CLIMATE CHANGE
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Energy-Related Qualification of Building and Planning Professionals

Part 1: Legal Barriers to Climate Protection in Planning and Construction of Buildings

Summary

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Energy-Related Qualification of Building and Planning Professionals

Part 1: Legal Barriers to Climate Protection in Planning and Construction of Buildings

Summary

by

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1 Introduction

Given the goals of climate protection policy, specific energy-related tasks play a central role in facility planning, particularly in the areas of building upgrades and refurbishments.

The groups of professionals involved in planning, building and upgrading facilities in Germany largely do not receive specific training preparing them for these energy-related tasks. This includes the trade professions involved in carrying out the construction of buildings, but also the personnel responsible for facility planning, such as architects and civil engineers. Only a small percentage of planners has received specific energy-related education. It will be necessary to increase the energy-related competencies of architects and engineers across the board to an acceptable minimum standard. A focus on increasing the development of specialists for the energy performance of buildings would be of limited impact, since smaller buildings are usually planned only with the help of generalists.

In light of this situation, this study examines, from a German federal perspective, the legal and regulatory policy options for improving the energy efficiency qualifications of all building and planning professionals. In a first step, the study analyses the current legal and regulatory environment at the federal and state (Länder) levels. Building on the analysis, the study identifies a number of possible instruments and discusses their feasibility, particularly in terms of their compatibility with the regulatory framework provided by the German Constitution (Grundgesetz – GG) and EU law. Finally, the study develops an implementation concept for the regulatory path that was developed as preferable based on the analysis. The longer version of the study includes a draft text for the recommended new regulation.

2 Analysis of Current Legal Environment

The requirements for qualifications of architects and civil engineers who are entrusted with construction tasks derive from a complex combination of several legal areas. In addition to basic occupational law, these include the curricula of the respective graduate education programs, as well as the requirements of construction and energy efficiency laws for facilities. In summary, the requirements for qualifications are largely determined by the respective graduate program curricula. The regulations of occupational law, construction, and energy law do not prescribe additional minimum requirements or specific continuing education obligations related to energy efficiency.

2.1 Occupational Law for Architects and Civil Engineers

In Germany, occupational law for architects and civil engineers historically developed to be a matter of the states' (Länder) law as well as of the internal laws of professional associations, such as chambers of architects and engineers.

In each state, there is usually an engineers' act, which determines the basics of who can hold the professional title of engineer. This applies to all graduates of technical graduate university programs, including architecture, civil engineering, and construction technology. In addition, the law of each state regulates the conditions under which professionals with titles such as "architect" or "consulting civil engineers" may describe and offer their planning and consulting services. These laws form the core of occupational law. In each state, they can be found under similar or slightly varying descriptions. In some states, state law distinguishes between "architects" and "consulting civil engineers" active in the construction sector, and in some states the law combines both professions.

Regardless of the variances in terminology and of the state specific categorisation within the legal framework, the occupational law of the states (Länder) essentially follows a consistent pattern:

- The laws prescribe that professional associations shall be formed, such as "architects' chambers", "civil engineers' chambers", or chambers covering both professional groups. These are public, self-governed bodies, with by-laws and mandated membership.
- According to each state law, in order to independently practice their profession, professionals are required to be registered with the respective chamber. The conditions for registration are regulated in detail by the by-laws of each chamber, and typically include graduation from the respective university graduate program, as well as two years of practical experience on the job under supervision of an independent professional. There are no requirements for specific knowledge or skills related to energy efficiency tasks.
- The by-laws of each chamber also regulate requirements for continuing education. There is a basic obligation in the original laws to participate in professional development on a regular basis. Most chambers refer to this basic obligation, without further quantifying requirements or prescribing control mechanisms. In seven of the states the chamber by-laws go beyond the basic obligation, by defining a minimum number of professional development hours per year: eight hours total or on average. (e.g. Thüringen requires 10 hours/year, and Nordrhein-Westfalen 20 hours, 8 of which are enforced through possible sanctions). Opportunities to make up for missed hours are available. In some cases, a point system has been implemented. Enforcement occurs through audits, or through the obligation to submit professional development documentation. Energy-efficiency competencies are always among the electives for continuing education, however in no case is there a requirement to attend energy-related trainings.
- As of March 2015, most states do not offer architects the possibility of acquiring a specialization or certification in energy performance of buildings. Only Baden-Württemberg features a registry of specialists. Among the consulting civil engineers, specialisation is more common, mostly focused on the four common types of technical verification required by the state's building construction acts (statics, fire safety, foundations, sound and heat protection). The engineers' chambers of Baden-Württemberg, Hessen, Rheinland-Pfalz and Saarland have developed a joint platform for further specialisation around energy-related topics.

