

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*

1. CONTEXT AND AIM OF MUTUAL EVALUATION EXERCISE

In its Communication on the implementation of the Services Directive adopted in June 2012, the Commission emphasized that the framework for professional services needs to remain fit for purpose. The Professional Qualification Directive, amended in November 2013¹, addresses certain issues and lays the basis for a new strategy that requires each Member State to actively perform a review and to modernize their regulations on qualifications governing access to professions or professional titles.

A work plan was presented by the Commission in its Communication of 2 October 2013² on evaluating national regulations on access to professions. This included the idea that Member States should not work in isolation when screening their legislation, but should be able to discuss with other Member States and compare their systems.

In this context, the Commission would like to recall that in order to improve access to the professions and to facilitate the mobility of qualified professionals within the internal market as well as the cross-border provision of professional services, a more flexible and transparent regulatory environment in Member States should also have a positive impact on the employment situation, in particular for young people, and to enhance economic growth.

To note that the proceeding is based on information submitted by participating countries to the Commission. This report presents an overview of the information communicated to the Commission by Member States, Iceland, Liechtenstein, Norway and Switzerland³ either through specific reports⁴ or through entries in the professional regulations database⁵ as well as of the discussions which took place during the meeting on 30 September 2014 on mutual evaluation dedicated to this sector⁶. This report is established

¹ Directive 2005/36/EC of the European Parliament and of the Council of 7 September 2005 on the recognition of professional qualifications, OJ L 255, 30.9.2005, as amended by Directive 2013/55/EU of the European Parliament and of the Council of 20 November 2013 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 ('the IMI Regulation') OJ L 354, 28.12.2013

² 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.

³ Referred to collectively as Member States in this document.

⁴ Belgium, Cyprus, Greece, Hungary Ireland, Malta and Romania did not provide specific reports and Belgium, Greece, Hungary, Romania did not provide information in the database.

⁵ However, not all entries in the database were up-to-date when this report was established.

⁶ For the purpose of this meeting Member States were organised in 4 different groups of 8 Member States (+ Iceland, Liechtenstein, Norway and Switzerland). Groups were organised as follow:
Group 1: Denmark, Cyprus, Greece, Luxembourg, France, Romania, Slovenia, Iceland;
Group 2: the United Kingdom, Latvia, Italy, Lithuania, Hungary, Slovakia, Sweden, Switzerland;

with the aim to facilitate the mutual evaluation exercise and is therefore not a comprehensive report on the sector nor on the specific profession. Whilst the following focuses upon the profession of Civil Engineer, as representative of the business services sector, the experiences and understanding gained from this discussion is meant to be understood across the professional landscape. Observations made may have a general or more meaningful application to the functions and consequences of regulation in other professions and it is hoped, in this way, to lead towards an overall better application of regulatory measures in the professions.

Based on the conclusions of the review exercise, by 18 January 2016, Member States should submit a report to the Commission in accordance with Article 59(6) of Directive 2005/36/EC.

Any remarks made in this report should therefore be understood as holding potential wide-ranging relevance for all professions and Member States are invited to draw upon these insights when preparing their National Action Plans.

2. ECONOMIC AND STATISTICAL INFORMATION REGARDING THE CONSTRUCTION SECTOR

2.1. Introduction

In the International Standard Classification of Occupations (ISCO) from the International labour organisation (ILO) which is commonly used for statistics in the field of labour market, the profession of “civil engineer” is classified in the category 2142 “civil engineers” which is to be found in section 2 “professionals” subsection 21 ”Science and engineering professionals” subsection 214 “engineering professionals (excluding electrotechnology)”⁷.

2	Professionals
21	Science and engineering professionals
214	<u>Engineering professionals (excluding electrotechnology)</u>
2141	Industrial and production engineers
2142	Civil engineers
2143	Environmental engineers
2144	Mechanical engineers
2145	Chemical engineers
2146	Mining engineers, metallurgists and related professionals
2149	Engineering professionals not elsewhere classified
215	<u>Electrotechnology engineers</u>
2151	Electrical engineers
2152	Electronics engineers
2153	Telecommunications engineers

In the standard classification of economic activities NACE, civil engineering activities are grouped together under the Construction section, division 42. This division includes

Group 3: Bulgaria, Germany, Spain, Croatia, Poland, Finland, the Czech Republic, Norway;
Group 4: Belgium, Estonia, Ireland, Malta, the Netherlands, Austria, Portugal, Liechtenstein.

⁷ The ISCO classification also defines the category 3112 of "civil engineering technicians" as follows: "Civil engineering technicians perform technical tasks in civil engineering research, design, construction, operation, maintenance and repair of buildings and other structures, such as water supply and wastewater treatment systems, bridges, roads, dams and airports."

activities relating to the construction of roads and railways, the construction of utility projects such as pipelines or power plants and the construction of other civil engineering projects such as dams or chemical plants.

2.2. Economic and statistical data

According to the NACE definition described above, there were 98.700 enterprises in civil engineering in 2011 (down from 101.500 in 2010) employing a total of 1,6 million persons. This of course does not mean that all persons employed in this sector were civil engineers nor that all civil engineers were reported in this category. **Germany**, the **United Kingdom**, **France** and **Poland** shared together 46% of those employed in the EU in this sector. Relatively speaking, **Luxembourg**, **Cyprus** and **Croatia** had the highest number of persons working in the civil engineering sector per 100.000 inhabitants. The sector generated a turnover of EUR 265,2 billion in 2011, representing about 1,1% of the total business economy in Europe.

