit?****

	Duration	Requirements	Cost	No opinion
Granting a use permit (e.g. a permit necessary upon completion of construction works)				

II.1.b. Cross-border operations

This module investigates the influence of EU legislation (in particular the Professional Qualifications Directive) on cross border operations, both outbound (i.e. the influence on the investee's operations abroad, if any) and inbound (i.e. the influence of a stronger presence of construction firms from other EU countries).

14. Do you want to respond to questions on the recognition of professional qualifications?*

c. Yes
d. No (*you will be redirected to question 21*)

15. ONLY IF Q14. = a: ***Have you noted or perceived any changes of these procedures in the past years?****

	More complexity	No change	Simplification	No opinion
Obtaining the recognition of qualifications of professionals qualified in other EU Member States				
Obtaining the authorisation to perform an activity in the construction sector in another EU Member States on a temporary basis (freedom to provide services)				
Obtaining the authorisation to perform an activity in the construction sector in another EU Member States on a permanent basis (freedom of establishment)				

16. ONLY IF Q15. = Obtaining the recognition of qualifications of professionals qualified in other EU Member States - More complexity OR Simplification: ***Do the above perceived changes relate to the duration of the process, the requirements related to the authorisation or recognition (e.g. online submission, possibility to work with more qualified partners) and/or the cost related to the authorisation or recognition?****

	Duration	Requirements	Cost	No opinion
Obtaining the recognition of qualifications of professionals qualified in other EU Member States				

17. ONLY IF Q14. = Obtaining the authorisation to perform an activity in the construction sector in another EU Member States on a temporary basis (freedom to provide services) - More complexity OR Simplification: ***Do the above perceived changes relate to the duration of the process, the requirements related to the authorisation or recognition (e.g. online submission, possibility to work with more qualified partners) and/or the cost related to the authorisation or recognition?****

	Duration	Requirements	Cost	No opinion
Obtaining the authorisation to perform an activity in the construction sector in another EU Member States on a temporary basis (freedom to provide services)				

18. ONLY IF Q14. = Obtaining the authorisation to perform an activity in the construction sector in another EU Member States on a permanent basis (freedom of establishment) - More complexity OR Simplification: ***Do the above perceived changes relate to the duration of the process, the requirements related to the authorisation or recognition (e.g. online submission, possibility to work with more qualified partners) and/or the cost related to the authorisation or recognition?****

	Duration	Requirements	Cost	No opinion
Obtaining the authorisation to perform an activity in the construction sector in another EU Member States on a permanent basis (freedom of establishment)				

19. ONLY IF Q14. = a: ***Over the period 2009-2014, have you perceived a stronger presence of construction firms from other EU countries in your home market?****

c. Yes
d. No

20. ONLY IF Q14. = a: ***In your experience, among the changes identified in the questions above, have any…:****

	Yes	No	No opinion
Stimulated favourable investment conditions within your sector			
Facilitated the free circulation of construction products			
Facilitated establishment in a Member State			
Facilitated the mobility of construction workers			
Facilitated the provision of cross-border construction services			
Fostered the global competitive position of EU construction enterprises			
Reduced administrative costs for the construction sector industry			

Please explain (If you refer to a specific Member State, please state this clearly):
[TEXT BOX - MAX 500 CHARACTERS PER BOX]

Stimulated favourable investment conditions within the sector
Facilitated the free circulation of construction products
Facilitated establishment in a Member State
Facilitated the mobility of construction workers
Facilitated the provision of cross-border construction services
Fostered the global competitive position of EU construction enterprises
Reduced administrative costs for the sector construction industry

II.1.c. Late payments

EU legislation (in particular the Late Payments Directive, approved in 2011) requires national authorities to adopt measures to reduce the problem of late payments. In particular, government authorities are required to pay within maximum 30 days, payments among private parties should be settled within 60 days. These measures are intended to improve the firms' cash flow position. In addition, EU legislation gives creditors an automatic entitlement to the payment of late payment interests, which potentially allows for the reduction of litigation costs.