2.2 Higher Education Law

Higher Education law in Germany is based upon the basic right of free science laid down in the German Constitution (Art. 5 Abs. 3 GG). The right to free science includes the right of institutions of higher education (such as universities and universities of applied sciences) to independently develop graduate course programs, their names and their detailed content. As a result, there are no legal specifications for the learning content of specific graduate programs.

The content of university courses of study are indirectly affected by the EU Directive 2005/36/EG on the Recognition of Professional Qualifications[1]. This directive regulates which specific educational profiles must be mutually recognized as equivalent to the respective national degrees. When institutions of higher education transitioned from diploma to bachelor/master systems in architecture, they sought to incorporate the minimum requirements from

[1] Directive of September 7, 2005 (OJ EU L 255 p. 22), last amended by Directive 2013/55/EU of November 20, 2013 (OJ EU L 354 p. 132).

Directive 2005/36/EC. This is due to the fact that the Directive lists specific requirements for the contents of architecture graduate programs. These include basic knowledge of construction technology and construction physics issues, as well as heating and cooling technology for buildings.

In 2007, the German Federal Chamber of Architects published guidelines for the implementation of the Directive. The guidelines are an attempt to specify the minimum requirements in the Directive and quantify them in terms of the metrics typically used by today's universities. Based on the total number of 240 points required to graduate, the guideline recommends to reserve 54 points (out of 122 points in the required courses) for "technical science", and out of those 16 points for "building materials, construction physics, and facility technology". Additionally, for the elective courses worth 27 points, the guideline recommends the possibility to choose technical science as one of elective emphases.

It is safe to assume that architecture graduate programs at German universities largely meet the recommended minimum standards. However, those master and bachelor students who choose other specialisations and electives receive only a certain minimum in terms of basic energy efficiency knowledge. Since a large part of the architecture student body is motivated by an interest in design, rather than technology, it can be assumed that a significant portion of graduates continues to have a fairly narrow base of knowledge regarding energy matters.

This study did not analyse the content of the courses of study of former diploma programs. It is safe to assume, however, that in those years many graduate programs placed a lot less emphasis on energy-related issues, and that heating and cooling technology was not touched on at all.

2.3 Building Construction Acts of Germany's States (Länder)

Building construction requirements are a subject of state law and are laid down in specific state acts, entitled as "Bauordnungen" (often translated as "construction regulations", although their legal status is equal to a regular act). The federal entities have no power over the development of construction acts in the Länder.

State construction regulations have an indirect impact on the qualifications of architects and civil engineers, insofar as they establish requirements regarding the authorized signatories on general construction documents to be filed with the public offices that issue building permits, as well as for the authorized signatories of specific technical verification documents (bautechnische Nachweise).

Practically, construction acts in all of the Länder do not require any signatory qualification beyond being listed in the regular registry of an architect or engineer chamber. No specific energy related competencies are required for building documents or technical verification documents.

