

The European Union's Programme for India

The Role of ACE: E² Project and its Status

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Project implemented by
EXERGIA S.A. member of **SACO**
Consortium, in collaboration with
PwC India

CECI's 3rd Specific Assignment : **Our** Assignment

- ❑ **Title:** Legal and policy support to the development and implementation of **Energy Efficiency legislation for the building sector (ECBC)** in India.
- ❑ **Acronym:** ACE: E²
- ❑ **Beneficiary:** The Bureau of Energy Efficiency
- ❑ **Implementation period:** Jan 2016 – June 2019
- ❑ **Financing:** EU-funded Programme

Main Task:

Assist implementation of Energy Efficiency (EE) legislation (Energy Conservation Building Code - ECBC scheme) in 4 selected States, as MH, MP, BH, OD and wide dissemination of results to all India.



Task 1: Support to the development of EE legislation for Building sector in India

The Consulting Team (Exergia GR & PwC India):

- ❑ Assists the 4 selected States towards Energy Conservation Building Code, ECBC:
 - Adoption
 - Compliance
 - Enforcement

- ❑ Provides legal and policy support to BEE and the 4 States for further promotion of EE in the building sector across India, using:
 - Lessons learnt and [EU best policy practices](#)
 - [Know-how transfer](#) on EU Regulations, standards and technologies
 - The experience gained from previous work in the 4 States



Task 1: Streamline of activities

National level coordination activities

- Establishment of permanent communication /collaboration system between BEE, SDAs, and the Project
- Project website and knowledge sharing and communication platform
- Legal and policy support / EU best practices etc.
- Define the structure for a Reporting Database for ECBC compliance and energy performance
- Participation in national events
- Recommendations for further Technical Assistance

ECBC Implementation in four States

ECBC Adoption

- Technical adaptation/legal drafting of State-ECBCs
- Integration of ECBC provisions within the building regulations
- Support to State authorities during public consultations and towards issuance of notifications

ECBC Compliance

- State ECBC Guide
- Mechanism for compliance processes, certification of verifiers, etc.
- Documentation on ECBC compliance (templates, work flowcharts, check lists, calculation methodologies, technical specifications, certification requirements for materials and works, etc.)
- Design, cost-benefit analyses etc. for demo projects / monitoring during the project duration

ECBC Enforcement

- Development of ECBC & retrofitting action plans.
- Assisting the SDAs with monitoring & reporting of the ECBC & retrofitting projects
- Define the structure for a Reporting Database for ECBC compliance and energy performance at State level.

Capacity Building /Sustainability

- Setting-up of ECBC cells and internal training
- **On-the job training (continuous activity)**
- Training courses to local level administrators on ECBC compliance
- Training of trainers of ECBC professionals / follow up training actions
- Use the demo projects for capacity building
- **Project exit strategy / implementation**

