In early 2018, political agreement was reached on the revised EU Energy Performance of Buildings Directive (EPBD). The latest version of the Directive aims to achieve a highly energy efficient and decarbonised building stock by 2050, and compels Member States to develop respective roadmaps, guidelines and measurable, targeted actions.

In order to garner the views on issues and challenges facing the transition, BPIE developed a survey to ask building professionals from across Europe their views on the policies and actions needed to accelerate and realise the transition to a highly energy efficient and decarbonised building stock.

In total, 71 experts responded to the online survey, which was conducted by RAND over a 6-week period in February-March 2018. Experts came from 17 different EU Member States. Nearly half of respondents represented the private sector, while a quarter were from research institutes – see Figure 1 for the full breakdown.

**A large majority of respondents support a full decarbonization of the buildings sector, while at the same time concede that the EU is not on track to achieve this goal by 2050.**
Experts recognised the need for policies to be strengthened, or additional policies to be introduced, in order to accelerate the shift towards net zero emissions. Five key policy actions, supported by at least half of the experts, were identified (Figure 3a):

- Setting ambitious minimum energy performance requirements (supported by 71% of respondents). This includes banning or phasing out solid fuel and oil boilers, as well as inefficient gas-fired boilers and appliances (Figure 3b).
- Rigorously enforcing building regulations concerning energy use (supported by 69% of respondents).
- Setting ambitious mandatory renovation targets (supported by 61% of respondents).
- Setting EU-wide net zero emission targets for new buildings (supported by 60% of respondents).
- Requiring building renovation passports for deep renovation over a period of time (supported by 56% of respondents).

Most questions took the form of a statement, to which respondents were asked to rank the extent to which they agreed (10) or disagreed (1) with that statement. In each case, respondents were given the opportunity to elucidate their position.

Over 75% of respondents strongly agreed that the EU buildings sector should be fully decarbonised well before 2050 (Figure 2a), yet the majority do not believe we are on track to achieve this goal (Figure 2b).
However, experts agreed that ambitious policies on their own are insufficient. In addition to the important role of policy makers, action is also needed by all stakeholders. Developments in the supply chain are key, from smarter construction methods to more attractive financing options and improved service models (Figure 4).

Consumers and civil society also need to play their part. Building owners in the residential, commercial and public sectors need to be motivated to improving the energy performance of their buildings in order to play a part in mitigating climate change as well as cutting air pollution.

Experts also believed that another driver for building owners is the increasing recognition that building renovation leads to increased comfort, health and wellbeing which, in the commercial sector, contributes to an increase in productivity. Perhaps surprisingly, action to tackle fuel poverty was not considered a major driver. Just over half of respondents felt it would only have a moderate role to play.

Participants in the survey were asked about the importance of addressing non-financial barriers (Figure 5). The most important issue identified was simplifying the renovation process, be that overcoming administrative complexity, bureaucracy, or simply the hassle factor. If renovation projects can be streamlined, with less disruption and completed more
The 2018 Energy Performance of Buildings Directive (EPBD) places significantly greater focus on the need for appropriate financing options in the development of renovation strategies than the previous version in the Energy Efficiency Directive. It states that Member States should facilitate mechanisms for:

- Aggregating projects, including by investment platforms,
- Reducing the perceived risk of energy efficiency investments,
- Using public funding to leverage private-sector investment,
- Guiding investments into an energy efficient public building stock,
- Promoting advisory tools such as one-stop-shops.

In order to explore these issues, experts were asked to rank the importance of a number of options for financing building renovation (Figure 6). The most important measure was found to be access to low cost finance - 69% of experts believe it has a major role to play. Interestingly, access to low cost finance was considered marginally more important than grants/subsidies (68%).

Other financing options voted for by over half of the experts were:

- Energy service companies that drive deep renovation (65% of respondents),
- No upfront cost solutions (e.g. Pay As You Save, on-tax or on-bill financing) (63%),
- Property taxation linked to energy performance (57%),
- Guarantees of performance (54%).

Conversely, the following options were only considered as having a significant role to play by less than half of the experts:

- CO₂ pricing (46%),
- Aggregators / bulk purchase schemes (43%),
- Green Bonds (28%),
- Blockchain financing systems (e.g. Bitcoin, etc.) (24%).

Another important factor was reducing performance risk – if building owners were more confident that the claimed savings would be achieved, this would be a positive measure. But almost quickly, people would be more likely to commission such works, according to 77% of experts.

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Figure 5 – How important is tackling the following non-financial barriers to improving building energy performance in the EU?

Answers collected on a scale from 1 (Will not play a role) to 10 (Will play a major role)
In order to achieve a step change in renovation activity, just over half of all experts believe that new business models and technology disruptors are key to achieving a net zero energy building stock in the EU (Figure 7). For examples of such business models, please refer to BPIE’s report “Driving transformational change in the construction value chain”.

CONCLUSION

Shifting towards an energy efficient and decarbonised EU building stock by 2050, as envisaged within the EPBD 2018, is seen by experts as an important policy objective for the EU, even though the vast majority consider that the EU is currently not on track to achieve this.

Given the complexity of the sector, there is no single solution to the issue. For new buildings, the ambition needs to be raised from “nearly zero energy” to net zero emissions and “positive energy” buildings, generating more energy than they consume, as soon as possible. However, experts see the existing building stock as being a far greater challenge. Current rates of renovation are insufficient to effect the necessary change in energy use. These need to increase by a factor of 2-3 if the existing building stock is to be renovated by 2050. Furthermore, there needs to be a shift away from shallow renovation towards comprehensive renovation, either in a single-stage deep renovation, or over a period of time, facilitated by individual building renovation roadmaps.

National renovation strategies need to map a clear path to decarbonising the existing building stock, while the European Commission needs to ensure that the new requirements are fully implemented.

Notwithstanding the revised EPBD, experts considered that stronger policies and regulatory measures resulting in
improved energy performance of buildings are needed to deliver a decarbonised building stock. Mandatory measures such as minimum performance standards, better enforcement and banning inefficient or high carbon products are considered to be among the most important actions.

A large majority of respondents also agreed that the construction sector supply chain needs to keep innovating in order to simplify, streamline and generally make renovation a more attractive proposition. This includes the provision of financing options such as low cost financing or solutions that do not require upfront finance, such as Energy Service Companies (ESCOs) or “Pay As You Save” schemes.

Whilst this survey flags up the key issues affecting the sector, further effort is required in order to develop an appropriate policy mix in a given market, and to ensure that supporting measures, financing options and engagement strategies are properly aligned to engage building owners in the transition to a decarbonised building stock.

**RECOMMENDED READING**

BPIE 2016, *Driving transformational change in the construction value chain*

BPIE 2017, *97% of buildings in the EU need to be upgraded*

Directive (EU) 2018/844, *EPBD*

iBRoad 2018, *The concept of the individual building renovation roadmap*

iBRoad 2018, *The logbook data quest*