2.4 Energy Law for Buildings

Likewise, energy law does not create further energy-related qualification requirements for architects and civil engineers involved in construction. Energy law provides two possible starting points for additional qualifications: First, proof of compliance with requirements for energy performance in new construction, and second, authorization to issue energy performance certificates. The basis for both of these are the regulations established in the federal Energy Saving Ordinance (Energieeinsparverordnung, EnEV), which is based on the German Energy Saving Act (Energieeinsparungsgesetz, EnEG), and is monitored through enforcement regulations of the Länder (EnEV-DV).

The proof of compliance for energy performance requirements of newly constructed buildings is currently not regulated in a uniform manner across the Länder. The Länder handle proof of compliance in a variety of ways. In some cases, the enforcement regulations (EnEV-DV) specify the rules, in other Länder, use cases for proof of compliance remain unregulated. Neither the federal nor the state (Länder) level laws establish specific energy-related qualifications for the authorization to issue proof of compliance. In those Länder that do have requirements, it is sufficient to be authorized to sign construction documents.

The requirements for the issuance of energy performance certificates for existing buildings are regulated in § 21 EnEV, complimented by Annex 11 EnEV. According to this, architects and consulting civil engineers listed in the chamber registries are authorized to issue energy performance certificates. Members of other professional groups, however, are largely required to acquire additional qualification regarding energy-related aspects of construction through professional development coursework. Details are established in Annex 11 EnEV. Here, the qualifications to be acquired are described in terms of their content, but are not further quantified. There are no provisions for monitoring or certification of the coursework.

3 Analysis of Further Regulatory Options

Basically, all of the legal areas described above offer opportunities for an expansion of energy-related qualifications of those professional groups involved in planning and construction. However, an analysis of Germany's Constitution reveals that the federal entities have no or very limited possibilities for influencing most of the relevant areas of the legal framework. Energy saving law appears to offer the most promise here.

3.1 Occupational Law: Expanding Professional Development Requirements

In regards to occupational law it is conceivable to establish specific continuing education requirements for architects and civil engineers active in construction. The Länder would be able to create the respective regulations within their state laws governing professions. The chambers would then have to obey these regulations and specify them as needed.

At the federal level, such a law, while possible, does not appear to be likely. In principle, federal law makers could invoke their law-making authority over laws relating to economic matters (Art. 74 Abs.1 Nr.11 GG), as well as, when referring to climate policy, upon the laws relating to air pollution control (Art. 74 Abs.1 Nr. 24 GG). However, a necessity to regulate overall continuing professional education at the federal level (Art. 72 Abs. 2 GG) outside of climate policy motivations is not presented. As a result, a singular regulation regarding continuing education around energy competencies would be possible (not applying to overall continuing education law), based on federal jurisdiction for climate policy. But from a policy-making perspective, such a proposal would have very little potential for success. The federal government may be more likely to succeed with a non-policy initiative aiming at voluntary joint engagement of the respective professional chambers.

Expanding continuing education requirements could be classified as an encroachment of the constitutional right to occupational freedom (Art 12 Abs. 1 GG) by the members of the professional chambers. However, with climate protection as the intention, such a regulation can be justified sufficiently and be structured in a manner commensurate to the goal.

3.2 Higher Education Law: Changing Educational Content

Due to the legislative power provisions of Germany's constitution, the federation is unable to directly influence the content of university graduate programs. According to Art. 74 Abs. 1 Nr. 33 GG, the federation may only co-regulate in the areas of admission to institutions of higher education and requirements for graduation in such institutions.

From the perspective of the law-making authority, it would be possible for the Länder to make changes through the state higher education laws. However, prescribing specific contents for courses of study would constitute a severe violation of the constitutional freedom of the sciences (Art. 5 Abs. 3 GG), and its feasibility would be very questionable from a constitutional perspective.

3.3 State Building Construction Acts: Requirements for Qualifications of Professionals authorized to submit Construction Documents

The building construction acts of the Länder provide an opportunity to introduce a specific energy-related base qualification by expanding the provisions around the authorization of building construction documents.

