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ADOPTION, COMPLIANCE, ENFORCEMENT
for ENERGY EFFICIENCY in BUILDINGS

Newsletter

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ECBC India

ECBC 2017 (Energy Conservation Building Code) was launched by Hon'ble Minister (IC) for Coal, Mines, NRE and Power on 19th June 2017 at Delhi and is applicable for large commercial buildings with connected load of 100 kW and above or 120 kVA and above. ECBC focuses on building envelope, mechanical systems and equipment including heating, ventilating, and air conditioning (HVAC) system, interior and exterior lighting systems, electrical system and renewable energy, and also takes into account the five climates zones (Hot Dry, Warm Humid, Temperate, Composite and Cold) present in India.

The ECBC was developed by an Expert Committee, set up by India's Bureau of Energy Efficiency, with support and guidance from United

Inside This Issue

- *Position Paper on EU Energy Efficiency Renovation Strategies*



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Position Paper 10 - EU Energy Efficiency Renovation Strategies

Energy use in buildings in Europe accounts for 35-40% of greenhouse gas emissions and the EU is dependent on imports to provide over 50% of its energy needs. Improving the energy efficiency of the existing building stock is a key energy and climate policy objective in all EU Member States, running in parallel with the drive to achieve ‘nearly zero energy buildings’ (NZEB) in building energy codes by no later than 2021, as mandated by the Energy Performance of Buildings Directive (EPBD). This is because of the predominant impact of the existing building stock, most of which will still be operational in 30 to 50 years’ time, whereas the annual rate of new building construction is typically less than 1% of the existing stock.

For the above reasons, the EU Energy Efficiency Directive of 2012 required Member State authorities to develop and publish **long term strategies for mobilising investment in ‘deep’ energy efficiency renovation of their existing building stocks** – effectively the modernisation of the building stock to be fit for purpose for the whole of the 21st century. This requirement has now been embedded in the revised EPBD of 2018 and demands a major upscaling in the volume and depth of energy efficiency renovation activity in the construction marketplace. **While newbuild construction rates in India are relatively higher than in most of the EU, the principles and rationale underlying the need for a strategy for energy efficiency renovation are equally applicable.**

The building sector in all Member States is a highly diverse and complex one, in terms of typologies, physical quality, demography, ownership and usage patterns, legal frameworks and economic circumstances. The supply chains and networks of stakeholders within the building industry are also highly complex, often weakly coordinated, with differing perspectives and priorities, and may not be well skilled to deliver on the ambitious goals required in the strategy. Indeed, the industry often does not have a strong record of successful innovation compared with other sectors.

Elements

- **Context, policy commitments and benefits**
 - EU energy and building stock status
 - Current regulatory framework
 - Multiple benefits
- **Approach to Strategy Development**
 - Key reference publication
 - Structure of this documentation
 - Developing and delivering the strategy
- **‘Tables of Contents’ & issues to be addressed**
 - Preliminary: Overview and preparation
 - Step 1: Scope and vision
 - Step 2: Stakeholder engagement
 - Step 3: Status appraisal of building stock
 - Step 4: Key barriers and challenges
 - Niche challenges

This makes the task of formulating and, more importantly, delivering a successful strategy a deeply challenging and multi-faceted one.

When developing an energy efficiency renovation strategy **series of nine steps, with each step containing a checklist indicative issues/ questions needs to be considered.** The indicative nine steps are as follows:

1. Vision and time horizon
2. Stakeholder engagement
3. Market characterisation
4. Key barriers and challenges
5. Techno-economic appraisal
6. Financing
7. Policy measures
8. Shaping the offer – growing market confidence
9. Publication and implementation.

EXAMPLES OF STRONG RENOVATION STRATEGIES

Czech Republic - The particular strengths of this strategy lie in the technical analysis of energy saving opportunities, modelling of renovation scenarios, as well as the holistic approach to identifying policies and measures to stimulate the market.

Romania - A unique feature of this strategy is in its seeking to quantify the wider benefits of building renovation. Another positive aspect is the comprehensive appraisal of policy options that need to work together to address the underlying barriers. The strategy recognises that the benefits of renovation are felt different Ministries, including for example Health, since poor quality housing has a cost to the nation in terms of lost working days and impact on health services. The policies section of the strategy recognises the importance of engaging across the political spectrum in support of the strategy for deep renovation of the building stock, including for example establishing an objective to eradicate fuel poverty through enhancing energy performance of the housing stock.