21. Do you want to respond to questions on late payments?*

e. Yes
f. No (*you will be redirected to question 27*)

22. ONLY IF Q21. = a: ***In the years following the implementation of the Late Payments Directive, have payment times from <u>public</u> clients – according to your own experience:****

Decreased	Remained the same	Increased	No opinion

23. ONLY IF Q21. = a: ***In the years following the implementation of the Late Payments Directive, have your own payment times to <u>public</u> clients – according to your own experience:****

Decreased	Remained the same	Increased	No opinion

24. ONLY IF Q21. = a: ***In the years following the implementation of the Late Payments Directive, have payment times from <u>private</u> clients – according to your own experience:****

Decreased	Remained the same	Increased	No opinion

25. ONLY IF Q21. = a: ***In the years following the implementation of the Late Payments Directive, have your own payment times to <u>private</u> clients – according to your own experience:****

Decreased	Remained the same	Increased	No opinion

II.2. Questions on EU legislation related to energy efficiency in general and the use of renewable energy in the construction sector

This second section asks questions on the implications on the construction sector of the following Directives: Energy Efficiency Directive, Energy Performance of Buildings Directive, Renewable Energy Sources Directive.

- **Energy Efficiency Directive** (Directive 2012/27/EU on energy efficiency)
  http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex:32012L0027

The Energy Efficiency Directive introduces a series of measures intended to facilitate the achievement of the EU's 2020 energy savings target. These include provisions concerning: (i) the renovation of the stock of buildings, including an annual target for the renovation of central government buildings; (ii) the reduction in the volume of energy sales by energy distributors; (iii) the strengthening of energy audits (mandatory for large enterprises); and (iv) the promotion of other energy efficiency mechanisms (certification schemes, performance related contractual arrangements). While these obligations fall on public authorities or other entities outside the construction sector, their fulfilment may contribute to an increase in the demand for both building renovation and specialised energy efficiency services.

- **Energy Performance of Buildings Directive** (Directive 2010/31/EU of the European Parliament and of the Council on the energy performance of buildings)
  http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32010L0031

The Energy Performance of Buildings Directive supports the achievement of the energy efficiency targets by requiring Member States to introduce specific measures for buildings (both existing and new ones) and affecting construction, renovation, and ancillary services. In particular, the EPBD provides for: (i) a common methodological framework for measuring the energy performance of buildings; (ii) the obligation for Member States to set minimum requirements for the energy performance of new buildings, buildings undergoing major renovation, and technical building elements and systems; (iii) mandatory energy performance certification and inspections.

- **Renewable Energy Sources Directive** (Directive 2009/28/EC of the European Parliament and of the Council of 23 April 2009 on the promotion of the use of energy from renewable sources)
  http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:02009L0028-20151005

The Renewable Energy Sources Directive's objective is to establish a common framework for the promotion of energy from renewable sources, including setting mandatory national targets for the overall share of energy from renewable sources. In particular, the Directive includes a provision on the development and mutual recognition by Member States of certification or equivalent qualification schemes for installers of small-scale renewable energy systems.

II.2.a. Inspection/Installation and accredited experts

EU legislation (in particular the Energy Performance in Buildings Directive) requires inspections of heating and air-conditioning systems to be carried out by qualified and/or accredited experts. Similarly, the Renewable Energy Sources Directive requires the installation of renewable energy systems to be carried out by qualified and/or accredited experts.

26. Do you wish to respond to questions on inspection/installation and accreditation?*

c.	Yes
d.	No (*you will be redirected to question 31*)

27. ONLY IF Q26. = a: ***Was the inspection/installation carried out by visibly qualified and/or accredited experts (or in any case such a qualification was brought up in the context of the inspection/installation)? ****

	Yes	No	No opinion
Inspection of heating systems			
Inspection of air-conditioning systems			
Installation of renewable energy systems			

28. ONLY IF Q26. = a: ***In your Member State, is the list of installers and/or inspectors who are qualified or certified publicly available to your knowledge? In your experience, does the general public make use of this list?****

The list of installers and the list of inspectors are only available if your Member State did not opt for an alternative system.