Public Acceptance

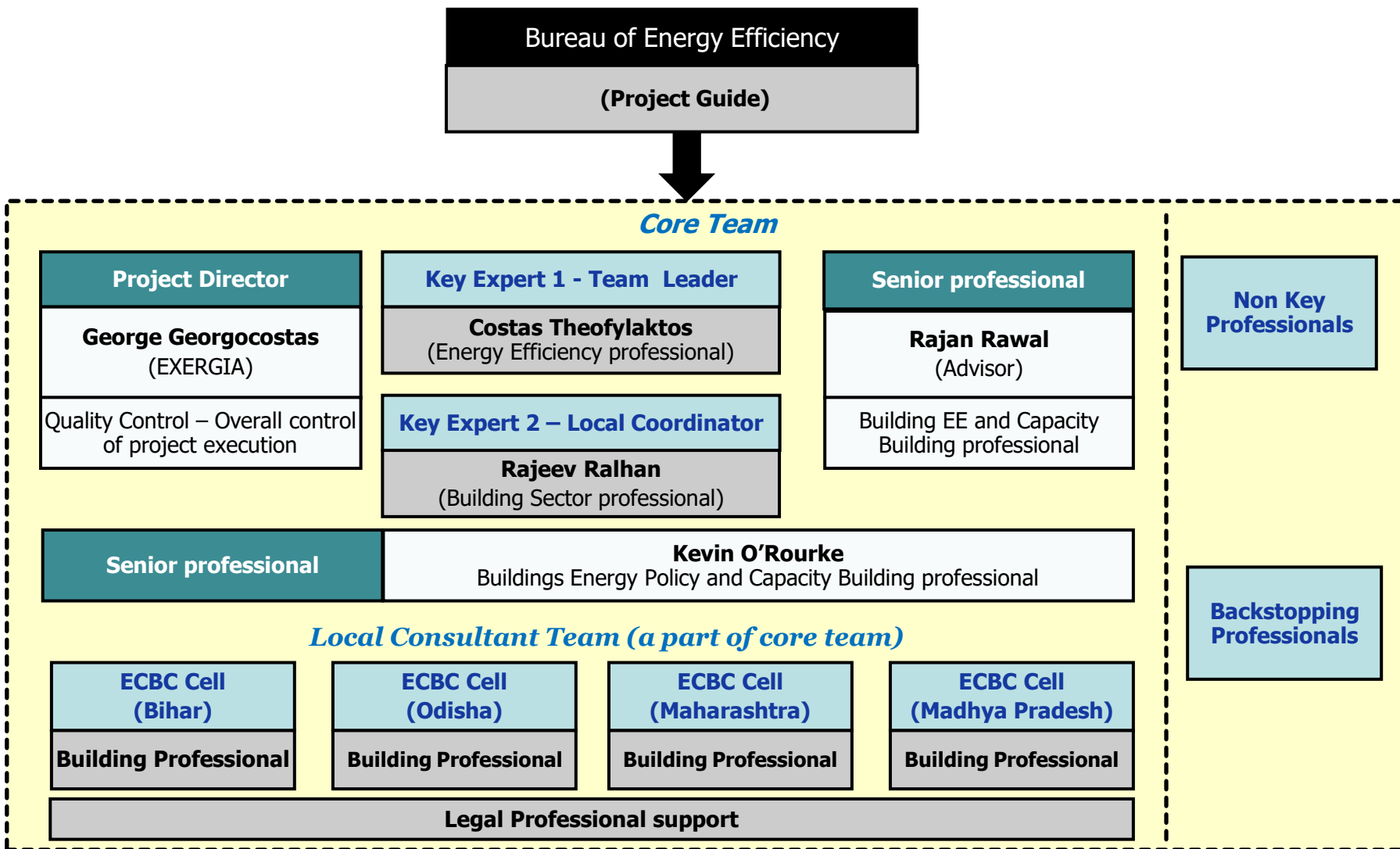
- ECBC Communication Strategy and action plan
- Implementation of communication actions with SDAs
- High publicity of demo projects
- Workshops, meetings, events
- Facilitate India-EU business development cooperation at State level

The key challenges – At Start and Now (18 mo. after)

Challenge Task	At start	Today
Gain commitment and involvement of State Authorities and local stakeholders	At stake	V
Support decision makers in their efforts to adopt ECBC	?	V
Support development of institutional framework and capacities to enable compliance and enforcement ECBC	?	V

These, and many more, challenges have been faced in the EU, in the past 30 years. Lessons learnt could be useful for India.

