ADOPTION, COMPLIANCE, ENFORCEMENT for ENERGY EFFICIENCY in BUILDINGS

Newsletter

Date Dec 2018 | Issue 2 | Position Paper 2 - State Action Plans for the EPBD and their implementation

ECBC India

ECBC 2017 (Energy Conservation Building Code) was launched by Hon'ble Minister (IC) for Coal, Mines, NRE and Power on 19thJune, 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

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Position Paper 2 - State Action Plans for the EPBD and their implementation

The EU Energy Performance of Buildings Directive, or EPBD, was published in 2002 and formally came into force in 2003 across all EU Member States. Legal transposition and practical implementation across Europe mainly took place between 2006 and 2009. The Directive was 'recast' in 2010, with various reinforcing amendments which were implemented since 2011.

The approaches and experiences of EU Member States in implementing the various requirements in the EPBD have varied widely. This position paper therefore selects and highlights what are considered to be among the best practice approaches, levels of ambition, systems and experiences implemented in particular EU Member States in relation to the provisions of the EPBD most relevant to building energy code (ECBC) implementation in India. These relate to their governance, action planning, consultations, legal adoption, technical methodologies and systems development, capacity building, administrative systems development, certification, enforcement, promotion and incentivisation.

The paper is centred around two key planning tools, and their implementation at Member State level – namely Action Plans adopted in 2004 - 2006 in relation to the provisions in the original EPBD, and the 'Nearly Zero Energy Buildings' (NZEB) Roadmaps first published in 2012- 2015 to meet a requirement in the recast EPBD. It indicates the nature and sequence of the tasks, responsibilities and relative timetables contained within these plans and summarises the main features of their implementation.

It is not the intent of this position paper to comprehensively address all aspects of the EPBD Action Plan implementation. Rather, it provides an overview and foretaste of aspects of the implementation process that are considered most relevant to implementation of the ECBC in India, with reference to a sample of good practice examples from the EU. Fuller details on those various key steps and good practice elements of Action Plan implementation will be elaborated in the position papers to follow in this series.

Elements

Context and challenge of EPBD implementation

- Legal and market context for transposing and implementing the EPBD
- Key requirements of the EPBD
- EPBD implementation: A four stage process

Adoption

- Institutional arrangements at Member State level
- Overall governance at EU level and links to Member State level
- Guiding principles in EPBD implementation
- Action Plan elements: tasks, responsibilities and timetable
- Stakeholder and wider public consultation and information campaigns
- Regulatory Impact Assessment
- Developing and enacting the transposing legislation

Compliance

- Overview of technical systems development
- Role of EN standards
- Calculation methodologies and software
- Cost optimal methodology and studies

OVERALL IMPACTS

The principal impacts arising from implementation of the EPBD in general are:

- The beginning of a significant deep contribution by the building sector to reducing operational energy consumption, costs and associated greenhouse gas emissions, as well as energy security, in EU Member States;
- Creation of widespread market visibility and awareness of the energy performance of buildings;
- Expected stimulation of demand, by consumers, progressive developers (private, public or social) and specifiers, for more energy efficient and renewable energy products and services in buildings – both new and existing;
- The introduction of energy performance as an integral requirement (and a new level of complexity) within the building design, specification, procurement and marketing processes;
- Potential impact on property pricing, depending on other market conditions;

- Consequent growing interest in the construction and property sector in many countries in going beyond the minimum standards or seeking to undertake energy-saving refurbishment of the existing building stock;
- Providing a platform for national strategies aimed at mobilising major investment in the deep energy renovation of the existing building stock;
- Increased impetus to innovation (to improve both quality and cost efficiency) by building designers, developers, and other product and service providers, and advancing the learning curve in the construction sector, which has sometimes struggled to adapt in the past;
- Associated upskilling of other service providers within the building industry;
- Consequential demand for enhanced foundational and supplementary education and training providers;
- Provision of a formal obligation for periodic review of certain regulatory requirements, as part of a clear policy path to 'nearly zero' (or better) energy buildings.

KEY SUCCESS FACTORS IN IMPLEMENTATION

The best practice ingredients in the formulation and implementation of an EPBD Action Plan or NZEB roadmap can be summarised as follows:

- Leadership and commitment, and publication of a clear action plan/ roadmap for implementation;
- Consultation and consensus on both legislative and operational details;
- Coordinated structures, clear responsibilities (compliance chain);
- Clear and realistic targets, timetables, tasks and responsibilities;
- Allied strategic policy activities (e.g. demonstration projects for NZEBs) within Member States to help build confidence and capacity, and help deliver on targets;
- Technical criteria based on robust evidence – from research, market trials, international experience;
- Coordinated training programme to ensure sufficient numbers of qualified practising professionals upskilled;
- Tools – good quality support documentation and software tools which are validated and compatible with the official administrative systems software;

- EP targets: Setting of energy performance requirements
- EP certification
- Databases of EP compliance and EP certificates
- Training & Examination
- Codes of conduct
- Licensing and registration systems
- The roadmap to NZEB

Enforcement

- Context, compliance mechanism, and legal authority for enforcement
- Responsibility for compliance
- Systems for monitoring and verifying compliance – QA strategies
- Databases and registers
- Compliance levels
- Penalty framework

Leverage

- Promotion, knowledge sharing and good practice guidance
- Market visibility of EPCs
- Role of industry
- Skills development and technical support
- Energy efficiency renovation of buildings
- Finance – market instruments

- Investment in on-line databases and smart administrative systems (with a self-sustaining business model enabling frequent upgrading) to enable monitoring, verification, enforcement and providing a platform for guiding future initiatives and strategies;
- Well-designed and coordinated monitoring, validation, quality assurance and enforcement systems;
- Sustained communication campaigns through multiple channels – with the industry and the general public (including political representatives);
- Active collaboration and sharing of best practice implementation experiences among Member States, through the EPBD Concerted Action.