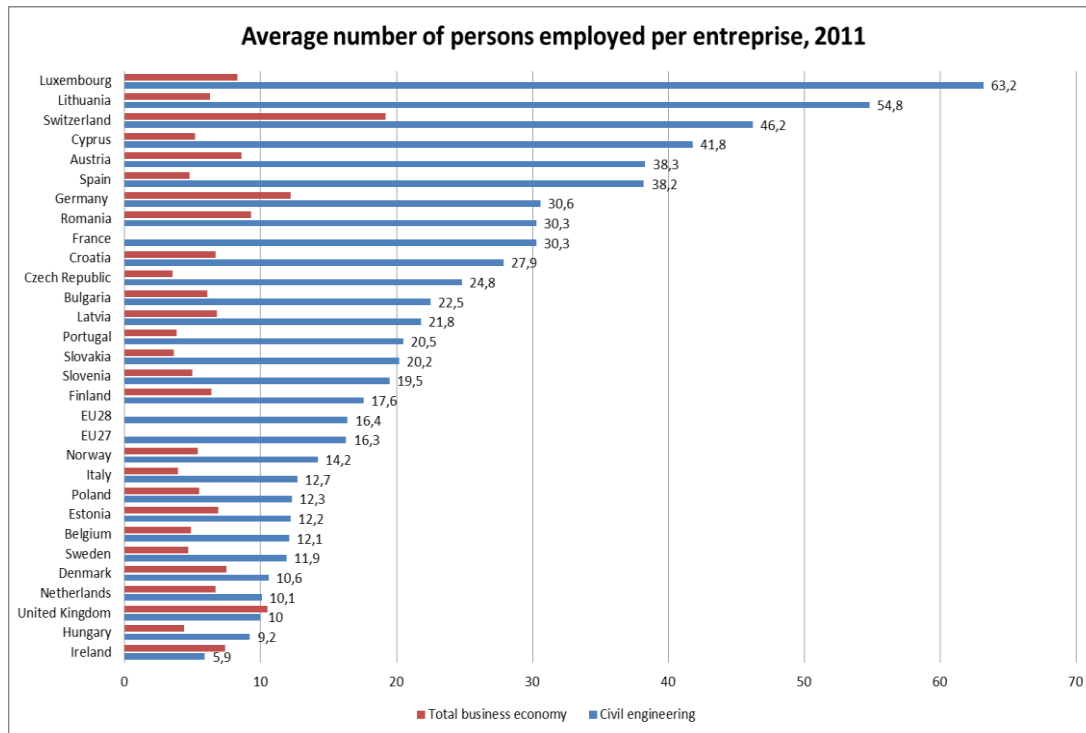
Country	Civil engineering workers	Civil engineering workers per 100 000 inhabitants
EU28	1.621.500	321
Ireland	4.933	108
Italy	101.622	171
Sweden	20.409	215
Germany	192.000	239
Spain	117.269	250
Norway	12.523	251
Belgium	30.079	271
France	181.216	278
Denmark	15.620	280
Switzerland	24.768	311
United Kingdom	201.696	318
Finland	19.194	355
Slovakia	19.960	369
Netherlands	61.964	370
Hungary	38.774	390
Austria	37.461	446
Poland	184.890	480
Romania	99.339	494
Slovenia	10.664	519
Lithuania	16.492	549
Bulgaria	42.431	579
Czech Republic	65.179	620
Latvia	12.914	632
Estonia	8.860	669
Portugal	70.772	671
Croatia	29.648	693
Cyprus	7.145	829
Luxembourg	4.548	867

Data not available for Greece and Malta⁸

Source: Eurostat, Structural Business Statistics, 2011

⁸ The professions of civil engineers and architects have traditionally been classified as one profession ("Perit") in Malta. Although there have been discussions to create two separate official registers, one for architects and another for civil engineers, currently there is only one official register that encompasses both. It is therefore not possible to assess the number of professionals in architecture as distinct from those in civil engineering.

Civil engineering companies had on average 16 employees in 2011, which is quite high when compared to the rest of the economy. Differences were however quite marked between countries ranging from 6 employees on average per enterprise in **Ireland** to 63 in **Luxembourg**.

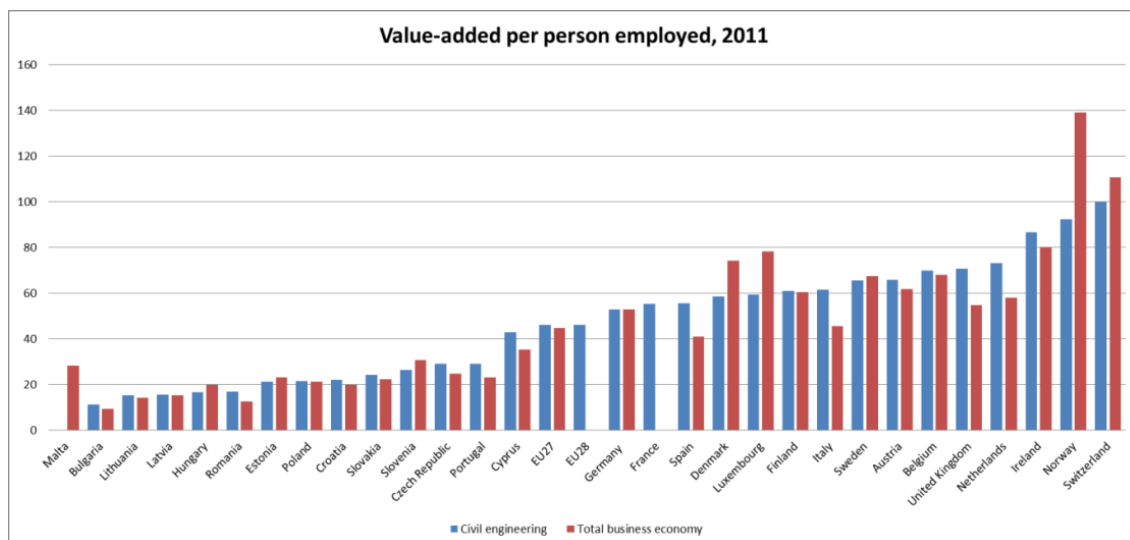


Greece, Malta: No data available; EU 27: total business economy = 2010

Total business economy except financial and insurance activities

Source: Eurostat, Structural Business Statistics

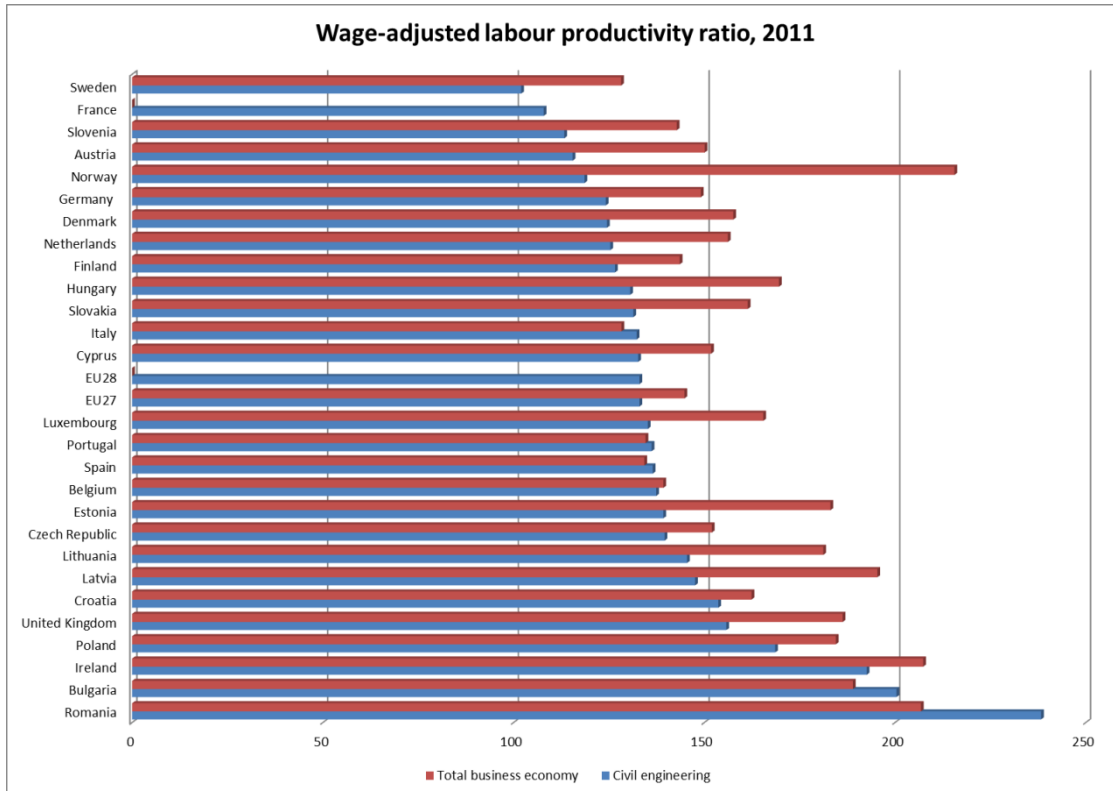
The average value-added per person employed is EUR 46.000, higher than in architectural services (EUR 37.000) but similar to that of the business economy (EUR 44.800). This indicator is used to measure apparent labour productivity. The wage-adjusted labour productivity ratio provides an indication of whether this level of apparent labour productivity is high enough to cover for the level of average personnel costs per employee. For civil engineering enterprises, this ratio was 133%, more than in the construction sector (118%) but below the total business economy average (145%).