Project Team



The four States involved – The Stakeholders involved

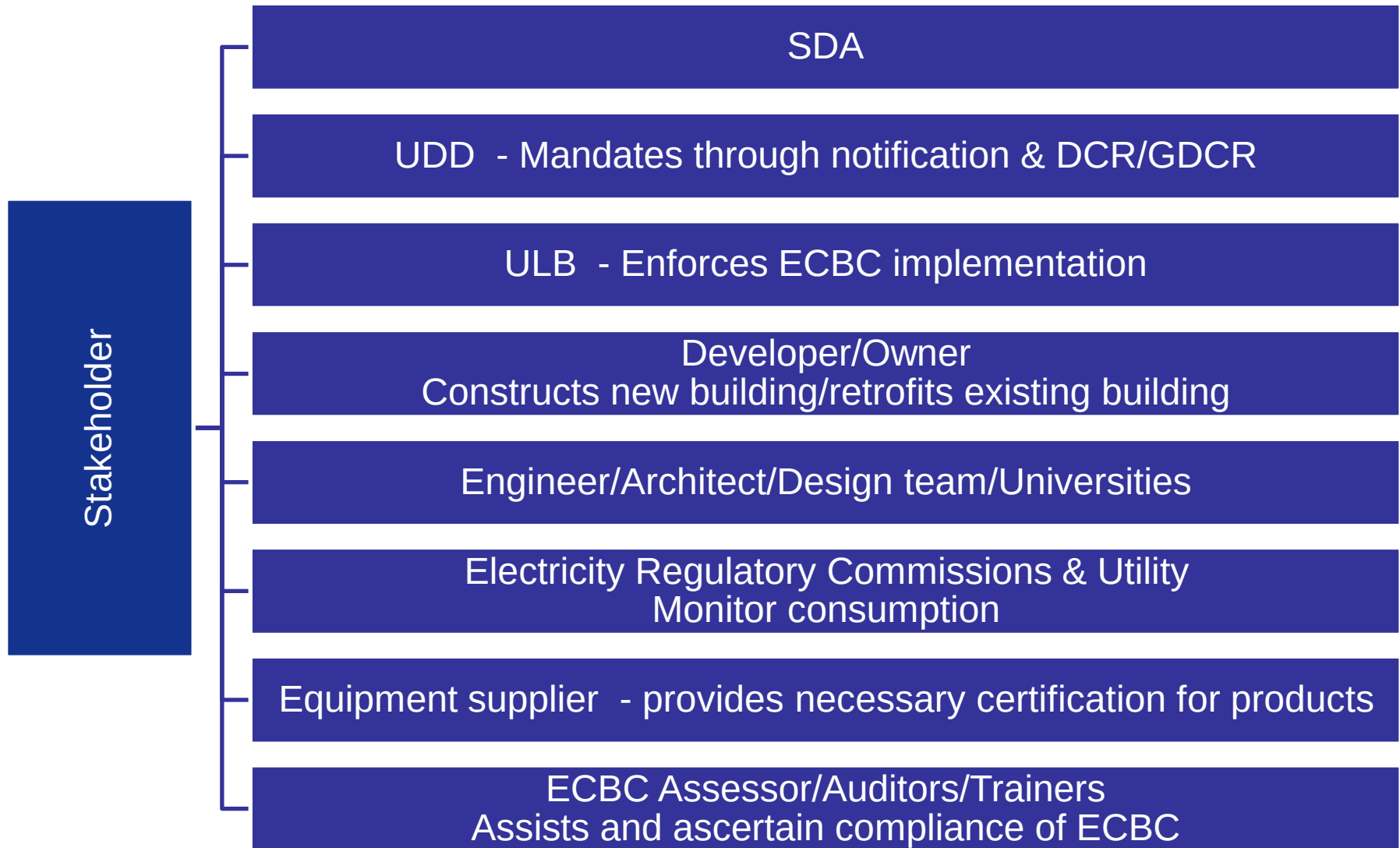
STATES

- Maharashtra
- Madhya Pradesh
- Odisha
- Bihar

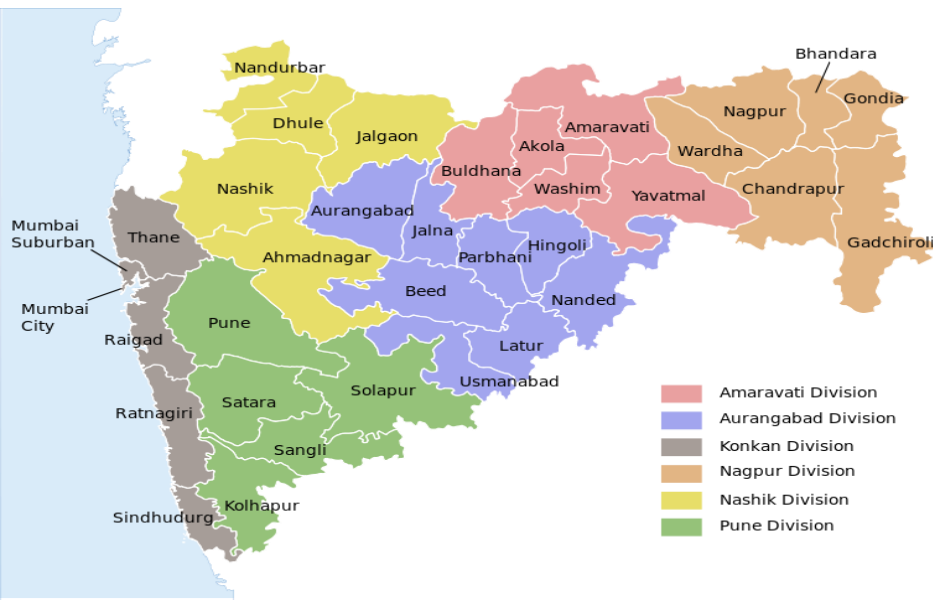
BENEFICIARIES

- MEDA
- MPUVNL
- BDA
- BREDA

Our understanding on relevant stakeholders in the state