Eastern Regional Workshop to Implement ECBC in India

Bihar, October 30, 2018

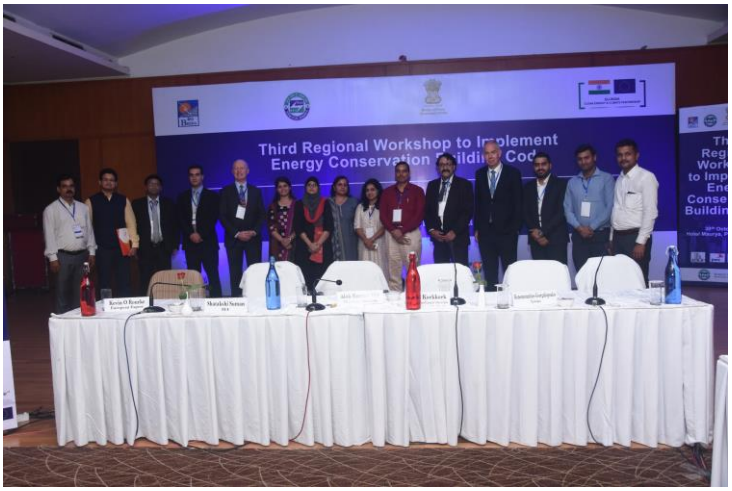
3rd Regional Level Workshop on ECBC for Eastern Region of India, 30th of October 2018

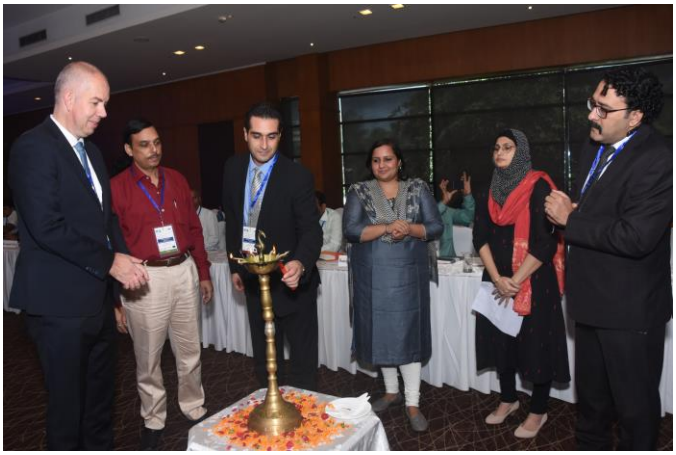
The third regional workshop was held in Patna, Bihar on the 30th of October 2018. The objective was to create a forum for different states/stakeholders to share their experiences in adopting/implementing ECBC in their states.

The overall objectives of the workshop were:

- *Notified states to present the status of ECBC implementation in their states;*
- *To discuss the status of various policy instruments like integration of ECBC in bye-laws, building approval process and schedule of rates (SOR);*
- *To present an efficient operational mechanism to implement ECBC in the state;*
- *To increase the capacity of various stakeholders and professionals in the states;*
- *To discuss on various market instruments required for the implementation of ECBC;*
- *To present success stories/lessons learnt in various states;*
- *To discuss on challenges/drivers for ECBC implementation.*

Photos from the 3rd Regional Level Workshop





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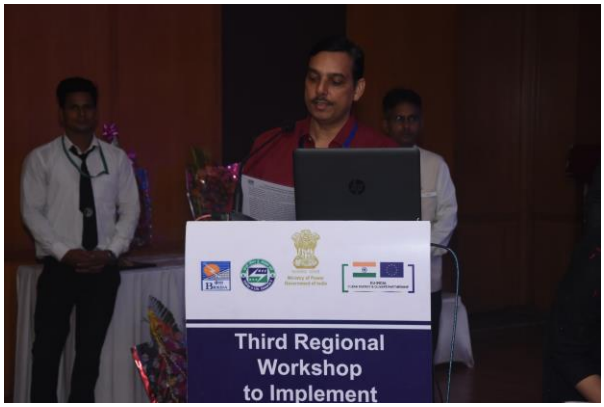

3rd Regional Level Workshop on ECBC for Eastern Region of India, 30th of October 2018

Key outcomes

- BREDA ensured to get the ECBC notified in Bihar by December 2018
- ECBC cell needs to work closely with the Department of Urban development and housing
- ECBC cell needs to define a training calendar in consultation with UDD and municipal corporations for conducting awareness and capacity building programs
- The building construction department showed interest in demonstrating ECBC in their upcoming projects. ECBC cell will be in regular touch with them to have a project as demonstration of ECBC

Project Partners:

eXergia	EXERGIA Energy & Environment Consultants
pwc	PricewaterhouseCoopers Private Limited India
CEPT UNIVERSITY	Center for Environmental Planning and Technology University (CEPT)

Main Beneficiary:

BEE	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*