	Publicly available	Not publicly available	Actively used by general public	Not actively used by general public	No opinion
List of qualified and/or accredited experts for the inspection of heating and air-conditioning systems(relevant under the Energy Performance in Buildings Directive)					
List of qualified and/or certified installers of renewable energy systems (relevant under the Renewable Energy Sources Directive)					

29. ONLY IF Q26. = a : ***Have you noted or perceived any changes related to the frequency of inspection of heating and air-conditioning systems and of installation of renewable energy systems?****

	More frequent	No change	Less frequent	No opinion
Inspection of heating systems				
Inspection of air-conditioning systems				
Receiving advice concerning the efficiency of the boiler				
Receiving advice concerning the efficiency of the air-conditioning system				
Installation of renewable energy systems				

30. ONLY IF Q29. = More frequent OR Less frequent: ***In your experience, among the changes you have identified in the questions above, have any…:****

	No	Yes	No opinion
Improved the energy performance of construction products			
Improved the energy efficiency of buildings			
Reduced the environmental footprint of buildings			
Stimulated the construction of new buildings			
Stimulated the renovation of buildings			
Stimulated the installation of renewable energy systems			

Please explain:

[TEXT BOX - MAX 500 CHARACTERS PER BOX]

Improved the energy performance of construction products
Improved the energy efficiency of buildings
Reduced the environmental footprint of buildings
Stimulated the construction of new buildings
Stimulated the renovation of buildings
Stimulated the installation of renewable energy systems
Improved the energy performance of construction products

II.2.b. Public procurement

One of the objectives of the Energy Efficiency Directive is to improve and strengthen energy efficiency through public procurement. Article 6 of the Directive states that Member States shall ensure that central governments purchase only products, services and buildings with a high energy-efficiency performance. The central governments of the Member States should "lead by example" so that local and regional procurement bodies also strengthen energy efficiency in their public procurement procedures.

31. Did you notice an increased use of energy efficiency criteria in the public tenders of the national, local and regional governments?*

	Yes	No	No opinion
National government			
Local government			
Regional government			

II.3. Questions on EU legislation related to products used in construction

This third section asks questions on the implications on the construction sector of the following Directives and Regulation: the Construction Products Regulation, the Ecodesign Directive and the Energy Labelling Directive.

- **Construction Products Regulation** (Regulation No 305/2011 laying down harmonised conditions for the marketing of construction products)
  http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:02011R0305-20140616

The Construction Products Regulation sets out the conditions for the placing or making available on the market of construction products, by establishing harmonised rules on how to express the performance of construction products in relation to their essential characteristics and on the affixing of the CE marking. In addition, the Regulation requires manufacturers to draw up a declaration of performance for construction products that are either covered by harmonised standards or conform to an issued European Technical Assessment.

- **Ecodesign Directive** (Directive 2009/125/EC establishing a framework for the setting of eco-design requirements for energy-using products)
  http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:02009L0125-20121204

The Ecodesign Directive establishes a framework for the setting of mandatory requirements for both energy-using and energy-related products (i.e. products that do not use energy but have an impact on energy consumption). In particular, the Directive includes various articles relating to ensuring compliance of a product with the Directive's requirements prior to placing on the market. Other provisions related to CE market, consumer information and the prohibition of markings likely to mislead users. Finally, a large part of the Directive deals with the creation of ecodesign implementing measures for products, which must respond to different sets of criteria.

The Ecodesign Directive is a framework directive, and the ecodesign requirements are set through Commission regulations. Several construction products and materials are classified as energy-using or energy-related products. However, no secondary regulations specifically targeting construction materials have been adopted so far, although work in this direction has been initiated (e.g. for windows and insulation materials).

- **Energy Labelling Directive** (Directive 2010/30/EU on the indication by labelling and standard product information of the consumption of energy and other resources by energy-related products)
  http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:02010L0030-20140605

The Energy Labelling Directive complements the Ecodesign Directive by setting a framework for the labelling and the provision of information regarding energy consumption. In particular, the Energy Labelling Directive settles the responsibility of suppliers to provide the product's label and fiche, which must be accurate. Initially targeted at household appliances, the Directive is now applicable to a wide range of energy-related products. As in the case of the Ecodesign Directive, no secondary legislation has so far been adopted that relates to construction products.