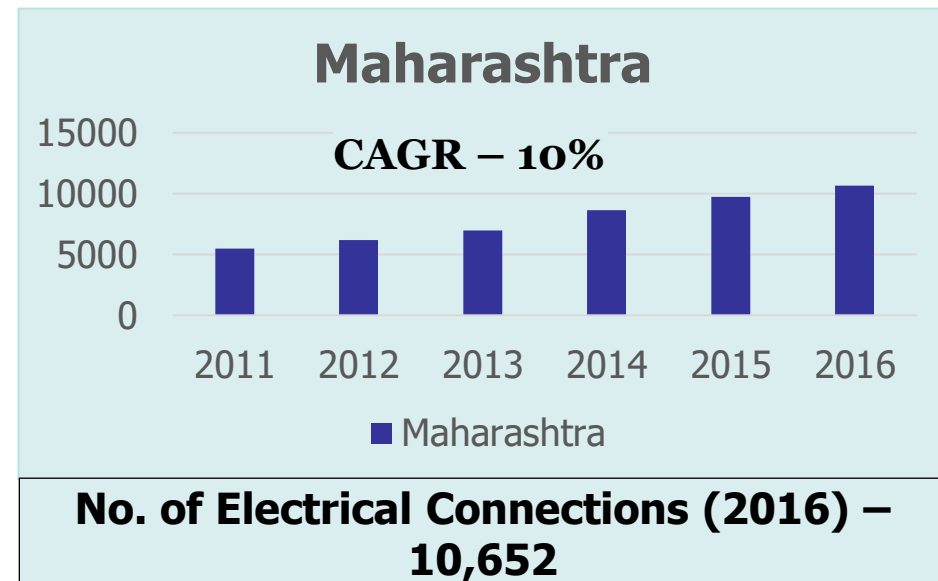


MAHARASHTRA SCENARIO



- ❑ **307,713 sq. km;** Maharashtra is third largest state by area of India
- ❑ **Four climatic zones;** namely classified as Cool, Warm and Humid, Composite and Hot-dry
- ❑ **6 Administrative Divisions: Kokan, Pune, Aurangabad, Nagpur, Amaravati and Nasik**