Greece, Malta: No data available; EU 27: total business economy = 2010

Total business economy except financial and insurance activities

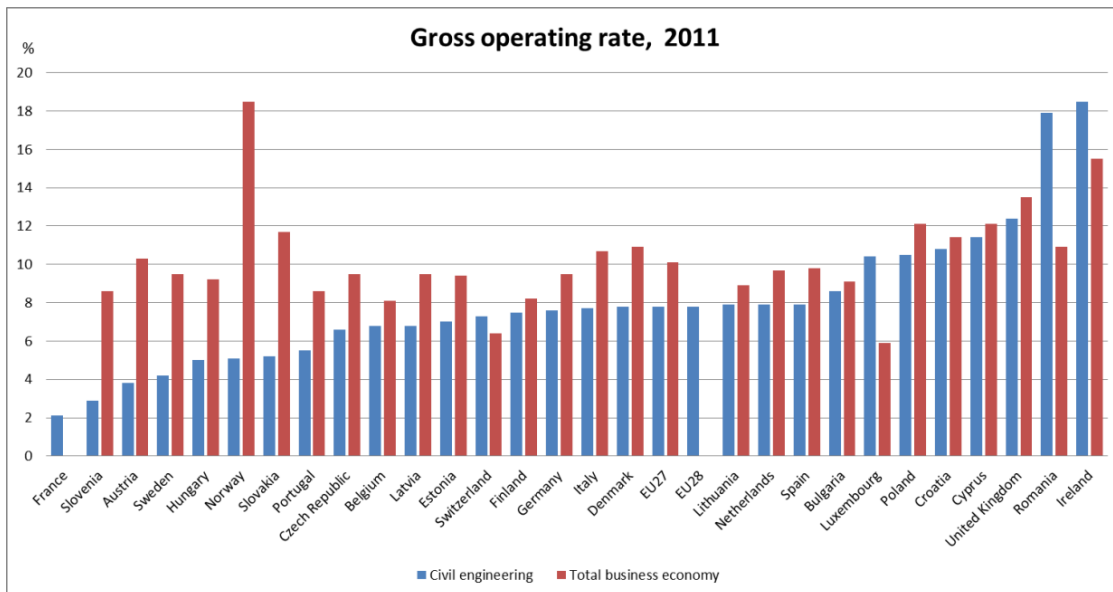
Source: Eurostat, Structural Business Statistics



Greece, Malta: No data available; EU 27: total business economy = 2010
 Total business economy except financial and insurance activities

Source: Eurostat, Structural Business Statistics

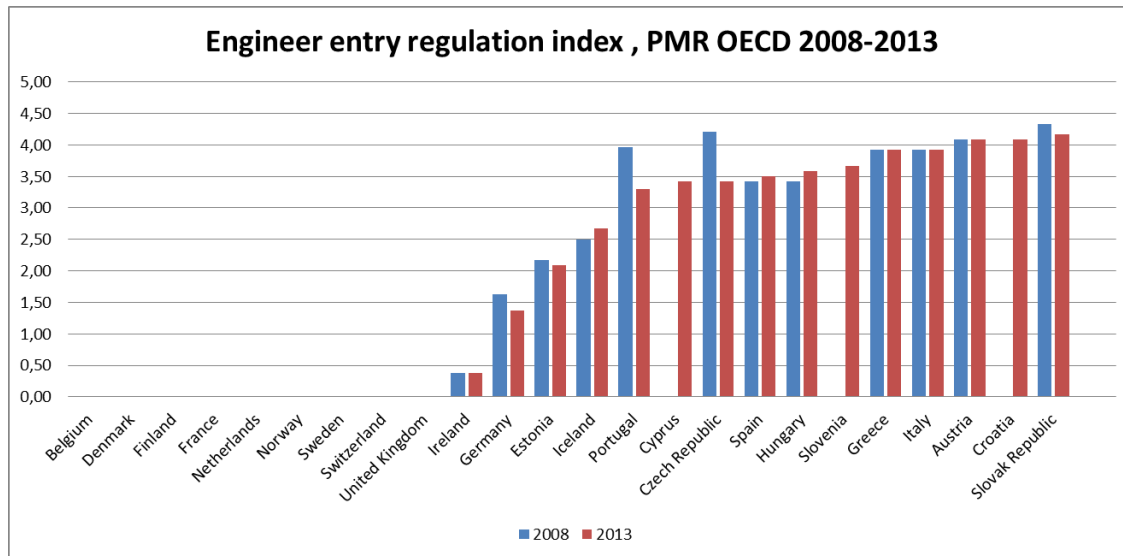
The gross operating rate (ratio of gross operating surplus and turnover) which provides an indication as to the profitability of a sector, shows that in 2011 the civil engineering sector was profitable with a rate of 7,8% although less than for the total business economy (10,1%) or the construction sector (11%) for example. The sector appeared to be most profitable in **Ireland, Romania, United Kingdom and Cyprus**. At the other end, the gross operating rate was limited to under 3 % in **France and Slovenia**.



Greece, Malta: No data available; EU 27: total business economy = 2010
 Total business economy except financial and insurance activities

Source: Eurostat, Structural Business Statistics

Every five years the OECD conducts a survey amongst its Members to construct an indicator measuring the intensity of regulatory restrictions in selected markets, including professional services. Within professional services, four professions are examined; accountants, legal professions, architects and engineers. The indicator is therefore not limited to civil engineers but covers all types of engineers. A lower value of the indicator reflects a more competition-friendly regulatory stance. The latest phase of this survey was conducted in 2013 and contains the results for Member States who are not members of the OECD. From the results, there is a clear distinction between those countries which do not regulate the engineering profession and those which do.