II.3.a. CE marking and Declaration of Performance

CE marking under the Construction Products Regulation enables a product to be placed legally on the market in any Member State. CE marking indicates that a product is consistent with its Declaration of Performance (DoP) as made by the manufacturer. The declaration varies according to the particular harmonised technical specification covering the product.

32. Do you wish to respond to questions on CE marking and Declaration of Performance (DoP)?*

a.	Yes
b.	No (*you will be redirected to question 36*)

33. ONLY IF Q32. = a: ***To what extent is the information provided through the DoP and the CE marking important in accessing other Member States' markets?****

a.	Not at all
b.	To a limited extent

c. To some extent
d. To a high extent
e. No opinion

34. ONLY IF Q32. = a: ***Have the DoP and CE marking procedures for construction products been changed according to policies in the following areas?****

	No	Yes	No opinion
Energy efficiency in buildings			
Environmental protection			
Public health and safety			
Health & safety at work			

ONLY IF Q34. = yes: ***If yes, please explain (e.g. what are the effects in terms of costs, duration of the procedures, particular requirements of Member States)***

[TEXT BOX - MAX 500 CHARACTERS]

35. ONLY IF Q32. = a: ***To what extent does the Ecodesign framework affect the credibility of the CE marking of construction products?****

a. Not at all
b. To a limited extent
c. To some extent
d. To a high extent
e. No opinion

II.4. Coherence questions

This final section is linked to all of the above as it wants to identify sources of impact - positive or negative - between either the various pieces of EU legislation themselves or between EU legislation and its implementation at national level.

36. Are you familiar with two or more of the pieces of the EU legal framework for the Construction Sector discussed above?

These EU instruments are: Construction Product Regulation, Professional Qualifications Directive, Services Directive, Late Payments Directive, Energy Efficiency Directive, Energy Performance of Buildings Directive, Ecodesign Directive, Energy Labelling Directive, Renewable Energy Sources Directive.

e. Yes
f. No (*you will be redirected to question 39*)

37. ONLY IF Q36. = a: ***How familiar are you with the each of the following pieces of the EU legal framework for the Construction Sector, and how they apply in your country?****

	Very familiar	Somewhat familiar	Not familiar
Construction Product Regulation			
Professional Qualification Directive			
Services Directive			
Late Payments Directive			
Energy Efficiency Directive			
Energy Performance of Buildings Directive			
Ecodesign Directive			
Energy Labelling Directive			
Renewable Energy Sources Directive			

38. ONLY IF Q37. = very familiar AND/OR somewhat familiar: ***If you are somewhat familiar to very familiar with any of the above pieces of EU and/or national (transposition) legislation, have you…?****

	Yes	No	No opinion
Benefitted from the harmonisation of reporting requirements			
Experienced easier access to European Markets			
Identified requirements where simplification has improved implementation			
Found requirements that are consistent with each other and complementary, offering a mutually supportive implementation			
Spotted inconsistencies or overlaps among various requirements			
Found concepts, notions, and definitions that are unclear and for which interpretation is difficult			
Identified obsolete requirements, i.e. requirements that are not aligned with current market reality and technical developments			
Identified requirements that need to be simplified			
Identified requirements where simplification has not brought an improvement to implementation			
Other aspects – please specify below			

If you replied yes on any of the above, please explain your answer. Please clearly indicate whether your answer relates to EU legislation (and which EU legislation) and/or to national (transposition) legislation.

[TEXT BOX - MAX 500 CHARACTERS PER BOX]

Benefitted from the harmonisation of reporting requirements
Experienced easier access to European Markets
Identified requirements where simplification has improved implementation
Found requirements that are consistent with each other and complementary, offering a mutually supportive implementation

Spotted inconsistencies or overlaps among various requirements
Found concepts, notions, and definitions that are unclear and for which interpretation is difficult
Identified obsolete requirements, i.e. requirements that are not aligned with current market reality and technical developments
Identified requirements that need to be simplified
Identified requirements where simplification has not brought an improvement to implementation
Other aspects – please specify

III. Questionnaire on environment and health & safety

III.1. Questions on EU legislation related to occupational health and safety in the construction sector