- ❑ **Four DISCOM;** MSEDCL, TATA Power, Reliance Energy and B.E.S.T.
- ❑ **Maximum share of commercial connections above 100kW;** Mumbai and Pune city and suburban region
- ❑ **Around 1000 new connections every year of** commercial buildings with connected load more than 100kW will be added



Anticipated Energy Saving Potential

Assuming that ECBC is implemented in 2018, total anticipated cumulative energy saving potential by 2030 could be around 15,000 GWh

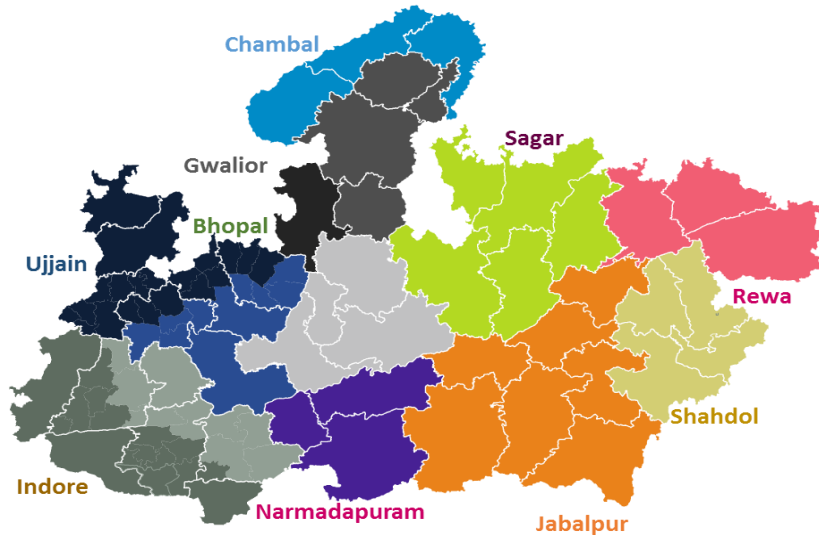
Implementation of ECBC

- **Stakeholder's participation:** All key stakeholders engaged in the development of ECBC rules
- **ECBC Amendment:** Maharashtra ECBC rules have been amended and approved as per the requirement of the state
- **ECBC is expected to be notified by November 2017**
- **Capacity Building** program has been designed
- **Demonstration Projects** work for two ECBC compliant demonstration buildings has been initiated

Impact of EU's program

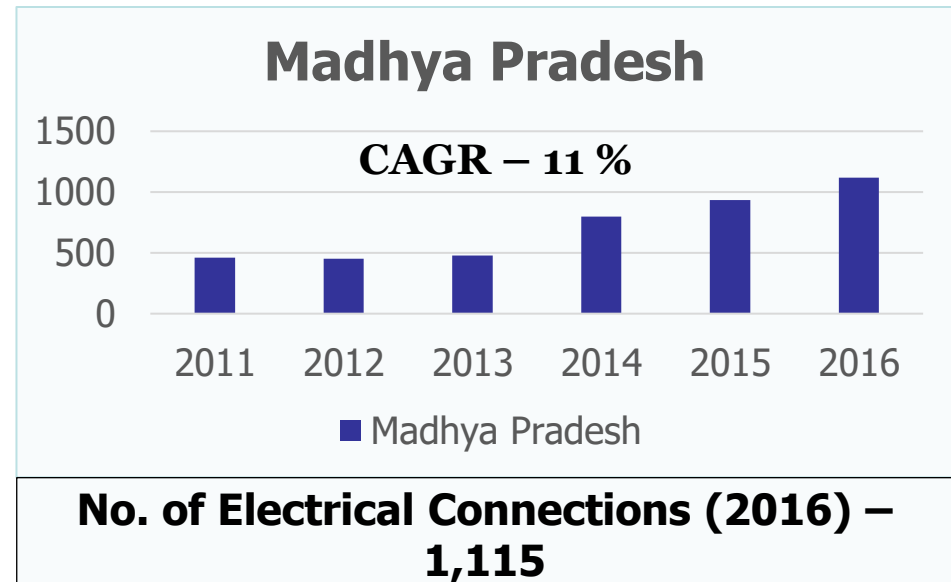
- *Helped to track the existing energy consumption scenario of the state.*
- *Strategies to integrate ECBC in building permit approval process is being developed for the state.*
- *Prepared Rules to comply and enforce the adoption of ECBC, considering the existing administrative working system; for building approval system*