Bulgaria, Luxembourg, Latvia, Lithuania, Malta, Poland, Romania: no data available

Source: OECD (2013), Product Market Regulation Database, www.oecd.org/economy/pmr

3. OVERVIEW OF REGULATION IN MEMBER STATES

3.1. Number of regulating countries

According to the information transmitted by Member States either through the regulated professions database or through the specific reports the profession of civil engineer is regulated in 22 countries. (See table attached for an overview and more details).

Member States having notified civil engineers in the database are:

Austria, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Malta, Poland, Portugal, Slovakia, Slovenia, Spain, United Kingdom and Iceland, Liechtenstein and Switzerland.

Belgium, France, Finland, Luxemburg, Netherlands, Romania and Sweden have not notified a civil engineer profession.

3.2. Civil engineers and related professions

According to ISCO classification Civil engineers “conduct research, advise on, design, and direct construction; manage the operation and maintenance of civil engineering structures; or study and advise on technological aspects of particular materials.”

Their tasks can include

- “(a) *conducting research and developing new or improved theories and methods related to civil engineering;*
- (b) *advising on and designing structures such as bridges, dams, docks, roads, airports, railways, canals, pipelines, waste-disposal and flood-control systems, and industrial and other large buildings;*
- (c) *determining and specifying construction methods, materials and quality standards, and directing construction work;*
- (d) *establishing control systems to ensure efficient functioning of structures as well as safety and environmental protection;*
- (e) *organising and directing maintenance and repair of existing civil engineering structures;*
- (f) *analysing the behaviour of soil and rock when placed under pressure by proposed structures and designing structural foundations;*
- (g) *analysing the stability of structures and testing the behaviour and durability of materials used in their construction.”*

The civil engineer is closely related to the following other occupations:

Architect, civil engineering project manager, geoscientist, mining engineer, metallurgist, town and traffic planner, cartographers and surveyors. In particular for the last professions listed, in some countries, according to the report, these are indeed sometimes considered being part of the family of civil engineers.

3.3. Categories of engineer

To complete the overview of the sector, it is interesting to note that the profession of engineer in the building sector includes many different professions and titles with an extensive range of activities. More than this, many Member States further divide that profession into sub-categories:

- *Engineer: United Kingdom* (4 categories), **Malta, Italy, Ireland** (2 categories), **Iceland** and **Germany** (2 categories)
- *Energy engineer: United Kingdom, Slovakia* (2 categories), **Poland** (2 categories), **Portugal, Greece, Denmark** (2 categories) and the **Czech Republic**
- *Consulting engineers: Luxembourg* (3 categories)
- *Civil and Environmental engineers: Poland* and **Italy**
- *Construction/Civil engineering* (building of roads, bridges, railways): **Slovenia** (2 categories), **Portugal** (4 categories), **Poland** (4 categories), **Hungary, Germany** and the **Czech Republic** (2 categories)
- *Building engineer: United Kingdom* (3 categories), **Poland, Liechtenstein, Iceland, Hungary, Greece, Estonia, the Czech Republic, Bulgaria** and **Austria**
- *Building Surveyor: United Kingdom* and **Denmark**
- *Building contractor: Switzerland* (in 6 of the 26 cantons), **Slovenia, Luxembourg, Liechtenstein** (4 categories), **Hungary, France, Belgium, Cyprus** (regulated for big projects only) and **Austria**

- *Building site coordinator*: **United Kingdom, Slovenia** (2 categories), **Romania, Denmark and Croatia**
- *Civil Engineer*: **United Kingdom** (2 categories), **Switzerland, Spain** (2 categories), **Slovakia** (3 categories), **Portugal (2 categories), Poland** (2 categories), **Luxembourg, Latvia** (6 categories), **Greece, Denmark, the Czech Republic, Cyprus, Croatia, Austria and Lithuania.**

Taken together then, for the purposes of this report, we see 99 different categories falling under the umbrella of '*civil engineer*'. The range we see across Member States spreads from 1 category of professionals to 6 types of professionals within the sector.

It is interesting to contrast the many similarities across Member States in their interpretation of the profession of civil engineer. Repeatedly in the database the same broad definitions can be found under 'scope of activities'. Yet following this generally shared understanding are extensive divergences in regulatory application. This can be seen not only in the differing regimes service providers are required to navigate to access the profession and which is discussed later in this report, but also in the diversity of categories falling under each of the civil engineering related professions where the landscape is remarkably complex. It would be impossible to summarise the full range of reserved, shared and regulated activities that come under this field. The table in Annex 1 captures a broad, if not extensive, range of the scope of differences between engineers in Member States.

Whilst in **Austria, Cyprus, the Czech Republic, Estonia⁹ Greece, Hungary, Liechtenstein, Lithuania, Luxembourg, Malta, and Switzerland** there is only one category of civil engineer, in **Bulgaria, Croatia, Denmark, Finland, Italy, Latvia, Poland, Portugal, Slovenia, Slovakia, Spain, the United Kingdom** there are several different categories of civil engineers. These individual categories are either being allowed to perform their activities in given specific areas only and/or being authorized to have a limited scope of activities only and/or being awarded various levels of responsibility.

- Access to profession linked to specific sectors of activity

Professionals are allowed to perform activities only in a given area. For example **Latvia** shows a high level of specialisation with 5 types of civil engineers: water technology civil engineer, transport building civil engineer, building civil engineer, hydro-technical construction civil engineer, heating and gas civil engineer. In **the United Kingdom**, the only professionals with activities reserved by law are engineers in the fields of reservoir, aviation and nuclear related facilities. In **Denmark** and **Slovakia** only specialised energy engineers may assess the energy performance of buildings.

In **Spain**, there are two types of civil engineers: Ingeniero de Caminos, Canales y Puertos (Master of Engineering) with full professional competence in civil engineering and public works and Ingeniero Técnico de Obras Públicas restricted to one of these specialties: Civil Construction, Hydraulic or Transport. It seems that no other activity of an engineer is regulated which means, for instance, that for the construction of private

⁹ In general the profession of civil engineer is not regulated but for a company to conduct activities in the fields of design work, site investigations, owner supervision, energy audits of buildings, expert assessments of building design documentation, expert assessments of construction works or issuance of energy performance certificates must have a legal relationship with a specialist in charge – and notify the *Register of Economic Activity* of its fields of activity.

buildings the intervention of a civil engineer is not required. This is in contrast to the situation in **Denmark**, and **Finland** where the only regulated activities are those related to the construction of (public and private) buildings. Finally, it must be noted that whilst in Cyprus there is one category of civil engineer intervening in all areas, in limited specific cases where the academic qualification of the interested person relates to a particular specialization but it does not cover the whole sector of the civil engineering discipline (e.g. water technology (hydraulic) engineer, or road transport engineer etc.) partial access is granted with regard to the particular specialisation.

