UNDP-GEF-BEE Project on Energy Efficiency Improvements in Commercial Buildings

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United Nations Development Programme

Empowered Lives Resilient Nations

Present Status of ECBC

- Energy Conservation Building Code (ECBC) launched by BEE for commercial buildings (100kW).
- The National Building Code (NBC), developed by the BIS provides general guidelines on energy use, does not prescribe performance / consumption limits
- BEE's has developed a star rating program for existing buildings based on the actual performance of a building by measuring specific energy usage in kWh /sq m/ year.
- BEE has initiated an energy rating programme for window facades, insulation to benchmark energy performance of building elements
- Buildings energy performance benchmarking tools developed e.g. – ECOnirman, ECObench

Barriers to ECBC implementation

Awareness Barrier

- General lack of awareness on the benefits of efficient buildings
- Important to monitor performance to assess impact of the code at the building, portfolio, and market levels etc. and disseminate success stories

Capacity and Technical Barriers

- Lack of knowledge of Designers/Architects to analyze designs based on ECBC
- Inadequate capabilities of agencies that will be implementing ECBC
- Building industry not geared to apply ECBC requirements on a commercial basis

Financial Barriers

- Lack of instruments promoting EE products/services such as duty waiver, tax exemption
- Asymmetry in sharing of costs and benefits between developers, owner and tenant

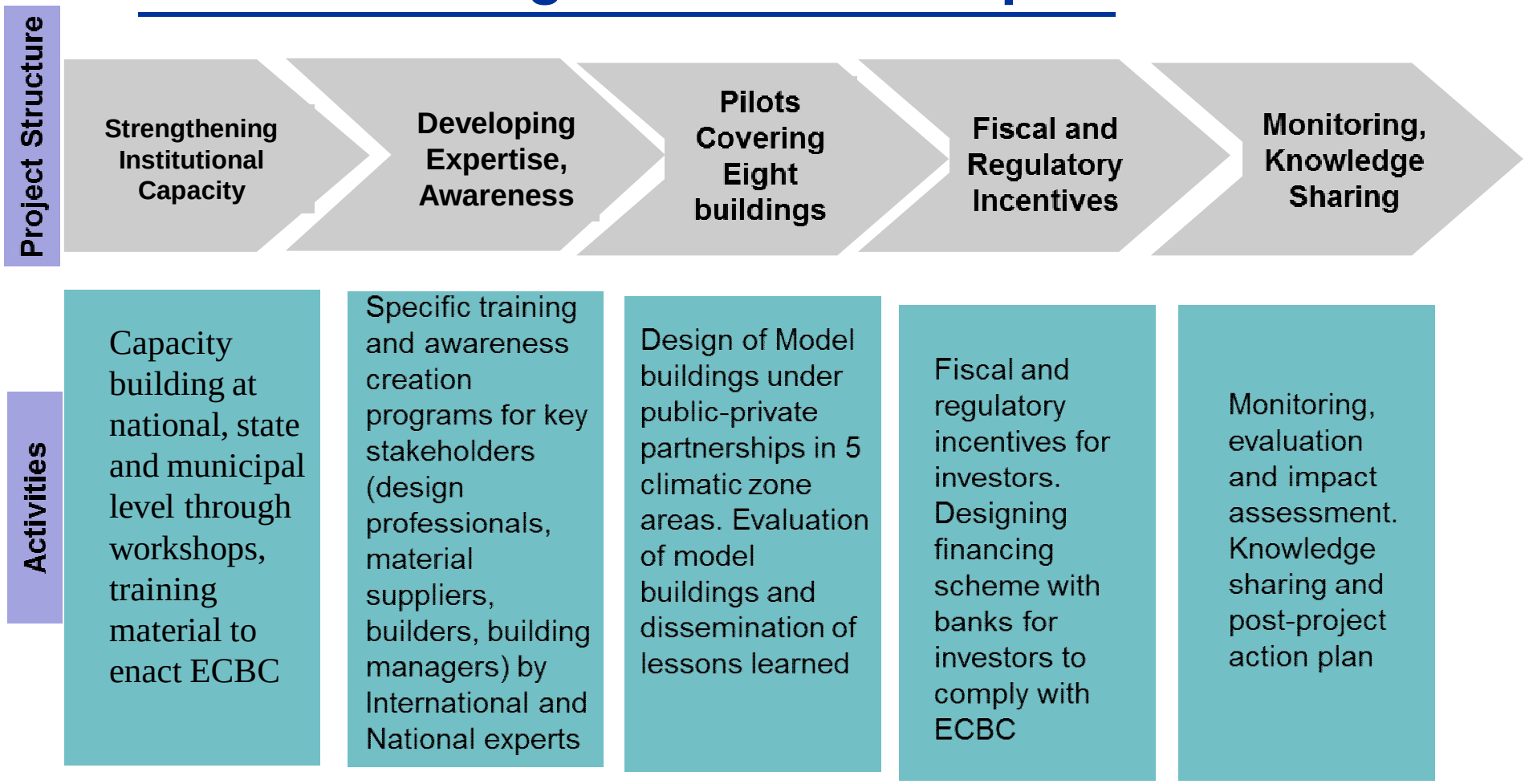
Institutional Barriers

- No defined mechanism in states to make ECBC mandatory
- EC Act empowers states to amend ECBC to suit local climatic conditions May lead to large deviations in the ECBC. May create confusion among developers and designers