39. Do you wish to respond to questions on the health and safety of construction workers?*

e. Yes f. No

III.1.a. Occupational Safety and Health Framework Directive

The Occupational Safety and Health Framework Directive (89/391/EEC) sets out general requirements **for the protection of the health and safety of workers** in the EU. Under the Directive, employers have a "duty to ensure the safety and health of workers in every aspect related to the work" (Article 5(1)) and must "take the measures necessary for the safety and health protection of workers" (Article 6(1)).
Further information is available via the following link: https://osha.europa.eu/en/legislation/directives/the-osh-framework-directive/1

40. ONLY IF Q39. = a: ***Please indicate the extent of any costs incurred by the construction sector as a result of the following health and safety measures?****

	Significant costs	Moderate costs	No costs	No opinion
Provision of information and training for workers on health and safety				
Carrying out an evaluation of the risks to the health and safety of workers				
Purchasing Personal Protective Equipment				
Implementing protective organisational measures				
Reporting on occupational accidents				
Employing dedicated health and safety personnel (either in-house or externally)				
Monitoring workers' health				
Other (please specify)				

Please explain your reply.

41. ONLY IF Q39. = a: ***Please indicate the extent of any benefits that have arisen as a result of the following health and safety measures?****

	Significant benefits	Moderate benefits	No benefits	No opinion
Provision of information and training for workers on health and safety				
Carrying out an evaluation of the risks to the health and safety of workers				
Purchasing Personal Protective Equipment				
Implementing protective organisational measures				
Reporting on occupational accidents				
Employing dedicated health and safety personnel (either in-house or externally)				

Monitoring workers' health				
Other (please specify)				

Please explain your reply.

42. ONLY IF Q39. = a: ***To what extent has the Occupational Safety and Health Framework Directive (89/391/EEC) contributed to the following benefits?****

	Large positive impact (++)	Slight positive impact (+)	No impact	Slight negative impact (-)	Large negative impact (--)	No opinion
Reduced risks to workers' health and safety						
Fewer work days lost to work related injuries and ill-health						
Increased productivity in the construction sector						
Increased employee retention in the construction sector						
Reduced insurance premiums for companies in the construction sector						
Reduced legal costs for companies in the construction sector						

Please explain your reply.

III.1.b. Manual handling of loads

Directive 90/269/EEC lays down minimum health and safety requirements for the manual handling of loads where there is a particular risk of back injury to workers. Under the Directive, employers are required to take appropriate organisational measures, or use the appropriate means (in particular mechanical equipment), in order to avoid the need

for the manual handling of loads by workers. Where the need for the manual handling of loads by workers cannot be avoided, employers must take the appropriate organisational measures, use the appropriate means or provide workers with such means in order to reduce the risk involved in the manual handling of such loads.
Further information is available via the following link: https://osha.europa.eu/en/legislation/directives/6

43. ONLY IF Q39. = a: ***Please indicate the extent of any costs incurred by the construction sector as a result of the following measures designed to reduce the risks associated with the manual handling of loads by workers.****

	Significant costs	Moderate costs	No costs	No opinion
Purchasing mechanical equipment to avoid the need for manual handling of loads by workers				
Implementing organisational measures to reduce the risk involved in the manual handling of loads				
Providing information on the weight and centre of gravity of heavy loads				
Providing training on the correct way to handle loads				
Other (please specify)				

Please explain your reply.

44. ONLY IF Q39. = a: ***Please indicate the extent of any benefits that have arisen as a result of the following measures designed to reduce the risks associated with the manual handling of loads by workers.****

	Significant benefits	Moderate benefits	No benefits	No opinion
Purchasing mechanical equipment to avoid the need for manual handling of loads by workers				
Implementing organisational measures to reduce the risk involved in the manual handling of loads				
Providing information on the weight and centre of gravity of heavy loads				
Providing training on the correct way to handle loads				
Other (please specify)				

Please explain your reply.

45. ONLY IF Q39. = a: ***To what extent has Directive 90/269/EEC on the manual handling of loads contributed to the following benefits?****

	Large positive impact (++)	Slight positive impact (+)	No impact	Slight negative impact (-)	Large negative impact (--)	No opinion
Reduced risks to workers' health and safety						

Fewer work days lost to work related injuries and ill-health						
Increased productivity in the construction sector						
Increased employee retention in the construction sector						
Reduced insurance premiums for companies in the construction sector						
Reduced legal costs for companies in the construction sector						

Please explain your reply.