- Access to profession linked to scope of activities

In some Member States a distinction is made between the activities of design (all work related to drawing plans conceiving project, calculation, etc.) and construction (all work related to construction, like advising, supervision, coordination, check of conformity, etc.).

For example, in **Denmark**, **Finland**, **Latvia**, **Slovenia** and **Slovakia** the activities of designing and construction are regulated separately. While in **Denmark** the activity of designer is regulated to a very limited extent, namely only for the construction of buildings categorised as 'high hazard risk', there are two different types of engineers intervening in the construction part: a building surveyor who is the only one authorized to prepare a report on house conditions (e.g. visible faults and defects of the property) and a building site coordinator with regard to health and safety on construction sites.

Other examples of divisions within the profession include: **Latvia** where there is engineering research, design, construction works management, construction supervision construction expert examination; **Slovakia** distinguishes between a construction manager and a construction supervisor; in **Slovenia** there are currently four types of engineers: two for the designing part (responsible project designer; and responsible auditor) and two for the construction part (responsible supervisor and responsible manager of works). In **Poland** the activities of designing and construction are performed either by two different types of engineers or jointly by the same engineer depending on the qualification held.

- Access to profession linked to level of responsibility

There may also exist various levels of responsibility depending upon the professional's experience or qualification: in **Bulgaria**, designers are restricted according to their capability and the type of building/ size; in **Denmark** for building categorized as high hazard risk; in **Lithuania**, only civil engineers with a specific authorization can intervene on structures of 'exceptional significance'; in **Poland**, depending on the level of the qualification, civil engineers can access designing/construction activities with restricted or full capacity; in Slovenia, responsible project designers and responsible managers of work are authorised to work on more complex structures depending on the length of their professional experience; in **Italy**, there are two levels of civil engineers: those registered under section A of the professional body register who can perform more complex tasks than those registered under section B of the professional body register. In **Portugal** there are also two categories of civil engineers with different levels of responsibility. In particular, engineers with higher education of 5 years are authorised to perform tasks of greater complexity.

Despite a broad general understanding of what is meant by civil engineer the fact that 99 different categories of civil engineer have been uncovered makes stark the complexity and divergence that exists within the regulation of this profession. Given the economic importance of this sector and the professions Member States should conduct a rigorous assessment of their regulatory approach so as to ensure they are best serving the justifiable needs of European citizens, professionals and economy.

The coexistence of unitary and fragmented systems might create barriers to cross-border mobility especially for civil engineers moving from a country with a unitary system to a one with a fragmented system and vice versa: for instance, for an Austrian engineer moving to **Latvia**, given that in **Austria** a civil engineer can perform any kind of work in any sector it is not clear to which sector of civil engineering he will have access to in Latvia and whether it would be feasible to have access to all sectors without heavy compensatory measures.

Member States with a fragmented system are invited to reflect upon the effects of their system on the free movement of professionals and whether potential obstacles can be justified. Member States with a unitary system are invited to check whether conditions for granting partial access to civil engineers qualified in a Member State where a fragmented system is in place are fulfilled.

3.4. Types of regulations

While certain Member States regulate the profession by way of 'reserves of activities' linked to professional qualification requirements, meaning that a service provider cannot exercise the profession unless he has the qualification required or a qualification recognized as equivalent, other Member States regulate the profession with regard to the title. **Belgium, France, Germany, Ireland** and the **United Kingdom** legally protect the use of the professional title, which means that while access to the profession is free, the service provider needs to hold the necessary qualification requirements (or a qualification considered equivalent) only if he wants to use the title. In practice and depending on the Member State, the use of the title may be necessary because of market expectations and acceptance by the public.¹⁰

A small number of Member States, i.e. **Croatia, Cyprus, Italy, Malta, Portugal** (for Engineers and Engenheiro Técnico upon registration in the professional body) and Spain not only regulate the profession by way of reserved activity but also protect the use of the title. Portugal has reported that due to fraudulent activity a specific declaration system has been introduced, for the Engenheiros Técnicos by the National professional body (the Ordem dos Engenheiros Técnicos).

¹⁰ In **France**, the title protected is “*ingénieur diplômé*”. However engineers in the public service are not necessarily “*ingénieur diplômé*” and there is no regulation requiring a title or a “qualification” in order to sign an official document. In general, engineers are employees and the responsibility for the signature lies with the company; engineers do not engage their responsibility with some exceptions however for some consulting engineers in the area of construction.

In **Germany** the title protected is “*engineer*”.

In the **United Kingdom**, the legally protected titles MICE (Member of the Institution of Civil Engineers) and Chartered Civil Engineer, along with Engineering Council registration as Chartered Engineer, Incorporated Engineer or Engineering Technician. These titles may only be used by individuals who are Members of ICE and registered with the Engineering Council at the appropriate grade.

Scope of reserved activities

Regarding reserves of professional activities, again wide ranging differences and contrasts can be found. However, in general, reserved activities mainly concern either design or construction. For brevity, following the information provided in Annex 1, this report only highlights a few illustrative examples of the contrasts existing across Member States.

Concerning reserved activities related to *design* (i.e. all work related to drawing plans conceiving projects, calculation, etc.), there is a disparity between Member States on how this reserve is defined and allocated: for example in **Austria** drawing up of public documents are reserved to civil engineers, whereas in **Portugal**, designing and construction activities in all areas of civil engineering are reserved to civil engineers. In **Finland** and **Lithuania**, it concerns only the structural part of the building design documentation (not the architectural part) whilst in **Denmark** it is only a reserved activity for buildings categorised as of high risk hazard.

Concerning reserved activities related to *construction* (i.e. all work related to construction, such as advising, supervision, control, coordination, check of conformity, etc.) the following differences between Member States can be highlighted: In **Finland** only the supervision of the implementation of the design documentation of a structure as well as the activity of the person responsible for the construction work of structures is reserved to engineers. In **Italy**, the control of road infrastructure is reserved to civil and environmental engineers with five years of enrolment in and attendance of a special course. In **Denmark** the only reserved activities with regard to the construction part are the preparation of reports on house conditions (e.g. visible faults and defects of the property) which can be performed exclusively by building surveyors and the coordination of working environment conditions between the various companies working on the construction site which is assumed by building site coordinators.

Then again in some Member States, **Latvia**, **Spain** and the **UK**, the reserve of activities (designing and construction) is applied only for some specific sectors¹¹.

Where there is specialisation, or graded entry levels according to experience/qualification in the sector there are further impacts on reservations; in **Portugal**, civil engineers can perform their activities in any area of civil engineering whereas in **Latvia** they are specialised by sectors. In **the Czech Republic**, **Denmark** and **Lithuania** there is a certification/authorisation procedure for specific activities.

Other reserved activities are more specific to Member States such as the maintenance of work in **Latvia**, **Poland**, **Portugal**, **Spain** and **Switzerland**; building demolition in **Greece** and, **Spain** ; providing consulting services in the field of civil engineering in Cyprus; assessing the energy performance of buildings in **Denmark** and **Slovakia** is reserved to Energy engineers; the testing of amusement park attractions as well as the drafting and signing of the technical documentation accompanying the application for grant for facilities dedicated to pleasure boat is reserved in **Italy**.