Spain – The Spanish strategy includes a good technical appraisal of the building stock and energy saving opportunities. It notes the strategic importance of building renovation and identifies the need to provide information and advice, adequate finance, and a suitably trained workforce. Specific actions that reduce bureaucratic hurdles, and help the financing of renovation measures, have been identified. Building renovation is seen as a key component of improving the economic conditions in Spain, reviving the construction sector and revitalising urban areas. Multiple benefits are identified, including the improved quality of life that flows from reduced expenditure on energy and improved indoor comfort conditions for occupants.

United Kingdom – The UK renovation strategy includes a very detailed description of the building stock and presents a useful insight into the cost-effective renovation packages that might typically be adopted in different building types. The existing policy framework is clearly set out, while the forward plan is placed in the context of the 5-yearly carbon budgets which have been specified through to 2027. Energy saving potentials and existing funding sources are identified.

France - One of the key strengths of this strategy is the Presidential-level commitment to some ambitious goals in the building sector, such as the deep renovation of 500,000 dwellings a year and the desire to introduce a mandatory renovation requirement for the non-residential sector. The three-pronged approach of supporting households, facilitating finance and increasing professionalism,

- Strategic approach to assessing feasibility
- Step 5: Techno-economic appraisal
- Step 6: Financing
- Step 7: Policy instruments
- Step 8: Packaging to gain market confidence
- Step 9: Targets, benefits, monitoring and review
- ***Stakeholder consultation and process***
 - The importance of an active role for stakeholders
 - Indicative stakeholder list
- ***Other good practice elements***
 - Techno-economic evaluation
 - Finance
 - Policies
 - Packaging solutions
- ***BPIE review of Member State strategies***

points to a coordinated effort, supported by a significant number of initiatives.

The Netherlands - The Dutch strategy is based around three key principles: informing and raising awareness; facilitating; and financial incentives. The aim is to help residents and businesses to help themselves and realise the benefits that energy renovation can bring, not only in cutting energy bills but also in terms of improved living conditions and increased property values. To stimulate this improvement in the quality of life for its citizens, the Government has identified a number of approaches that are quite innovative and with the potential to stimulate significant improvements in building energy performance. The fact that a wider Energy Agreement has been secured with a number of stakeholder bodies is encouraging.

CONCLUSIONS

All EU Member States have prepared two cycles of energy efficiency renovation strategies, typically with a timescale that extends to years 2040 or 2050. This process and its implementation over the years ahead is built on a number of the foundations laid by the EPBD.

A key focus in such strategies is the **mobilisation of the banking and investment community** to make finance available in a form suitable to the needs of building owners on an individual or collective scale. Substantial central EU wholesale finance ('Cohesion Funding') is available to partner with co-financing sources for this purpose. Associated with both the EPBD and EED, a structured dialogue has been ongoing between EU financial institutions with the support of the EU authorities aimed at unlocking this field of opportunity and led to a number of strong initiatives.

The essence of a successful ongoing renovation strategy is strong, consistent policy leadership and co-ordination with stakeholders to tackle barriers and risks, including addressing the dichotomy between longer term societal vs shorter term investor cost/ benefit.

Project Partners:



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(Cont'd from page 1) States Agency for International Development (USAID) and significant inputs from various other stakeholders such as practicing architects, consultants, educational institutions and other government organizations. The successful implementation of the code requires development of compliance procedures (compliance forms and development of field-test compliance forms and procedures), in addition to building capacity of architects/designers/builders/contractors and government official in States and Urban and Local Bodies (ULBs). It is also dependent on availability of materials and equipment that meet or exceed performance specifications specified in ECBC. The ECBC provides design norms for:

- **Building envelope, including thermal performance requirements for walls, roofs, and windows;**
- **Lighting system, including daylighting, and lamps and luminaire performance requirements;**
- **HVAC system, including energy performance of chillers and air distribution systems;**
- **Electrical system; and**
- **Water heating and pumping systems, including requirements for solar hot-water systems.**