MADHYA PRADESH SCENARIO



- ❑ **Three DISCOM;** Madhya Kshetra Vidyut Vitran Co. Ltd., Paschim Kshetra Vidyut Vitran Co. Ltd., Poorv Vidyut Vitran Co. Ltd.
- ❑ **Maximum share of commercial connections above 100kW;** Bhopal & Indore
- ❑ **Around 100 new connections every year of** commercial buildings with connected load more than 100kW will be added

- ❑ **308,252 sq. km of area;** makes Madhya Pradesh an second largest state of India
- ❑ **Two climatic zones;** namely classified as Composite and Hot-dry
- ❑ **10 Administrative Divisions;** Bhopal, Chambal, Gwalior, Ujjain, Rewa, Sagar, Indore Narmadapuram, Jabalpur, Shahdol



Anticipated Energy Saving Potential

Assuming that ECBC is implemented in 2018, total anticipated cumulative energy saving potential by 2030 could be around 1000 GWh

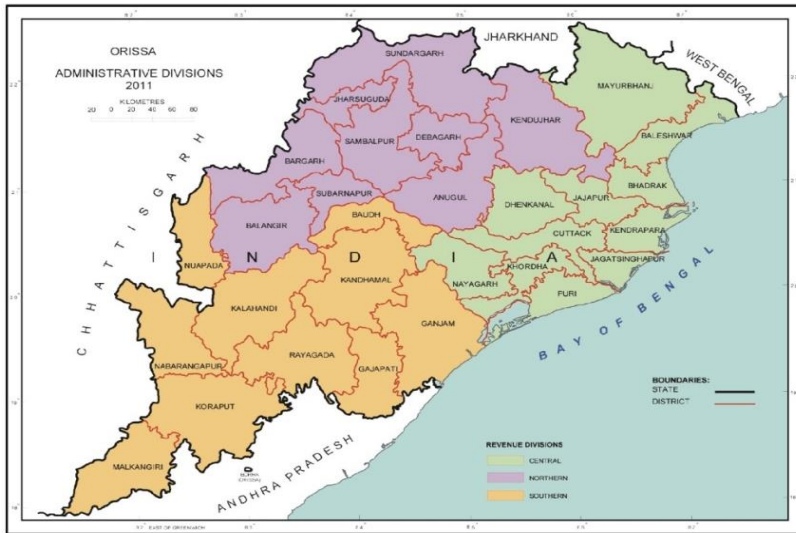
Implementation of ECBC

- ❑ **All Stakeholders were engaged in development of ECBC Rules;** UADD DISCOM, CREDAI members, and others
- ❑ **MP-ECBC Rules have been amended;**
- ❑ Notification is expected by November 2017
- ❑ **Capacity Building Program, & Demonstration project;** is in progress