¹¹ In the UK, reservoirs, aviation, nuclear sectors.

Such a range and nuancing of reservations is creating a complicated regulatory landscape. Further analyses on the proportionality and impact on access to the profession, mobility and the broader construction economy of these measures would seem appropriate, in particular in Member States where the activities and reserves are divided up between different specialisations.

3.5. Professional qualification required

In all Member States an academic qualification is required to perform the profession of civil engineer. However, some Member States impose additional requirements like professional experience and/or professional examination and/or certification/authorization schemes in order to acquire the necessary professional qualification.

a) Academic qualification

In most Member States a higher education qualification is required attesting studies whose duration is from 3 to 5 years: **Austria, Bulgaria, Cyprus** (4 years + 1 year traineeship), **the Czech Republic, Finland, Italy** (Bachelor of 3 years for section B and Master of 5 years for section A), **Germany, Ireland, Latvia, Lithuania** (3 or 4 years), **Liechtenstein, Malta** (4 or 5 years), **Poland** (3,5 years for civil engineers and Master 5 years), **Romania** (4 years), **Switzerland** (at least 3 years); **Denmark** - building surveyor - and **Iceland** (210 ECTS); **Luxembourg, Spain** (Ingeniero de Caminos, Canales y Puertos: either Bachelor + Masters' Degree (4+2) or Pre-Bologna integrated Masters Degree (5 or 6 years) Ingeniero Técnico de Obras Públicas: Bachelor Degree 3 of or 4 years), **Slovakia** (Master of 4 years); **Greece** (5 years); **Croatia, Hungary, Portugal**, (Master of 5 years or Degree of 3 years for civil engineers and Degree of 3 years for Engenheiros Técnicos), **Slovenia** (between 3 and 10 years depending on the level of the initial qualification and the complexity of the structure on which the engineer will work).

In Member States which do not regulate the profession, training courses at Bachelor/Master level are available (the **Netherlands, Norway** - Master 5 years -, **Sweden, France** - Master 5 years). In **Denmark** for non-regulated activities in the area of civil engineering training between 3,5 years (building engineer) and 5 years (civil engineer specialised in building) is also available.

However under specific conditions a few Member States also accept qualifications which are not part of the higher education system. For example, in the **Czech Republic, Slovakia** (for site manager and construction supervisor) and **Finland** access to the profession is also open to those holding secondary education. Additionally, **Finland** accepts persons who do not have any of the qualifications required but skills are considered as adequate. It should be noted that in both cases they can only work on small buildings with conventional technical properties. In **Poland**, access to the profession of manager of construction work in a limited capacity is also opened to those holding a title of technician, or master craftsman, or a diploma at the level of technician.

In the **United Kingdom** there is a specific regime in the way that qualifications of civil engineers (Chartered structural engineer or Chartered civil engineer) are classified at level e) of Article 11 of Directive 2005/36/EC. The central feature of professional qualifications in the UK civil engineering profession is that it is based on the assessment of competence to an internationally-recognised standard, which is open to anyone who can demonstrate that they have met those standards, regardless of how the competence has been acquired. This means that it is possible for someone to leave school at 16 with

no formal academic qualifications and professionally qualify as Chartered engineer in later life.

b) Professional experience

Professional experience is required in the following Member States: **Austria, Slovakia** (at least 3 years); **Bulgaria** (between 2 and 4 years); the **Czech Republic** (between 3 and 5 years depending on the level of the academic qualification); **Latvia** (between 3 and 5 years depending on the level of the academic qualification); **Lithuania** (between 3 and 5 years for activities with structures of exceptional significance); **Luxembourg** (2 years); **Malta** (one or 2 years); **Slovenia** (between 3 and 10 years depending on the level of the academic qualification: higher education or not); **Poland** (between 1,5 and 4 years depending on the level of the academic qualification: higher education or not, the profession performed and the level of responsibility: full or restricted capacity), **Finland** and the **United Kingdom**.

Professional experience can play an important role in the practical preparation of the professional. The duration of securing such experiences may at times prove challenging and place significant burdens especially during times of economic stress. Additionally the interrelationship between the period of study and of experience ought to be considered so as to ensure it is pitched at the most optimal level.

c) State exam and authorisation /certification process

In the following Member States a professional examination is required to become an engineer: **Austria, Croatia, Greece, Italy, Malta, Slovenia, Poland** and **Slovakia**.

In some Member States there is an authorisation/certification process for some professional categories: **Denmark** (for structural engineers); **Lithuania** (for head of constructions of structures of exceptional significance); **Czech Republic** (for construction managers).

It arose from discussions that in a number of Member States, there is a good cooperation at national level between universities and professional organisations when fixing the requirements for accessing professions as well as the content of the training programmes, with the aim to respond adequately to the needs of the profession and the labour market although there is a common understanding that public authorities have the final responsibility to determine the training requirements.

The Czech Republic stressed the importance of projects at European level focussing on civil engineer education which received grants from the European Commission such as the civil engineering program EUCEET to which a number of universities from most Member States and also some third countries participate.

3.6. Additional requirements to perform the profession of engineer

Additional requirements need to be examined and analysed in order to be able to assess whether there is any duplication of rules and whether the cumulative effect of different rules which a professional has to comply with is going beyond what is necessary in order to achieve the objective pursued.

The following additional requirements have been reported: (see table)

	<i>Mandatory registration in professional bodies</i>	<i>Legal form restrictions</i>	<i>Shareholding restrictions</i>	<i>Prohibition of joint practice</i>	<i>Mandatory professional liability insurance</i>	<i>Continuous professional development</i>
AT	y		y (51%)	y		y
BE					y for companies	
BG	y	y		y	y	y
CR	y For certified civil engineers				y	y
CY	y		Y (100%)			
CZ	y				y	
DK	For building site coordinator and energy engineers	For energy engineers only		For energy engineer and building site coordinator	For building surveyor	y (through employers) ¹²
DE						
ES	y		y For ingenieros de caminos canales y puertos: 50%		y	
EE					y	
FI						
GR						
HU	y					
IE	y for those holding the title					
IT	y				y	y
LU	y			y	y	
LV					y	y
LT					y	y (for certified engineers)
MT	y	y	y		y	
PO	y				y	
PL	y				y	y
PT	y					y
RO						
SI	y				y	
SK	y				y For chartered civil engineer	
SW						
UK					For chartered structural engineer	
CH						
IS						
LI						
NO						

Limitations of the number of licences granted have not been reported by any Member State.

A particular additional requirement has been reported by **Portugal** and takes the form of a *specific declaration*: Following fraudulent activities, engineers are registered in a national and publicly available register whose information is based on a declaration of the engineer and verified by the competent authority.

