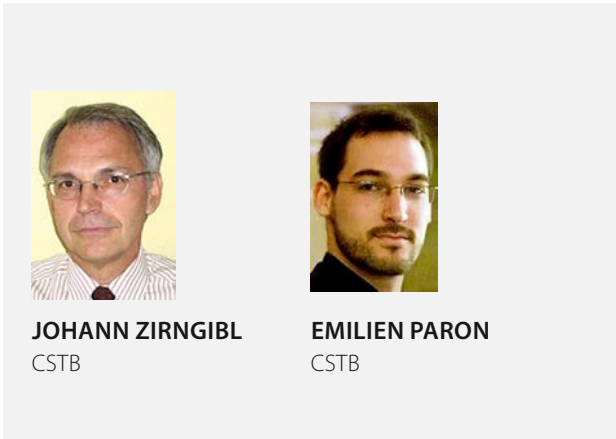


CEN-CE in a nutshell

Upskilling HVAC professionals, the linchpin of the EU Green Deal

Energy efficiency, low carbon footprint are challenges linked to the EU climate change commitments. To bring the EU targets into application HVAC professionals needs to be trained on these challenges but also on EU common methodologies because there is a need for a standardised, reliable quality benchmark.

Keywords: energy efficiency, building renovation, heating systems, European Standards, EPBD, nZEB buildings



What is CEN-CE – the key aims

CEN-CE is a European funded H2020 project related to the increase of construction skills of professionals in order to reduce energy consumption and the carbon footprint. This thematic is linked to the EU climate change commitments and related EU legislation.

CEN-CE stands for *CEN Standard Certified Experts*. The objective is to set up a European wide training and qualification scheme for building professional in the field of heating and water-based cooling systems (HVAC) recognised all over Europe.



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The CEN-CE Team.

CEN-CE project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No. 785018. The sole responsibility for the content of this project lies with the authors. It does not necessarily reflect the opinion of the European Commission.



CEN-CE training is based on the European (CEN) standards developed by CEN/Technical Committee 228 “Heating and water-based cooling systems” and CEN TC/371 “Overarching standard for global indicator”.

The CEN-CE training and qualification scheme should run after the project as a non-profit self-funded business case in cooperation with other organisations including mutual recognition.

Why CEN-CE now – setting the scene

The European Commission charged CEN (European Committee of Normalisation) to develop standards to facilitate the implementation of EPBD (Energy Performance of Building Directive) requirements in the EU Member States. These standards were positively voted in January 2017 and published. To bring them into application training will be needed. CEN-CE is the first project proposing an EU wide common training scheme which could also be the basis of EU wide mutual recognition of construction skills.

Nearly 35 % of all buildings in the EU are over 50 years old, of which approximately 75 % are energy inefficient. But even though renovating existing buildings could substantially reduce energy consumption (by up to 60 %), only 0.4 to 1.2 % are renovated each year. Just 15 % of renovated buildings incorporate significant energy-efficiency improvements.

On the other side the EU targets are ambitious. EPBD ask for example new construction to be nearly zero-energy buildings as of 31 December 2020. The EU Green Deal target is to be carbon neutral in 2050. To bridge the gap between the energy performance of the actual building stock and the EU targets, qualified



building workforce is needed. HVAC professionals will play an important role in implementing energy efficient solutions, especially in building renovation where HVAC systems are often replaced or upgraded in shorter intervals.

The Game changer - New challenges for HVAC professionals

Reaching the EU Commitments is a new challenge and request increased skills to perform high quality, reliable energy-efficient renovation. The results must be communicated in a way to be understood by all actors of the building value chain (common language, common indicators).

HVAC professionals should be aware on the new challenges linked to the requirements mentioned before. There will be a *game changer* because HVAC professionals must be able to:

- improve *significantly* the energy performance and *switch to low carbon renewables*;
- upgrade installations to be “2050 compatible” (avoid lock-in effect by sub-optimal installation in new buildings and in renovations);
- provide a *reliable* estimation of the real impact of the new installed or upgraded installation;
- *design* for performance and *communicate* on performance.

The needed technologies are available. Compliance with future building performance requirements *demand a higher degree of sophistication and details*, when moving towards nearly zero energy and carbon neutral building.

Why CEN-CE is different from other training schemes - the CEN-CE Unique Value Proposition

It is well known that there is a lack of motivation from building professionals to attend training courses which are not mandatory, and which cannot be valorised immediately in the daily work.

But the CEN-CE training and certification scheme addresses a strong market request, shown by the support of stakeholders of the whole building value chain and public authorities, including the EU Commission.