From a political perspective however, such an initiative would go against a trend that has been prevailing for quite some time: to deregulate the provisions of the building construction acts (Bauordnungen). In addition, this field of law is subject to the legislative power of the German Länder, so the federation has no policy-making authority. As a result, comprehensive success of a legal initiative centred on the Bauordnungen could only be achieved if all Länder actively participated in a joint effort.

The path of expanding the requirements in the construction regulations for authorization to submit construction documents is indeed promising from the perspective of the Länder, especially when part of a larger strategy to integrate monitoring of requirements of Energy Law and building regulations. From a federal policy perspective, this approach can be encouraged, but it does not provide a useful base for a comprehensive national solution.

3.4 Energy Law for Buildings: Qualification Requirements for Issuing Proofs of Compliance and Energy Performance Certificates

Climate protection law as it applies to buildings offers the most suitable starting point for comprehensively improving construction professionals' energy related qualifications. Climate protection law for buildings is currently set down in the Energy Saving Ordinance (Energieeinsparverordnung, EnEV) which is based upon the Energy Saving Act (Energieeinsparungsgesetz, EnEG). While it is not possible to directly establish universal qualification requirements here, the requirements for authorization to issue proof of compliance with EnEV provisions and energy performance certificates can be regulated here, which will lead indirectly to an increase in qualification of the professionals.

Currently, EnEV practically treats architects and various types of engineers automatically as sufficiently qualified to issue energy performance certificates. This is where additional requirements could be introduced. It would also be feasible to introduce such qualification requirements for the authorization to issue proof of compliance with energy performance requirements for new buildings, which is currently completely unaddressed in EnEV. In addition, it would be necessary to align and expand technical qualification requirements for the other professional groups that according to EnEV are eligible to issue energy performance certificates.

Federal legislative power for such an initiative would be based upon Art. 74 Abs. 1 Nr. 24 GG (air pollution control) combined with Art. 74 Abs. 1 Nr. 11 GG (law relating to economic matters).

There are no concerns from a constitutional perspective. While the new regulations would slightly encroach on Occupational Freedom (Art. 12 Abs. 1 GG) and Property Freedom (Art. 14 Abs. 1 GG) of building owners, the means are reasonably justified by public interest.

From an EU legal perspective, it is necessary to consider the EU Directive 2010/31/EU regarding the energy efficiency of buildings[2]. This requires the member states to establish overall energy efficiency requirements for new construction (to be stipulated nationally), and, regarding the issuance of energy performance certificates, the existence of an appropriate qualification. EU law must generally be implemented based on the principle of "effet utile" in a practical, effective manner. The concept proposed here can meaningfully contribute to this principle.

4 Proposed Concept for the Expansion of Legal Requirements

In summary, to improve the energy-related qualifications of professionals involved in planning and construction of buildings, the establishment of specific qualification requirements in Energy Savings Law offers the most advantageous path.

A new § 21 EnEV could be central to the regulation, and could focus not only on the issuance of energy performance certificates for existing buildings, but also on the issuance of energy performance certificates for new buildings, and, more importantly, on proof of compliance with EnEV requirements for new buildings.

Key components of the proposed concept for a new § 21 EnEV are as follows:

- All members of professional groups potentially eligible should in principle be required to acquire specific knowledge of energy technology for buildings either in their graduate program, their professional education, or through appropriate additional training. Further, it should be stated that once in professional practice, professionals have to keep their knowledge up to date through continuing professional education.
- Detailed requirements in terms of energy technology for buildings should be laid down in a new annex 11 of EnEV, clearly differentiating between the different use cases and eligible professional groups. To facilitate an easy overview, a consistent rationale and effective monitoring, it is recommended to organize the requirements in modules and clearly quantify them. The relevant public entities should be authorized to monitor the providers of both graduate education and continuing education programs to assure quality control.
- The new regulations should be secured through an appropriate base provision in the EnEG, setting down key elements for the regulatory level.

The long version of this study includes a complete draft text for the recommended legislative concept.

[2] Directive dated May 19, 2010 (OJ EU L 153 p. 13).