¹² It is not clear how it works in the case of self-employed professionals

Regarding additional measures in general we see that on balance the majority of Member States does not require them. Member States are invited to consider any additional requirements they mandate for with the view to clarifying precisely the benefits or burdens they may bring.

In particular, prohibitions around shareholder / voting restrictions and joint practices should be rigorously scrutinised and justified by those implementing such measures to ensure the value they are designed to bring is truly captured and without any negative consequences on the market.

There is a debate to be had around the proper powers of professional bodies who have the best expertise in their area and are without doubt a force for the good in championing standards of professionalism and knowledge. However, authorities must be careful of any burdens placed on individuals and the market. In cases where there is a requirement for both registration and membership in a professional order, Member States should analyse carefully the balance between benefits and burdens brought by this measure.

3.7. Voluntary certification system

A voluntary certification system exists in **Austria, Denmark, Estonia, Finland, Portugal, Spain and the United Kingdom.**

Croatia is considering foreseeing one in the future legislation.

4. RESULTS OF TRANSPARENCY / SCREENING EXERCISE BY MEMBER STATES

4.1. Non discrimination

Member States should ensure that professionals can access the regulated professions without being a national or without having to reside in their national territory. This means that it should be examined whether the requirements under the national legal system are directly or indirectly discriminatory on the basis of nationality or residence.

Those Member States which communicated information to the Commission on this aspect confirmed that there is no discrimination based on nationality or residence.

4.2. Justification - Risks related to the activity and overriding reasons of general interest

Member States reported many of the same **risks related to the activity of engineers.** The risk of failure in the structural integrity of projects predominated as did concerns around the maintenance of cultural heritage. Fire and health safety risks were also raised as was environmental damage such as water contamination, disaster prevention and environmental protection, and energy efficiency. Other risks beyond the structural, associated to the need to regulate the profession included the optimisation of investments, the impact of lawsuits on the business as well as insurance premiums, fraud on prices and lack of control over legal provisions on public safety or risks raised from the exercise of the activity as self-employed. In line with this Member States reported to the Commission that the following **overriding specific reason(s) of general interest might be jeopardised** which justify(ies) the regulatory framework.¹³

¹³ **Austria, Croatia, Italy, Iceland, Portugal,** stressed that the same rules apply to similar professions like architects or other engineering areas. **Denmark** mentioned that the same approach is followed

- *Protection of the environment* and the urban environment, including town and country planning: **Austria, Bulgaria, Croatia, Cyprus, the Czech Republic, Hungary, Italy, Liechtenstein, Malta, Poland, Portugal, Slovenia, Spain, Switzerland and the United Kingdom.**
- *Public Health*: **the Czech Republic, Denmark** for structural engineer and building site coordinator, **Ireland, Malta, Portugal, Slovenia and the United Kingdom.**
- *Preservation of cultural, historical, archaeological and artistic heritage*: **Austria, Hungary, Italy, Liechtenstein, Lithuania, Malta, Poland, Portugal, Slovenia and the United Kingdom.**
- *Road safety*: **Bulgaria, Portugal, Slovenia and Spain.**
- *Public Security*: **Austria, Croatia, Cyprus, Denmark** - for structural engineers and building site coordinator - **Germany, Iceland, Liechtenstein, Lithuania, Malta, Portugal and Slovenia.**
- *Public policy*: **Switzerland.**
- *Protection of life, health and safety of people*: **Bulgaria, Iceland.**
- *Protection of consumers and recipients of services*: **Austria, Bulgaria, Cyprus, the Czech Republic, Denmark** – for building surveyors – **Hungary, Germany, Italy, Iceland, Ireland, Malta, Poland, Portugal, Spain, Slovenia and Switzerland.**
- *Public interest/trust*: **Greece**
- *Saving measures*: **Denmark** for energy engineer
- *Prevention of fraud*: **Portugal.**

In citing general interest objectives around “public policy”, “public security” and “public health” Member States are reminded of the concepts of EU law which stem directly from Article 52 TFEU. These concepts have been consistently interpreted by the ECJ. Such objectives must only be understood as a response to a serious threat to the fundamental interests of society or the survival of the people. Given this, alongside the differences in the way the profession is regulated (fully or with regard to some activities only or with regard to the title) as well as qualification requirements from one Member State to another, more precision is needed in connecting risks with general interests and final policy solutions.

Ensuring proper qualifications, i.e. ensuring that the service provider has the skills and knowledge necessary to perform properly the activity, is considered essential for protecting most of the reasons of general interest brought forward given the various categories of engineers, the risks inherent to the activity and the complexity of the technics which are involved. **Cyprus, Estonia, Spain and Slovenia** underlined the

with regard to the objective of protecting health and safety. Each requirement on each regulated profession in the Danish industry seeks to minimize the health and safety risks.

importance of having reserved activities as a guarantee that the activity will be performed by well qualified professionals.

However, it must be reminded that the way the profession is regulated (fully or with regard to some activities only or with regard to the title) and qualification requirements vary a lot from one Member States to another while many of them report the same risks and pursue the same general interests.

A couple of examples can illustrate those divergences. For instance in **Bulgaria**, the design part is considered being the most complex and the most important and that is why only this part of the activity of an engineer is regulated. In **Denmark**, only building surveyors are allowed to report physical defects of a building within 1-2 hours using a special visual method. Newly graduated architects or engineers or similar are not considered having the necessary experience to perform this activity, but design activities are not reserved.

In **Portugal**, civil engineers can perform their activities in any area of civil engineering whereas in **Latvia** they are specialised by sectors.

Whereas in **Portugal, Spain, Switzerland** a higher education qualification is deemed sufficient to exercise the profession of civil engineer, in **Bulgaria** and **Luxembourg** it is also necessary to have professional experience. **Croatia, Greece** and **Italy** impose a state exam, whereas in **Austria, Poland, Slovenia** there is both professional experience and a state exam required. It has also been noted that in some Member States (**Czech Republic, Slovakia, Finland**) to some extent the profession is opened to those holding secondary education or having adequate skills (**Finland** and the **United Kingdom**).

Member States should reflect further upon their different approaches and endeavour to explain why a specific approach has been taken and justifies maintaining with regard not only to the principles of proportionality, necessity, non-discrimination but also to the real impact on the market. It appears from discussions that history and traditions seem to have a strong impact on the way professions are regulated.

Croatia, Cyprus, Germany, Portugal and the **United Kingdom** consider that the objectives of general interest are secured through *title protection* as this ensures that only qualified people access professional responsibilities. **Portugal's** *system of declarations* was introduced because the protection of the use of the title was not considered sufficient. The system was designed to combat the illicit use of the title from those who are not civil engineers and to ensure that the engineering acts are practiced only by those who have demonstrated the necessary skills to perform them.

A number of Member States stressed the importance of *continuous professional development* in order to guarantee the quality of the service provided to the consumer and/or the public. Such requirements aim to ensure that professionals are always up to standard and ensure that public interests are safeguarded (**Bulgaria, Italy, Lithuania, Slovenia, Spain** and the **United Kingdom**)¹⁴. However, it arose from discussions that Member States remain divided over the need to have compulsory continuous professional development.

