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 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

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Position Paper 3 - The process of transposition / notification of building energy codes into national legislation

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 ('notification' in India's States) 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.

An early focus of EU Member State authorities was on meeting the deadlines set for transposing the provisions of the Directive into national law. A feature of good practice implementation was that this transposition process, led by the relevant authorities, needed to be accompanied, and in some cases preceded, by significant stakeholder consultation and communication, techno-economic studies, the development of technical tools and systems, administrative systems, and capacity development among building industry players and enforcement authorities. All of these ingredients have been necessary to be in place in order to make the legislation operative and effective in the building industry sector.

The approaches and experiences of EU Member States in the legal transposition process, and in consequential implementation of the various requirements in the EPBD, have varied widely. This arose from a combination of factors – differing legal frameworks and traditions, in some cases regional devolution of powers, etc. However, focusing on those elements of legal transposition that are relevant to the ECBC, the fact that almost **all EU countries had some form of building energy code in place prior to the Directive** generally meant that the legislative changes involved tended to be incremental rather than radical. **Only in a small number of countries has the building energy code been a standalone code separate from the other aspects of the building code**. In most Member States, a strategically prudent approach has meant that although the technical energy performance requirements and changes prescribed in the documentation referenced in the formal legislation may be complex, the legislative text itself has tended to have limited technical content.

Elements

- ***Evolution, context, approach and structure to enacting building energy codes***

- Evolution, scope and pre-existing status of building codes in EU Member States
- Pre-existing legislative configuration of building energy codes in EU Member States
- Other diversities
- Format of pre-EPBD building energy codes in EU Member States
- EU background and policy focus

Obligations of Member States on building energy codes and roadmaps to NZEB

- Key requirements of the EPBD
- Process and timetable for implementing and progress reporting on the EPBD

- ***Coordination, planning, resourcing and consultation process – precursors to legal enactment***

- Overview of the process
- Governance: co-ordination hub
- Action plan or roadmap
- Preparatory studies and projects

This hierarchy of documents is described in this paper, which also summarises the typical step by step process involved in achieving legislative transposition/ notification of the requirements set in the EPBD. Since the UK legal system and that applied in countries subject to British rule in the past is the European system most closely aligned with that of India, many of the examples of approaches and configurations of legal transposition and other accompanying documentation are drawn from the experiences of those countries.

A significant accompanying measure in the legislative process was the introduction of the new concept of mandatory energy performance certification (EPC) or labelling, including the systems for market players to achieve compliance and the roles of the authorities assigned to enforce compliance. Here a further beneficial approach was to set a clear implementation timetable which typically included up to three phases of introduction of mandatory EPC on the path to full implementation.

LESSONS LEARNT FROM THE EU EXPERIENCE

- Prior to the issuing of the EPBD, energy performance competencies and improvement trends over time had varied significantly from EU Member State to Member State. This reflects differing historical experiences, legal and institutional systems, climate, tools, skills and overall state of market development with regard to energy efficiency.
- **Success required a structured and systematic plan issued at an early point, involving a substantial series of steps and accompanying support actions**. This gave advance signals to all responsible and affected parties with a clear roadmap to legislative enactment, and hence enabled market readiness on the part of building owners, professionals, industry, trainers and enforcers. Thus, close coordination between key institutions, and an active ongoing consultation process with stakeholders was required at all stages.
- **Delivery to meet the timelines set in the Directive has required an extensive range of tasks**. Across different EU Member States these have included: commissioned studies, technical methodology and software development, specifying training requirements, registering energy certification professionals, design, development and operation of full administration system, including quality assurance system, promotion of the scheme and significant on-line and outsourced resources.
- The new building energy codes (and associated energy performance certification) introduced a new level of stringency and complexity within the building design, specification, procurement and marketing processes. **Transposition and implementation of the requirements in the EPBD involved common principles across Member States**, for example broad alignment with EU standards and deployment of the mandatory cost optimal methodology. But for reasons outlined above, the regulatory structures, documentation, performance levels and regimes differed in detail. However, all used a performance-based approach (which may be supplemented by prescriptive requirements) relative to a 'reference' building.

- Stakeholder consultations
- EU Commission guidance and resources
- Cost optimal analysis / Regulatory Impact Assessment
- Human and financial resourcing
- Decisions on assigning obligations, functions, powers, resources
- Establishment of administrative and data systems

  - ***Essential accompaniments to legal enactment process – tools, people, systems***

- Vital parallel chain of actions
- Technical standards development – role of European standards
- Calculation methods - software
- Research, development and pilot projects
- Setting of energy performance targets
- Training & examinations
- Licensing and registration systems
- Energy performance certification (labelling)

  - ***The process of transposing the EPBD into national member state legislation***

- Legal context of EU Member States
- Legislative drafting journey
- Structure: Overall suite of documents and tools
- The content of the primary legislation

- The legislative instruments used by EU Member States to transpose the EPBD requirements have varied according to pre-existing legislative frameworks and traditions in relation to building codes, energy legislation and adoption of EU legislation. It is beneficial if the Member State already has a relatively standardised legal procedure
- Finally, it is beneficial to structure and formulate the building energy code requirements and supporting documentation in a manner which is relatively 'future proofed', allowing easy incremental amendment in the direction of more and more ambitious energy performance levels. In an EU context, this has been particularly important given the EPBD obligation for at least a five-yearly review of energy performance requirement levels, as part of a clear policy path to 'nearly zero' (NZEB, or better) energy buildings.

- **Key elements** in the legislative text typically include: definitions, connections to previous legislation, specification of performance targets, calculation methods, assignment of obligations on building owners or their agents, assignment of functions and powers in administration and enforcement, registration of qualified persons or organisations, specification of procedures for compliance, documentation requirements, penalty systems and key reference documents. Typically, legislation has been developed on a national basis, but in a small number of cases it has been also on a regional basis. In general, administrative oversight of the EP and EPC requirements has been assigned to a Ministry or energy agency and the enforcement powers have been assigned to local authorities.
- An associated important need is for Government to authorise the financial and human resourcing of the assigned authorities to enable the development and operation of the necessary administrative and enforcement processes and associated IT systems, and to enable ongoing promotion and systems development.
- **The primary legislative text is normally accompanied by development and publication of technical guidance documents and other support documents**, e.g. codes of practice, databases of product performance (boilers, HVAC, motors, lighting, etc.), guidance documents on solar, external insulation certification. This may possibly extend to include new developments such as databases pertaining to the EU Construction Products Regulations, Environmental Product Declarations, etc. In some countries, the technical guidance document may be termed 'rules' and/or be embedded in secondary legislation.

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***
- ***Water heating and pumping systems, including requirements for solar hot-water systems.***