III.1.c. Temporary or mobile construction sites

Directive 92/57/EEC lays down the minimum safety and health requirements for temporary or mobile construction sites (defined in Article 2(a) of the Directive as "any construction site at which building or civil engineering works are carried out").
Further information is available via the following link: https://osha.europa.eu/en/legislation/directives/15

46. ONLY IF Q39. = a: ***Please indicate the extent of any costs incurred by the construction sector as a result of the following health and safety measures on temporary or mobile construction sites.****

	Significant costs	Moderate costs	No costs	No opinion
Appointing one or more coordinators for health and safety matters				
Drawing up a safety and health plan				
Complying with the minimum safety and health requirements for construction sites set out in Annex IV to the Directive				
Other (please specify)				

Please explain your reply.

47. ONLY IF Q39. = a: ***Please indicate the extent of any benefits that have arisen as a result of the following health and safety measures on temporary or mobile construction sites.****

	Significant benefits	Moderate benefits	No benefits	No opinion
Appointing one or more coordinators for health and safety matters				
Drawing up a safety and health plan				
Complying with the minimum safety and health requirements for construction sites set out in Annex IV to the Directive				
Other (please specify)				

Please explain your reply.

48. ONLY IF Q39. = a: ***To what extent has Directive 92/57/EEC on the minimum safety and health requirements for temporary or mobile construction sites contributed to the following benefits?****

	Large positive impact (++)	Slight positive impact (+)	No impact	Slight negative impact (-)	Large negative impact (--)	No opinion
Reduced risks to workers' health and safety						
Fewer work days lost to work related injuries and ill-health						
Increased productivity in the construction sector						
Increased employee retention in the construction sector						
Reduced insurance premiums for companies in the construction sector						

Reduced legal costs for companies in the construction sector						

Please explain your reply.

III.1.d. Asbestos Directive

The Asbestos Directive (2009/148/EC) aims to protect workers against risks to their health, including the prevention of such risks, arising or likely to arise from exposure to asbestos.
Further information is available via the following link: https://osha.europa.eu/en/legislation/directives/2009-148-ec-exposure-to-asbestos-at-work

49. ONLY IF Q39. = a: ***Please indicate the extent of any costs that have been incurred by the construction sector as a result of the following measures designed to reduce the risks to workers associated with asbestos.****

	Significant costs	Moderate costs	No costs	No opinion
Undertaking a risk assessment in cases where an activity is likely to involve a risk of exposure to asbestos				
Undertaking clinical surveillance of workers				
Compiling and submitting information to the national register, indicating the nature and duration of the activity and the exposure to which workers have been subjected				
Purchasing and displaying warning signs				
Training of workers who are, or are likely to be, exposed to dust from asbestos				
Submitting a notification to the responsible authority				
Measuring asbestos fibres in the air at the workplace				
Purchasing respiratory and/or other personal protective equipment				
Purchasing other equipment to minimize exposure to dust arising from asbestos				
Implementing organizational measures				
Storing, transporting and cleaning materials and equipment contaminated with asbestos dust				
Drawing up a plan of work				
Other (please specify)				

Please explain.

50. ONLY IF Q39. = a: ***Please indicate the extent of any benefits that have arisen as a result of the following measures designed to reduce the risks to workers associated with asbestos.****

	Significant benefits	Moderate benefits	No benefits	No opinion
Undertaking a risk assessment in cases where an activity is likely to involve a risk of exposure to asbestos				
Undertaking clinical surveillance of workers				
Compiling and submitting information to the national register, indicating the nature and duration of the activity and the exposure to which workers have been subjected				
Purchasing and displaying warning signs				
Training of workers who are, or are likely to be, exposed to dust from asbestos				
Submitting a notification to the responsible authority				
Measuring asbestos fibres in the air at the workplace				
Purchasing respiratory and/or other personal protective equipment				
Purchasing other equipment to minimize exposure to dust arising from asbestos				
Implementing organizational measures				
Storing, transporting and cleaning materials and equipment contaminated with asbestos dust				
Drawing up a plan of work				
Other (please specify)				

Please explain.