Impact of EU's program

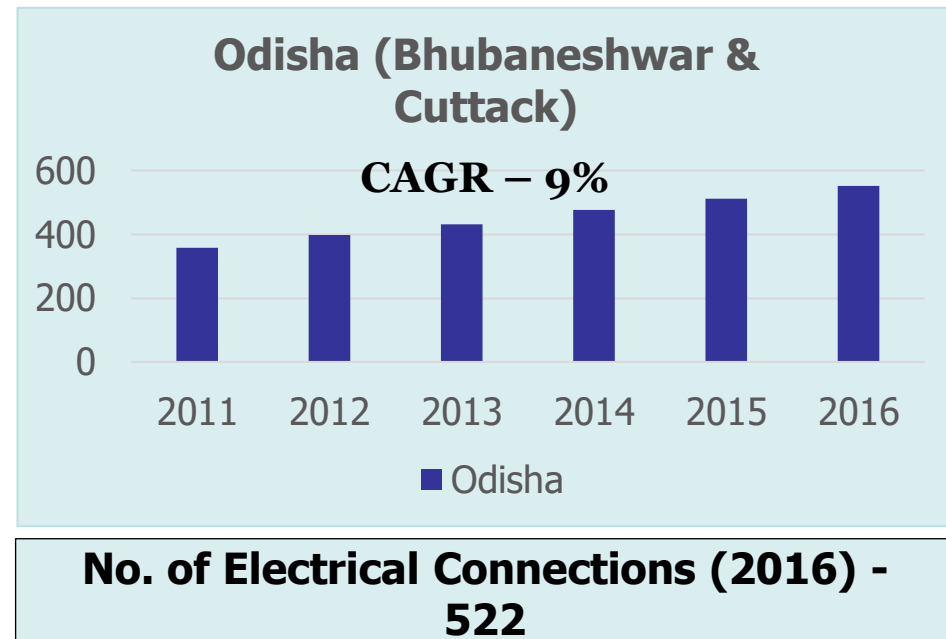
- ❑ *Helped to track the existing energy consumption scenario of the state.*
- ❑ *Strategies to integrate ECBC in building permit approval process is being developed for the state.*
- ❑ *Prepared Rules to comply and enforce the adoption of ECBC, considering the existing administrative working system; for building approval system*

ODISHA SCENARIO



- 155,820 sq. km of area; makes Odisha ninth largest state of India
- Two climatic zones; namely classified as Composite and Warm-Humid
- 3 Divisions; North, South and Central, with their headquarters at Sambalpur, Berhampur and Cuttack respectively

- Three DISCOM; NESCO (North), WESCO (West) and CESU (Central).
- Maximum share of commercial connections above 100kW; Bhubaneswar & Cuttack
- BAU scenario; The growth rate in commercial establishment is 10% in Bhubaneswar and 12% in Cuttack city



Anticipated Energy Saving Potential (Bhubaneswar & Cuttack)

Assuming that ECBC is implemented in 2018, total anticipated cumulative energy saving potential by 2030 could be around 800 GWh

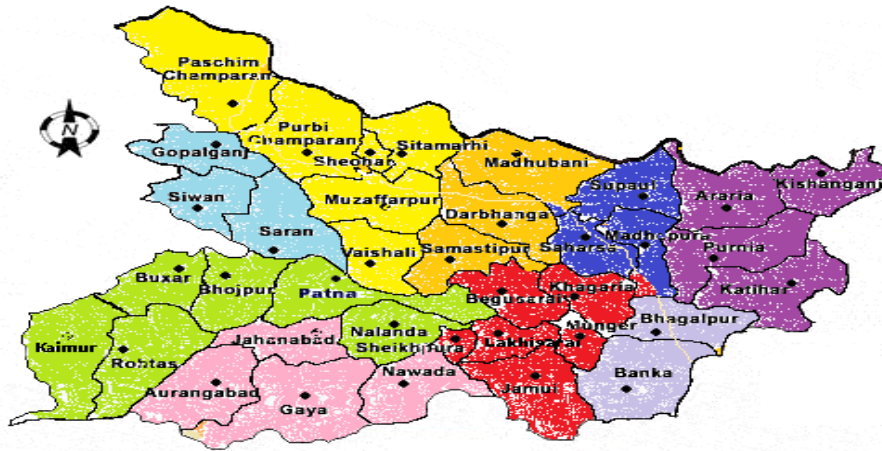
Implementation of ECBC

- ❑ Odisha ECBC Rules have been prepared and will be submitted to Apex Committee
- ❑ Capacity building programs have been designed
- ❑ Work for two ECBC compliant demonstration buildings has been initiated
- ❑ Preparation of draft recommendations to integrate ECBC in building regulations
- ❑ Preparation of draft recommendations to integrate ECBC in common Application form (CAF) rules and single window approval system.