¹⁴ The introduction of mandatory CPD is the subject of on-going discussions in Malta as part of the review of the current legislation regulating the profession.

In **Croatia, Estonia, Ireland** and **Slovenia** there are *ex-post control checks* which aim to provide additional guarantees. In **Croatia**, the ex-post control checks are only for basic requirements, i.e. “mechanical resistance and stability for the high-risk structures”. These are also combined with rather formal checks during the issuing of the construction permits and random control activities on the sites. In contrast, **Cyprus** considers that ex-post controls are not efficient because of the high risks that could arise and favour a combination of ex-ante measures like Post-Secondary Education, mandatory registration in professional body, shareholding restrictions. In **Slovenia**, ex-post controls are only carried out in case of doubt and not on a systematic basis.

A number of Member States underlined the importance of *membership in the professional body* in order to ensure control over professionals who can face disciplinary sanctions in case of misbehaviour and to guarantee that professionals will perform their activity in a diligent way. This concerns **Austria, Bulgaria, Croatia, Cyprus, Italy, Luxembourg, Malta, Portugal, Poland, Slovenia, Spain** and **the United Kingdom**

In **Italy** the professional body ensures that members comply with a code of ethics, whereas disciplinary sanctions are the competence of other bodies (national councils).

Malta has a hybrid system where the professional body is tasked with ensuring that its members abide by a code of ethics whilst at the same time professionals are given the right of appeal to a court of law against a decision (taken by the professional body) deeming them in breach of the code. This system is currently under review.

However the added value of those systems as compared to the traditional judicial system could not be clarified.

Comparison with Member States who do not regulate the profession

It is interesting to note that while in some Member States the regulation of the profession is considered necessary mainly to guarantee the safety and quality of the service provided, other Member States have found different ways to ensure quality or safeguard general interest. For example, in the **Netherlands**¹⁵ and **Switzerland** there is a *regulation on construction standards* which ensure the quality of work performed. **Switzerland** stressed that the general public does not perceive any difference in the quality of building constructions in cantons that regulate the civil engineering profession and in cantons that do not.

In **Sweden**, *the principle of the responsibility of the client* has traditionally been of major importance. The role of the “client” is to carry out construction projects at his/her own expense, or to hire someone to carry out such projects. He is responsible for ensuring that new constructions correspond to the relevant legal requirements. In addition to the building permit, most constructions projects require a control plan, which has to be approved by the municipality. In addition, in most cases, the involvement of an independent certified “quality control manager” is mandatory and the municipality can also require the involvement of other certified specialists. If an undertaking employing a civil engineer provides building services to a client, this client is protected by the “Consumer Services Act”. **Sweden** considers that this system which involves the municipalities, certified quality control manager and the consumer protection legislation is sufficient to safeguard public interests.

¹⁵ Although the Netherlands are considering a system whereby the title would be protected

It is interesting to note that in Member States regulating the profession, there is a tendency to consider that once the civil engineer is fully qualified there is no need to check the work performed except in well determined cases whereas in non-regulating countries, there tends to be more supervision over the individual works of a civil engineer. Non-regulating countries also point out that public interest objectives such as consumer protection are adequately safeguarded by non-profession specific legislation, such a consumer protection law or legislation on construction standards.

4.3. Concrete effect of the measures

Very little information was provided by Member States.

Germany and **the United Kingdom** underlined the value of the title on the labour market.

Croatia and **Spain** underlined that construction works are safe with good design and well maintained. **Spain** notes in particular that its high speed railway transport is exemplary in design, maintenance and performance. **Croatia** also stressed that their waters are not polluted and their forests are preserved.

Austria, Croatia, Spain, and **Poland** underlined the low number of complaints against professionals.

In **Portugal** many studies and surveys have shown that there are few accidents on site.

Denmark indicated that for energy engineers there is evidence that the price of some houses is related to the Energy performance certificate.

Greece reported that due to the regulation of the profession, the number of deaths caused by earthquakes is very low compared to other countries. However no figures were provided.

5. CONCLUSIONS BY MEMBER STATES ON THEIR SCREENING PROCESS

The following Member States wish to maintain the current system: **Austria, Bulgaria, Denmark** (for structural engineer and building surveyor), **Germany, Italy, Lithuania, Malta, Portugal, Spain, Switzerland** and **the United Kingdom**. **Italy** and **Lithuania** have however indicated that improvements might be necessary within the current framework.

In **Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Lithuania, Luxembourg, Slovenia** and **Slovakia**, reforms are being considered or ongoing.

Croatia considers regulating the training and taking into account informal learning. It is also considering the introduction of a voluntary certification system so that professionals may be recognised as specialists on the market.

In the **Czech Republic** it is currently considering to extend the authorisation scheme in place for construction managers to the activity of construction supervision over buildings which are being constructed independently.

Denmark is considering simplifying guidance and removing burdensome aspects for energy engineers. The Danish authorities are in particular working on an e-learning

website, which will make it more flexible for experts to obtain relevant knowledge and guidance.

Estonia is considering introducing a mandatory certification.

Lithuania is revising the use of the qualification certificate for civil engineers that is currently required for constructions of 'exceptional significance' and planning in addition to establish as well to those wishing to work on 'non-exceptional significance' the requirement for a certificate which proves their education and professional practice. The draft law is awaiting approval.

In **Slovenia** there is also ongoing reform. The aim is to merge several professions into two main professions: architects and engineers. It also proposes to simplify procedures connected to the registration of professionals, to impose a continuous professional development system, to protect the title and to strengthen the rules on insurance for professional liability. The new system would be based on individual liability of professionals whereas the current system is based on liability of organisation.

Further to the collapse of a bridge in **Slovakia**, new categories of regulated engineering professions will be introduced; engineer of construction supervisor, engineer for site management, engineer of the investment preparation of constructions and controlling structural engineer. The implementation of these new categories would increase the quality of preparation, projecting and realization of buildings.

Cyprus is currently studying how CPD requirements linked to specific reserved activities could further serve the achieving of general interest objectives (public safety, protection of the consumer and protection of the environment).

Based on the information submitted by Member States in writing and during the meeting of 30 September 2014, it can be concluded that overall Member States aim to protect the same general objectives of public interest. However, there is a wide variety and great deal of complexity in regulatory approaches adopted with this objective in mind. This might affect the mobility of European civil engineers wishing to practice in a different Member State.

In addition Member States are invited to check whether conditions to grant partial access to the profession are fulfilled and also to actively compare their current regulation with those of other Member States in order to determine whether their approach is optimal or whether the same objectives could also be achieved by other, less restrictive means.

In this respect, it should be remembered that the aim of the mutual evaluation exercise is to ensure that national rules are serving the needs of professionals as well as consumers and are doing so in the most effective manner possible.