

Stakeholder workshop #4 for the revision of the Energy Performance of Buildings Directive 2010/31/EU: Fostering the green & digital transitions

Answers by the European Copper Institute (ECI)

1. Smart ready buildings, enabler to improve energy performance & decarbonisation and empower citizens.

With the smart readiness indicator and the current provisions on modernisation of buildings and their technical systems:

Which smart systems seem most important for improving energy performance and other benefits (such as comfort and well-being) and achieving decarbonisation?

Part 1: the overlooked smart system is the electrical installation

The most important 'smart system' yet overlooked so far in the development of the SRI, is the (in-building) electrical installation. Pre-installed adequate in-building physical infrastructure, such as wiring and connectors, is a prerequisite for the cost-effective implementation of smart technologies at later stage. **We recommend that the "readiness" reflects the extent to which the basis infrastructure is present - following the layer hierarchy as referred to in relevant standardization documents.**

As an example: a new building that has adequate wiring and connectors for electric vehicle charging present, should be considered more "ready" than a building without, and not as suggested, categorize the two buildings on the same level (level=0) of readiness, which is not reflecting the reality of cost-effective implementation of Smart Ready Services.

Part 2: SRI should focus on the systems approach towards energy in buildings

The SRI can provide the necessary holistic approach, to 'think beyond the shell' towards technical solutions and to 'think beyond the building' towards energy system integration.

The most important smart services are those that produce very significant energy and carbon savings, facilitate the integration of distributed renewable energy sources, and through improved smartness ensures the comfort, safety, and security of occupants, such as (in order of priority):

- Heating emission control (domain Heating)
- Cooling emission control (domain Cooling)
- EV charging (domain Electric Vehicle Charging)
- Storage of locally generated electricity (domain Electricity)
- Window solar shading control (domain Dynamic Envelope)
- DER storage and DER optimization (domain Electricity)
- Smart grid integration (domain Monitoring and Control)

What is needed in the EPBD to set up SRI in the market and push the adequate technologies and solutions?

Harmonisation is key to avoid repeating the mistakes of the Energy Performance Certificates which led to a fragmentation of the EU market, created barriers for the free circulation of services (e.g. experts must be accredited in each Member State) and additional costs and administrative burden to the industry (which at the end have to be supported by EU citizens).

Some Member States are already taking steps to adopt local versions and, without the technical assistance being in place, the risk of divergence is great. We have strong concerns that national SRI schemes might differ substantially in the weighting of impact criteria in key functionalities and/or smart-ready service catalogues, which could produce incompatible national implementations.

We would like to call the European Commission and the Member States to act immediately to ensure effective, ambitious and consistent implementation of the approved SRI scheme across the EU and avoid a multiplication of local incomparable schemes.

The EPBD should therefore encourage Member States to deploy the SRI and align to the common methodology approved at the EU level as much as possible, with the same qualification of experts to build a harmonised tool and related training scheme across the EU. This would enable and facilitate analysis and comparison of the readiness level in different Member States and regions providing the basics for an inclusive and streamlined updating process.

What progressive steps are needed to implement Smart Readiness Indicators?

We recommend that the EPBD includes a clear trajectory towards the development of a Smart Readiness assessment based on measured data, as a follow-up to the check-list approach that is currently proposed.

The SRI for buildings would increase market players' trust in energy performance investments, provided that its quality can be assured and that it keeps current to the fast-evolving market of customer needs and smart technologies.

How could the EPBD strengthen the visibility of smart technologies in energy performance calculations?

ECI advises to focus future investigation on prospective interaction between EPC and SRI at the user side, including (1) how to decrease the diversion between asset based and actual energy performance of the building (using SRI to include occupant behaviour in EPC); (2) how to increase the confidence level of energy efficiency renovations and de-risk energy efficiency investments, and (3) how to increase the probability of the building to fit into the energy system of the future. We would suggest to refer to a study commissioned by ECI ([Navigant, 2018](#))

2. Building Renovation Passports

A Building Renovation Passport is a document – preferably in electronic format – outlining a long-term step-by-step renovation roadmap to achieve deep renovation for a specific building

In your views, what are the necessary elements that a European framework for the BRP should contain?

