



ADOPTION, COMPLIANCE, ENFORCEMENT
for ENERGY EFFICIENCY in BUILDINGS

Newsletter

Date Sept 2019 | Issue 9 | Position Paper 9 - EU Building Energy Certification/ Labelling

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

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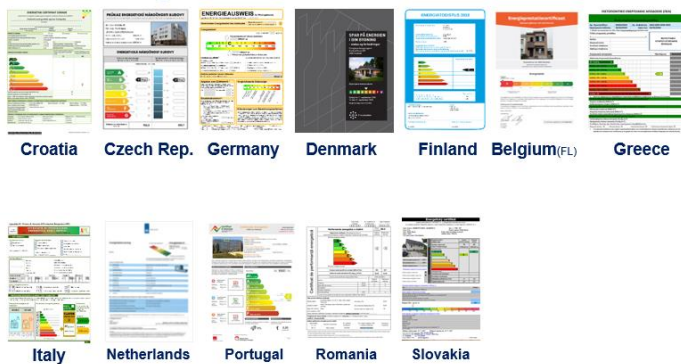
EU-INDIA
CLEAN ENERGY & CLIMATE PARTNERSHIP

Position Paper 9 - EU Building Energy Certification/ Labelling

The two primary requirements to be implemented by Member States under the EU Energy Performance of Buildings Directive (EPBD) are (1) **mandatory review and strengthening of energy performance standards of the building code** and (2) **mandatory establishment of building energy labelling**, in the form of energy performance certification (EPC) as a visible presence in the construction and property marketplace. All EU Member States have implemented these requirements, including establishing extensive EPC systems for both new and existing residential and non-residential buildings. **This Position Paper highlights the features and good practice ingredients of the most successful EPC systems applied in the EU since their introduction in 2006, which would apply equally in India's circumstances.**

Based on the successful concept of energy labelling of energy using appliances, EPCs have the key feature of providing a visible indication of the comparative energy performance between different buildings being considered for purchase or rental. As such, it empowers consumers and all other players in the construction and property sector with awareness and objective information to help to inform their construction, purchase and rental decisions.

Examples of the variety of design formats for EPCs in Europe



The most successful implementation of EPC has been founded on a philosophy that certification is a positive instrument of national energy policy aimed at driving and

Elements

- *The EPBD requirements for EPCs*
- *Rationale*
- *Energy performance certification process*
 - Guiding principles in EPC scheme implementation
 - Overview of development process for EPCs
 - Delivery of EPC service
 - Basis and format of EPC
 - Energy performance assessment
 - Issuance of building certificates
 - Communicating through EPC labels
 - Cost of EPCs
- *Delivering effective EPC systems – a roadmap*
- *Stage 1: Planning*
 - Define the terms of reference
 - Establish the policy framework and action plan

assisting market choice and market transformation. This meant putting in place strong legislative, technical, administrative and promotional systems to establish certification as an effective market stimulus to achieve energy savings. An EPC label is meaningful only if its content is clear and its timing of delivery can impact the choices made by owners and prospective purchasers/tenants; it needs to be available in advance of a decision to purchase or rent. The alternative option of a simplistic approach would have led to a weak certification process that was seen as an ineffective and bureaucratic “paper exercise” that was a cost burden in the construction and property marketplace without superior benefits.

The credibility, power and ultimate cost-effectiveness of EPCs depends on them being based on well coordinated systems using best practice information and communications technologies. This includes: robust assessment methods, being delivered using validated assessment procedures appropriate to the complexity of the building, by a strong cadre of trained competent professionals, being administered efficiently through a consistent, well integrated system with quality assurance

procedures, and having widespread visibility and ‘currency’ in the marketplace. Under the EPBD, the EPC system applied to both new and existing buildings and is mandatory (although at least three EU countries had operational EPC systems prior to the EPBD). **EPC is often most effective when complemented with other initiatives that support energy efficiency.** Portugal, Ireland and Denmark are among the prominent examples of EU Member States with such systems.

EPC systems can help to achieve national energy targets and enhance environmental, social and economic sustainability in the building sector. Direct benefits associated with building certification schemes include: energy and CO2 emissions reductions and broader environmental benefits; increased public awareness of energy and environmental issues; lower costs for users; and improved data on buildings, which can be used for future policy development to further improve energy efficiency in the building stock.

CONCLUSIONS

Based on EU experiences, the following is a summary of the key stages and elements that lead to the development and implementation of a successful EPC system for buildings:

- **Plan:** define the terms of reference for the EPC scheme, and develop an appropriate policy framework and action plan; engage multiple actors, allocate sufficient resources and communicate often with all stakeholders.
- **Implement:** provide for training and support to ensure well-qualified building assessors; raise awareness of the EPC scheme in industry and among the public; ensure efficient operation of systems for central collection, review and dissemination of data.
- **Monitor and Evaluate:** establish quality control mechanisms to monitor performance of the EPC scheme and of EPC assessors (and provide support for assessors); communicate results openly to relevant stakeholders; analyse whether the scheme is achieving its goals and adjust as needed to increase impact; consider expanding the scheme to include environmental issues and assess its

- Secure the necessary resources
- **Stage 2: Implementing**
 - Provide for training and examination
 - Databases of EPCs
 - Raise awareness
 - Collect, review and disseminate data
- **Stage 3: Monitoring, Evaluation, Improvement**
 - Assess quality and compliance
 - Communicate the results openly
 - Evaluate the scheme continuously
 - Adapt the scheme as needed
- **Elements of an integrated EPC system**
- **Databases and profiles of EPCs**
- **Market presence and impact**
 - Mandatory energy certification with market visibility
 - New concepts, tools, skills and innovation
 - Using complementary measures to increase impact

effectiveness in relation to supporting (and being supported by) other policy measure

Finally, a further consideration is the need to ensure that EPC schemes are ‘future proofed’ through being adaptable enough to evolve with potential developments in the future.

Upcoming

4th Regional Workshop & 2nd National Workshop to Implement ECBC in India

Udaipur, October 2019

Project Partners:



EXERGIA Energy &
Environment
Consultants



PricewaterhouseCoopers
Private Limited India



Center for
Environmental Planning
and Technology
University (CEPT)

Main Beneficiary:



Bureau of Energy
Efficiency (BEE),
Government of India,
Ministry of Energy

(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.**