51. ONLY IF Q39. = a: ***To what extent has the Asbestos Directive (2009/148/EC) contributed to the following benefits?****

	Large positive impact (++)	Slight positive impact (+)	No impact	Slight negative impact (-)	Large negative impact (--)	No opinion
Reduced risks to workers' health and safety						
Fewer work days lost to work related injuries and ill-health						
Increased productivity in the construction sector						

Increased employee retention in the construction sector						
Reduced insurance premiums for companies in the construction sector						
Reduced legal costs for companies in the construction sector						

Please explain your reply.

III.2. Questions on EU legislation related to the environment and the construction sector

52. Do you wish to respond to questions on the environment and the construction sector?*

a. Yes b. No

III.2.a. Waste Framework Directive

The Waste Framework Directive introduced the "polluter-pays principle" by requiring that the cost of waste management be borne by the original waste producer or by the current or previous waste holders. It allows European Member States to take measures to ensure that any company that professionally develops, manufactures, processes, treats, sells or imports products has "extended producer responsibility". Such measures may include an acceptance of returned products and of the waste that remains after those products have been used, as well as the subsequent management of the waste and financial responsibility for such activities.
Further information is available via the following link: http://ec.europa.eu/environment/waste/framework

53. ONLY IF Q52. = a: ***Please indicate how the cost of waste management has changed now that businesses are required to separate their waste for recovery?****

Costs have increased significantly	Costs have increased slightly	Costs have not changed	Costs have reduced slightly	Costs have reduced significantly	No opinion

54. ONLY IF Q52. = a: ***To what extent has EU legislation on waste contributed to the following benefits?****

Potential benefits	Large positive impact (++)	Slight positive impact (+)	No impact	Slight negative impact (-)	Large negative impact (--)	No opinion
Reduced environmental impacts						
Improved corporate image for companies operating in the construction sector						
Improved resource efficiency						
Reduced risks to human health						
Reduced insurance premiums for companies in the construction sector						
Reduced legal costs for companies in the construction sector						

Please explain your reply.

III.2.b. Environmental Impact Assessment Directive

The Environmental Impact Assessment Directive (1985/337/EEC) states that consent for public and private projects which are likely to have "significant effects" on the environment should be granted only after an assessment of the likely significant environmental effects of those projects has been carried out.
Further information is available via the following link: http://ec.europa.eu/environment/eia/eia-legalcontext.htm

55. ONLY IF Q52. = a: ***What impacts have arisen for the construction sector as a result of having to carry out an Environmental Impact Assessment?****

Costs have increased significantly	Costs have increased slightly	Costs have not changed	Costs have reduced slightly	Costs have reduced significantly	No opinion

56. ONLY IF Q52. = a: ***What is your opinion regarding the criteria and thresholds determining when an Environmental Impact Assessment is required to be carried out?****

	Agree	Disagree	No opinion
Criteria/thresholds for projects to require an Environmental Impact Assessment are set too low			
Criteria/thresholds for projects to require an Environmental Impact Assessment are set too high			
Criteria/thresholds for projects to require an Environmental Impact Assessment are set about right			
Most/all of the right types of projects require an Environmental Impact Assessment			
Some types of projects that should have an Environmental Impact Assessment do not require them under the legislation			
Environmental Impact Assessment legislation captures the majority/all of the right types of project			

57. ONLY IF Q52. = a: ***To what extent has the requirement to carry out an Environmental Impact Assessment for certain projects helped to reduce the environmental impacts of construction projects?****

Large positive impact (++)	Slight positive impact (+)	No impact	Slight negative impact (-)	Large negative impact (--)	No opinion

58. ONLY IF Q52. = a: ***Are you aware of any other benefits arising from the requirement to carry out an Environmental Impact Assessment for certain construction projects?* If yes, please explain your answer.***

Please explain your reply.