Impact of EU's program

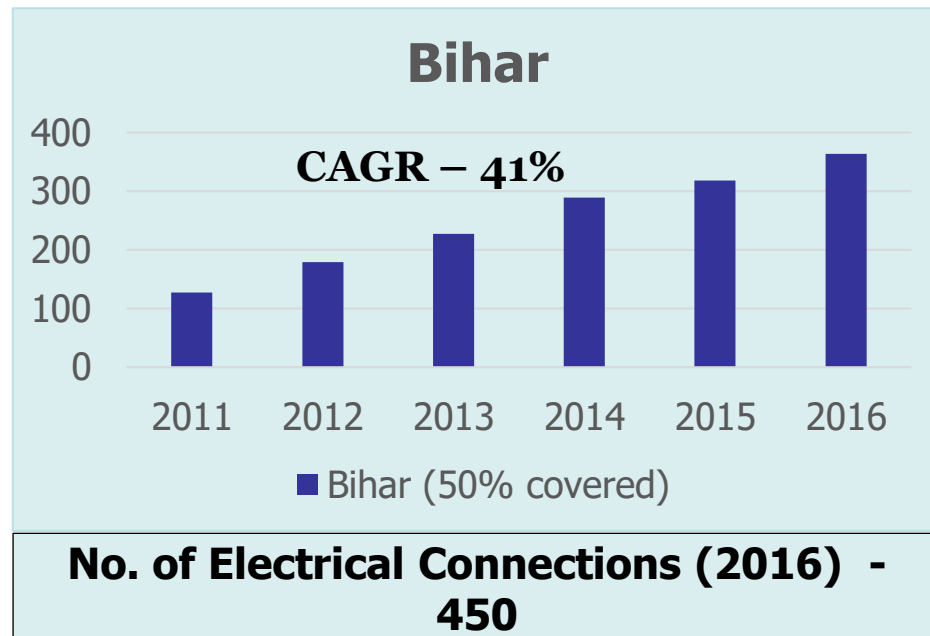
- ❑ *Odisha was the one of the first states to notify ECBC.*
- ❑ *Under the EU program, on ground implementation work is under process.*
- ❑ *Rich awareness among the stakeholders has been created.*

Status of ECBC in Bihar



- ❑ **Two DISCOMs;** North Bihar Power Distribution Corporation Limited (NBPDCCL) & South Bihar Power Distribution Corporation Limited (SBPDCL)
- ❑ **Maximum share of commercial connections above 100kW;** Patna
- ❑ **Around 180 new connections every year;** commercial buildings with connected load more than 100kW

- ❑ **94,163 sq. km;** Bihar is third largest state in India by population
- ❑ **Two climatic zones;** namely classified as Composite and Warm & Humid
- ❑ **8 Administrative Divisions;** Patna, Tirhut, Saran, Darbhanga, Kosi, Purnia, Bhagalpur, Munger and Magadh



Anticipated Energy Saving Potential

Assuming that ECBC is implemented in 2018, total anticipated cumulative energy saving potential by 2030 could be around 650 GWh

Implementation of ECBC

- **Bihar ECBC Rules have been amended and approved** as per requirement of the state through various consultation meetings involving stakeholder viz. SDA, DISCOM, UD & HD, ULB, Consultants etc.
- **Capacity building programs have been designed**
- **Notification is expected in the month of November 2017**
- Work for two ECBC compliant demonstration buildings has been initiated

Impact of EU's program

- *Technical assistance under EU project has provide a proper framework for adoption and implementation of ECBC in state.*
- *ECBC adoption work has been expedited after as EU cell has been created in state*
- *Code was already amended but under EU project, rules for Bihar ECBC has been framed*

Thank you for your attention!

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