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Enforcement, compliance with EU policies and call for binding targets

Compliance is essential to achieve the full energy efficiency and carbon savings potential of buildings. The EU Green Deal and the EU climate law and all related policies should keep and strengthen the focus on ensuring high-quality deep energy refurbishment of the existing building stock. This includes the replacement, upgrade and adequate adaptation of the inefficient technical building systems. To improve the efficiency of EU building stock, more focus should be put on accelerating and improving the implementation of existing regulations and policies (EPBD and the related European standards, EED, Ecodesing, etc.) and on strengthening their enforcement at national level. It is important support and to ensure the compliance and quality of the national long-term renovation plans.

REHVA experts agree that the construction sector can't be changed by voluntary measures, there is need for ambitious binding targets and a mandatory regulatory framework. Experience shows that only binding targets can lead the way towards continuous development in energy efficiency, in the building sector which has always needed a strong regulatory boost before any major progress has happened. Voluntary efforts by a few forerunners have resulted in some success stories, but the vast majority has followed only the requirements set by building codes. Systematic improvements in the energy performance of buildings can only be done through binding requirements and country specific national targets.

Ensuring high indoor climate quality and energy efficiency at the same time

Buildings are built for people. The health and comfort of citizens should be provided and improved in all buildings, especially when implementing deep energy retrofit projects. Legislators dealing with building energy renovation should ensure that indoor climate quality is not compromised when improving energy performance. In the first phase of the EPBD implementation, many Member States failed to pay attention to indoor environmental quality (IEQ) which has led to severe problems in renovated buildings. It is well known that insulation and air tightness improvements as energy efficiency measures stop natural air change if controlled ventilation is not added. This may result in poor air quality (including lethal CO levels in houses with leaking gas boilers typical in central and eastern Europe), overheating and the development of mould leading to health problems and decreased productivity. Proper IEQ on the other hand has non-energy related macroeconomic benefits that legislators don't consider sufficiently when developing energy renovation related policies (e.g. lower health care costs, less productive days lost).

The current EPBD contains some references of indoor climate quality - for example when developing long-term renovation strategies - however, these are not binding requirements. The EP should promote comprehensive policies ensuring that the health and comfort of citizens is considered when improving building energy efficiency. To achieve this, policies should define minimum indoor climate and comfort criteria to be delivered when implementing energy renovation investments, especially for the most vulnerable population, like children (schools), elderly and sick persons (social care and healthcare facilities) or low-income groups (social housing).

Harmonized and ambitious application of EPB standards

The set of EPBD related EN standards are a key vehicle that helps to define and measure the energy performance of buildings. REHVA calls for strengthening the role of EN standards, and for promoting their harmonised and ambitious application in Member States to ensure that all MS require and measure similar and comparable values. [REHVA actively supports](#) the harmonisation of national calculation methodologies to ensure the quality and reliability of the energy performance assessment. It is important to compare the results of national methods to the results of the European standards' methods.

Performance, quality and financing of energy renovation

The energy renovation of the European building stock needs massive financial investment involving public and private financing. There are many public schemes financing energy renovation projects without monitoring the performance improvement and the quality of energy renovation. The EU should stop funding energy renovation projects without pre-defined and monitored performance and quality criteria. Minimum indoor climate and energy performance requirements should be included in every financial support scheme for energy refurbishment. There are good examples (e.g. KredEx in Estonia) that define technical and performance criteria for energy renovations with monitoring in place to verify whether the promised performance improvement has been achieved. These practices should be mainstreamed and applied in every public and private funding scheme.

Performance gap, BACs and technical monitoring of complex buildings

Buildings are getting more and more complex and digitalisation changes the whole industry. Digital engineering should be better exploited in ensuring energy performance of European buildings. The current EPBD made the use of building automation and control systems (BACS) mandatory for complex buildings. However, having the systems in place can't ensure alone the energy performance. Equally important as the BACS themselves is the quality management for testing the systems performance.

BACS can be used to operate a building well but are very sensitive to misuse, faults in construction/programming and faulty operation, e.g. in manual mode. They may also be used by operators to make up for construction faults in other systems by using more energy. Beyond the technical aspects, it should therefore be possible that third parties are enabled to use BACS data to evaluate operations independently from engineers, contractors and operators. This would also open the market for a much larger variety of software and services.

Third party testing relying on the data from BACS shall be a mandatory requirement for complex buildings. BACS can continuously collect and store operational data from buildings. As a basis for third party monitoring, BACS shall provide data for the systems they control in a standardized format. The objective is to be able to allow for cost effective, data-driven monitoring services. This will contribute to closing the gap between designed and in-use energy performance and significantly increase the energy efficiency potential of the European building stock.

Upskilling of professionals and independent technical assistance

To steer a successful renovation wave, Europe needs new way of cooperation among the involved sectors and more building professionals with new interdisciplinary skills. Beside the upskilling of blue-collar construction workers and technicians Europe lacks also architects, engineers and building managers who can design, construct and operate highly efficient buildings. There is a need for more coordination and harmonisation in higher education and the continuous professional development of all the involved disciplines to raise awareness and increase skill levels and develop harmonised qualification schemes for professionals dealing with energy renovation of buildings. The European PROF/TRAC project developed a [methodology to assess the skill needs](#) of the involved professions with an EU level recommendation of minimum skill levels and a qualification scheme. EU policy makers should promote the harmonisation and deployment of new qualification schemes.

Delivering the renovation wave is a common effort of different stakeholders. The success will rely also on the public and private building owners who decide about major renovation investments without being familiar with the technical, financial or project development related details. Member states must ensure independent and technology-neutral technical assistance for building owners helping them to plan and implement cost-efficient and high-quality energy renovation projects that improve the energy efficiency and indoor climate quality of buildings. There are good examples of one-stop-shop type technical assistance services, these should be further deployed and mainstreamed across Europe.

About REHVA: REHVA is The Federation of European Heating, Ventilation and Air Conditioning associations founded in 1963. We are an umbrella organization that represent over 120,000 HVAC designers, building services engineers, technicians and experts across 27 European Countries. REHVA provides its members with a strong platform for international professional networking, and knowledge exchange pursuing the vision of improving health, comfort, safety and energy efficiency in all buildings and communities. REHVA contributes to technical and professional development, follows EU policy developments and represents the interest of its members at EU level and globally.

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