UNDP GEF Project- Energy Efficiency Improvement in commercial buildings

- Energy Efficiency Improvements in Commercial Buildings project in India receives a GEF grant of US$ 5.2 million with a co-finance of US$ 15.8 million
- The Project is a part of the “Programmatic framework Project for commercial buildings”
- Nodal Agency- Ministry of Environment and Forest(MoEF)
- The goal is “reduction of GHG emission for new commercial buildings through compliance with ECBC”.

GEF-BEE funding under this program aims to strengthen ECBC adoption



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Project partners

Project Implementation:

BEE

Project Assurance:

UNDP-GEF

Project partners	Finances (in USD)
GEF (UNDP)	5,200,000
Government (BEE)	2,976,596
SDC	1,787,234
DLF	11,063,830
Total	21,027,660

Project Outcomes

- Program will support faster ECBC transition from voluntary to mandatory
- Support stakeholders through comprehensive technical assistance, capacity building, awareness generation and easy access to information
- Program will help to develop incentives schemes to adopt energy efficient designs in buildings for scalable adoption
- Promote the establishment of new testing laboratories and up-gradation of existing ones to certify products as per ECBC requirements

Project Outcomes

- Disseminate information on best energy efficiency practices available globally and presenting financial savings to developers and building owners through structured demonstration
- Promote demand for more energy efficient buildings through extensive consumer education and increasing availability of relevant information
- Program may also come out with findings for mandating ECBC to existing buildings

Project Components and key activities/targets

Project Components	Some key activities/targets
1. Institutional capacity buildings	50 Municipal bodies/SNAs adopt policy to promote ECBC and other EE programmes; 30 of them provide dedicated resources •About 750 participants from national, state and local governments participate to learn ECBC implementation & enforcement. 20 states carry out mandatory ECBC implementation. •Make a online database functional and energy audit reports (about 1000 buildings covered in database) information is available. This helps in benchmark information of EE. •50 to 100 accredited local authorities to validate and verify mandatory commercial buildings compliance with ECBC.

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2. Technical capacity development	•1500 architects, energy auditors, design professionals, developers, contractors, building material suppliers trained •2500 building practitioners start using design software for EE in buildings •1000 accredited building energy auditors, energy audit firms and ESCOs by EOP •At least 5 course curricula and modules on ECBC developed and academic institutions like CEPT, IITs, IIMs use them •Training tools like, Handbook on EE buildings design published, guidelines with improved and expanded architectural guidance developed, software package for EE building design developed, market study report detailing the building materials and sale of energy efficient materials •Capacities of 5 existing labs to conduct R&D on EE building material enhance, and they become NABL compliant.

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3. ECBC Compliance Demonstrations	•Preparation of detailed technical and financial feasibiliy studies for all 8 model pilot demonstrations in compliance •Finalised and approved designs of energy efficiency model buildings •Piloting construction of energy efficiency model buildings •Evaluation of the energy performance of the model buildings and documentation of the lessons learned

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4. Fiscal and regulatory incentives for investors	• Design of rebate and tariff discount scheme in coordination with regulators and utilities, including the implementation rules and regulations, budget and plan • Design of tax incentives for the promotion and application of energy efficient materials, equipment and technology, including the implementation plan, rules and regulations, and budget. • Compilation and dissemination of information on existing financing schemes • Discussion on the design of new loan schemes with financial institutions and/or guarantee schemes with ESCOs • Involving interested financial institutions in the design of financing schemes for EE building projects and inviting participation of financial institutions in the awareness raising workshops

Objective of Demo Projects

- Facilitate implementation of pilot ECBC demonstration projects in the 5 climatic zones
- **The state is requested to send proposals for at least 3 building typologies out of 5.**
- Objective is to highlight the more efficient designs in the construction of buildings and the use of energy efficient materials and products.
- Support the design and construction a number of buildings in a sufficient number of climatic zone
- Provide technical assistance in the selection, planning, design, modeling, formulation of construction documents and commissioning as well as construction, monitoring and evaluation of model buildings.

Selection of buildings under DEMO projects

The model buildings will be identified in all the 5 climatic zones in the following categories of buildings:

	Number of Demos
Hotels	1
Office Buildings	2
Shopping malls	2
Institutes and IT parks	2
Hospitals and Institutional care	1

Selection of buildings under DEMO projects

- Building should be at the concept/schematic design stage.
- Large public buildings with demonstrative multiplying effect in the state.
- Areas between 10,000 m^2 and 30,000 m^2
- Centrally air-conditioned and having a connected load of 100kW and above or contract demand of 120 kVA.
- Preference would be given to owner-occupied buildings.

*The construction of the selected projects should commence in 2013.

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If you have any question, please
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