BRP is a key element to overcome operational, financial, as well as social barriers of renovation, to support building owners with personalised advice, and to ensure coordination of works during staged renovations. ECI advises as necessary elements of a European framework:

- Harmonisation at EU level is key to avoid market fragmentation and achieve required depth of renovations
- Integration of important non-energy related recommendations, like improvement of safety requirements (e.g. electrical) of buildings

- For each renovation step, provide users with an estimation of the investment AND the expected benefits (including non-energy benefits and so called 'multiple' benefits to avoid a too narrow focus on short payback terms)
- Interlinkage with EPC and SRI needed to secure holistic approach to staged, smart decarbonisation.
- Skilled professional advisors who can raise confidence in renovation by delivering custom made, staged, holistic solutions
- **Link staged, public financial support to decarbonisation plan outlined by BRPs**

What is needed in the EPBD to set up BRP?

Harmonisation is key also for BRP schemes and EPBD should encourage Member States to deploy the BRP and align to the common methodology approved at the EU level as much as possible.

Should BRP be in digital format, to follow up the entire renovation/construction process?

Yes, and linked to digital EPCs and SRI. Digitalisation would make them more dynamic and informative, with more frequent updates based on credible standards with verification. Available advanced metering and Building Automation and Control Systems allow inclusion of actual consumption data (as opposed to deemed savings approaches) following each stage of renovation, to ensure planned energy and CO₂ savings are real. Operation-based energy performance standards deliver huge energy and CO₂ savings, and provide buildings that can evolve with the needs of the energy transition.

3. E-mobility & energy flexibility fostered by building codes.

In view of the increased electrification of the transport sector and the expected role buildings can play in bringing flexibility to the energy system (from both H&C, via heat pumps and transport, via EVs)

Should the EV charging requirements be revised/improved, and how?

In 22 MS a resident needs approval of their neighbours (and/or a third party) to install a charger in their parking space and this may hinder roll-out of e-mobility, therefore it would be important to move the Right to Plug (like in Spain and soon the Netherlands) currently in the EPBD Recommendations to the directive itself by rewording of article 8.7 with "The installation of an electric vehicle recharging point for private use in the building's car park, provided that it is located in an individual garage space, will only require prior communication to the community. The cost of said installation and the corresponding electricity consumption will be fully assumed by the direct interested party(parties)."

Recent middle segment BEVs have a range of around 400 km, more than enough for daily use. With an EU average daily driven distance of 50 km, a charger of 3.7 kW will replenish the energy used during the day in less than 3 hours, preferably with lower off-peak tariffs. 18% of EU cars are used by people living in apartment buildings with a private car park.

Installation of at least V1G-ready chargers is also of key importance to control demand from EVs in buildings and minimize congestion, the consequent upgrade investments, and delays of the eMobility transition.

How can energy flexibility and energy storage in buildings be addressed in the EPBD? How could building codes be adapted?

Introduce a metric for the quantification of demand-side flexibility at building and/or district level – EPBD should avoid looking at buildings in isolation as they are at the crossroads of the electricity, heating, and transport sectors. Electrified buildings can maximise the benefits of heat and transport decarbonisation by fostering demand-side flexibility (DSF) through the provision of storage capacity, load shifting capability and integration of renewable power. They are a prerequisite to smart electrification of heat (mass deployment of heat pumps) and transport (BEVs) as the most energy and cost-efficient ways to decarbonise both sectors. A metric for the quantification of demand-side flexibility at building or district level, as a new element, could include electric (e.g. smart EV charging connected to BACS) and thermal storage capacity (water tank).

4. Data gathering & management.

In view of proper and timely monitoring and understanding of how energy is used in the building stock and its performance evolves over time, considering this is the basis for appropriate policy action:

What should be revised in the EPBD to set up and/or improve the monitoring system, where these digital data are gathered and processed?

What should be revised in the EPBD to make best use of the data collected for the purpose of the Building Stock Observatory, LTRS, EPC, local and regional planning, social surveys, cadastre, property taxation,...?

Which requirements for specific buildings data collection can be introduced in the EPBD?

Actual energy consumption data. Available advanced metering and Building Automation and Control Systems allow collection of actual consumption data (as opposed to deemed savings approaches) and make all tools (EPCs, SRI, BRPs) more dynamic and informative, with more frequent updates based on credible standards with verification.

A monitoring bonus for those end users who provide transparent and reliable real time performance data might encourage building owners to adopt performance monitoring.