III.3. Final questions on environment and health & safety

III.3.a. Final questions on health and safety

59. ONLY IF Q39. = a: ***Please indicate the extent to which you agree or disagree with the following statements****

	Strongly agree	Somewhat agree	Somewhat disagree	Strongly disagree	No opinion

Workers in the construction sector are **adequately protected** against the risks posed to their health by **exposure to asbestos**					
Workers in the construction sector are **adequately protected** against the risks posed to their health by the **manual handling of loads**					
Workers in the construction sector are **adequately protected** against the risks posed to their health **on temporary and mobile construction sites**					

60. ONLY IF Q39. = a: ***Have you or your organisation … (please select)****

	Yes	No	No opinion
Benefitted from the harmonisation of reporting requirements for health and safety			
Benefitted from a harmonisation of other health and safety requirements (excluding reporting requirements)			
Found health and safety requirements that are consistent with each other and complementary, offering a mutually supportive implementation			
Spotted inconsistencies or overlaps among various health and safety requirements			
Identified areas within wider EU (or national) policy that are in conflict with EU (or national) health and safety legislation			
Identified health and safety requirements that help to support EU (or national) policy in other policy areas			
Found concepts, notions, and definitions that are unclear and for which interpretation is difficult			
Identified obsolete health and safety requirements, i.e. requirements that are not aligned with current market reality and technical developments			
Identified health and safety requirements that need to be simplified			
Other aspects – please specify below			

If you replied yes to any of the above, please explain your answer. Please clearly indicate which EU (or national) legislation you are discussing.

[TEXT BOX - MAX 500 CHARACTERS PER BOX]

Benefitted from the harmonisation of reporting requirements for health and safety
Benefitted from a harmonisation of other health and safety requirements (excluding reporting requirements)
Found health and safety requirements that are consistent with each other and complementary, offering a mutually supportive implementation
Spotted inconsistencies or overlaps among various health and safety requirements
Identified areas within wider EU (or national) policy that are in conflict with EU (or national) health and safety legislation
Identified health and safety requirements that help to support EU (or national) policy in other policy areas
Found concepts, notions, and definitions that are unclear and for which interpretation is difficult
Identified obsolete health and safety requirements, i.e. requirements that are not aligned with current market reality and technical developments

Identified health and safety requirements that need to be simplified
Other aspects – please specify below

III.3.b. Final questions on environment

61. ONLY IF Q52. = a: ***To what extent do you agree with the following statement?****

	Strongly agree	Somewhat agree	Somewhat disagree	Strongly disagree	No opinion
The environment is adequately protected against harm caused by the construction industry					

62. ONLY IF Q52. = a: ***Have you or your organisation … (please select)****

	Yes	No	No opinion
Benefitted from the harmonisation of environmental reporting requirements			
Benefitted from a harmonisation of other requirements designed to protect the environment (excluding reporting requirements)			
Found requirements pertaining to the environment that are consistent with each other and complementary, offering a mutually supportive implementation			
Spotted inconsistencies or overlaps among various environment requirements			
Identified areas within wider EU (or national) policy that are in conflict with EU (or national) environment legislation			
Identified requirements that have been designed to protect the environment that also help to support EU (or national) policy in other policy areas			
Found concepts, notions, and definitions that are unclear and for which interpretation is difficult			
Identified requirements designed to protect the environment that are now obsolete, i.e. requirements that are not aligned with current market reality and technical developments			
Identified environmental requirements that need to be simplified			
Other aspects – please specify below			

If you replied yes on any of the above, please explain your answer. Please clearly indicate which EU (or national) legislation you are discussing.

[TEXT BOX - MAX 500 CHARACTERS PER BOX]

Benefitted from the harmonisation of environmental reporting requirements
Benefitted from a harmonisation of other requirements designed to protect the environment (excluding reporting requirements)
Found requirements pertaining to the environment that are consistent with each other and complementary, offering a mutually supportive implementation
Spotted inconsistencies or overlaps among various environment requirements
Identified areas within wider EU (or national) policy that are in conflict with EU (or national) environment legislation

Identified requirements that have been designed to protect the environment that also help to support EU (or national) policy in other policy areas
Found concepts, notions, and definitions that are unclear and for which interpretation is difficult
Identified requirements designed to protect the environment that are now obsolete, i.e. requirements that are not aligned with current market reality and technical developments
Identified environmental requirements that need to be simplified

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