Qualification and training based on European (CEN) and International (ISO) standards is an advantage for mutual recognition of qualifications and certifications

schemes among different countries. Standardisation is also key to create level playing field for products European wide in order to reach a technical neutral assessment (fair competition between products and solutions).

The EU Green Deal and the associated building renovation wave will be the linchpin and game changer. This European funding must be associated to a clear taxonomy, to a common standardized European quality benchmark of building renovation, if the impact on climate should be real. It is not acceptable that the same building is evaluated “green” in one country and “black” in another because only the evaluation procedures are different. *European funding should be linked to European rules (European standards).*

The CEN-CE Unique Value Solution, the specific added values of the CEN-CE project, can be resumed as follows:

- CEN Standards are already used by many EU Member States. The training could be valorised for legally mandatory energy performance methodologies and/or voluntary schemes as the Green Deal, DGNB or HQE and BREEAM.

- CEN Standards allow an EU-wide evaluation of equipment performance, comparability of results and transparency based on a technology neutral assessment;
- Qualification and training of experts based on European standards is an advantage for mutual recognition of qualifications.

Overview of the CEN-CE training content

The standards developed by CEN under mandate M480 of the EU Commission are related to the daily work of HVAC professional, as e.g. the sizing of heating systems, or related to upcoming challenges like global cost calculation, integrating renewable energy sources, measured energy performance. Providing training on individual technical topics is no longer sufficient in the new context. Complementary training on transversal know-how is needed to express the impact of the HVAC system (new or renovated) on the overall performance of buildings on energy (e.g. non-renewable primary energy indicator, ratio of renewable source), but also on economics (global costs). To be able to check the real performance (measurements and inspection) become also more and more important.



CEN-CE team organized the 2nd Stakeholders' Workshop in Brussels 2019.

CEN-CE developed training programmes covering both: individual standards and ‘big picture’ issues. CEN-CE adopted a holistic approach to assess the building’s energy performance towards NZEB buildings.

The CEN-CE outcomes

The training and qualification schemes are targeted towards middle and senior-level professionals. These training schemes equip architects, engineers, system designers and installers with the latest know-how in energy-efficient and low carbon building assessment and technologies at international level.

The training is organised by *training modules*. The training modules are linked to specific standards. Each training module includes a presentation on the:

- fundamentals of the technology;
- a handbook on calculation procedures;
- an Excel-based tool for evaluating the impact of different parameters.

To become a certified CEN-CE expert there are some pre-requisites to fulfil, such as the educational level, and the need to pass an exam. Once passed the exam, the participant will have their name added to the CEN-CE list of certified professionals. This list will be publicly available and can be used to easily find a qualified HVAC professional for building construction or renovation projects.

To resume, the advantages for HVAC experts provided by CEN-CE training and certification scheme are:

- be trained on harmonized procedures facilitating mutual recognition of skills, allowing professionals to work EU wide;
- gain recognition of the market on quality, reliability, comparability and transparency;
- gain on visibility (referenced in CEN-CE expert data base);

- use best available know-how based on European and international standards.

The CEN-CE market uptake and roll-out

HVAC professionals and building experts will only spend time and money for training and qualification if they can use the lessons learnt, if there is an immediate (and maybe mid-term) market request related to the training issues.

Hereafter are resume the main drivers of the market request.

- The first market request may be related to the needed increased professional skills in sizing, calculated and measured energy consumption. The CEN-CE experts will be better prepared for the new challenges related to nZEB’s, cost optimum, integration of renewables, EU wide taxonomy based on EU standards.
- The second market driver, and probably the front runner of the market demand, may be industrials. The CEN-CE training and qualification scheme could be added to their professional academies. In addition to be trained on their products, installers and designers will be certified and may get credits for national mandatory regularly know-how update. The performance of their product can easily be implemented in calculation and communicated EU wide.
- The third market driver for the CEN-CE market uptake may be the request from voluntary schemes (e.g. HQE, Green Deal taxonomy) and mandatory certifications schemes (e.g. national EPC’s) using the European standards.

For the practical roll-out of the CEN-CE scheme, the CEN-CE training and certification scheme may be stand-alone or complete existing schemes by the know-how and skills needed by the HVAC professional to meet tomorrow’s challenges in building design and retrofitting. ■

BECOME A CEN EPB STANDARDS CERTIFIED EXPERT

– [Register for free](#) to the Online Pilot Training (July - September 2020)

CEN-CE online pilot training and certification for attaining new knowledge on two showcased CEN standards (heat pumps & measured energy) part of the improved set of Energy Performance of Buildings standards and actively contribute to the development process of this EU-wide training and certification by providing your valuable feedback.

