

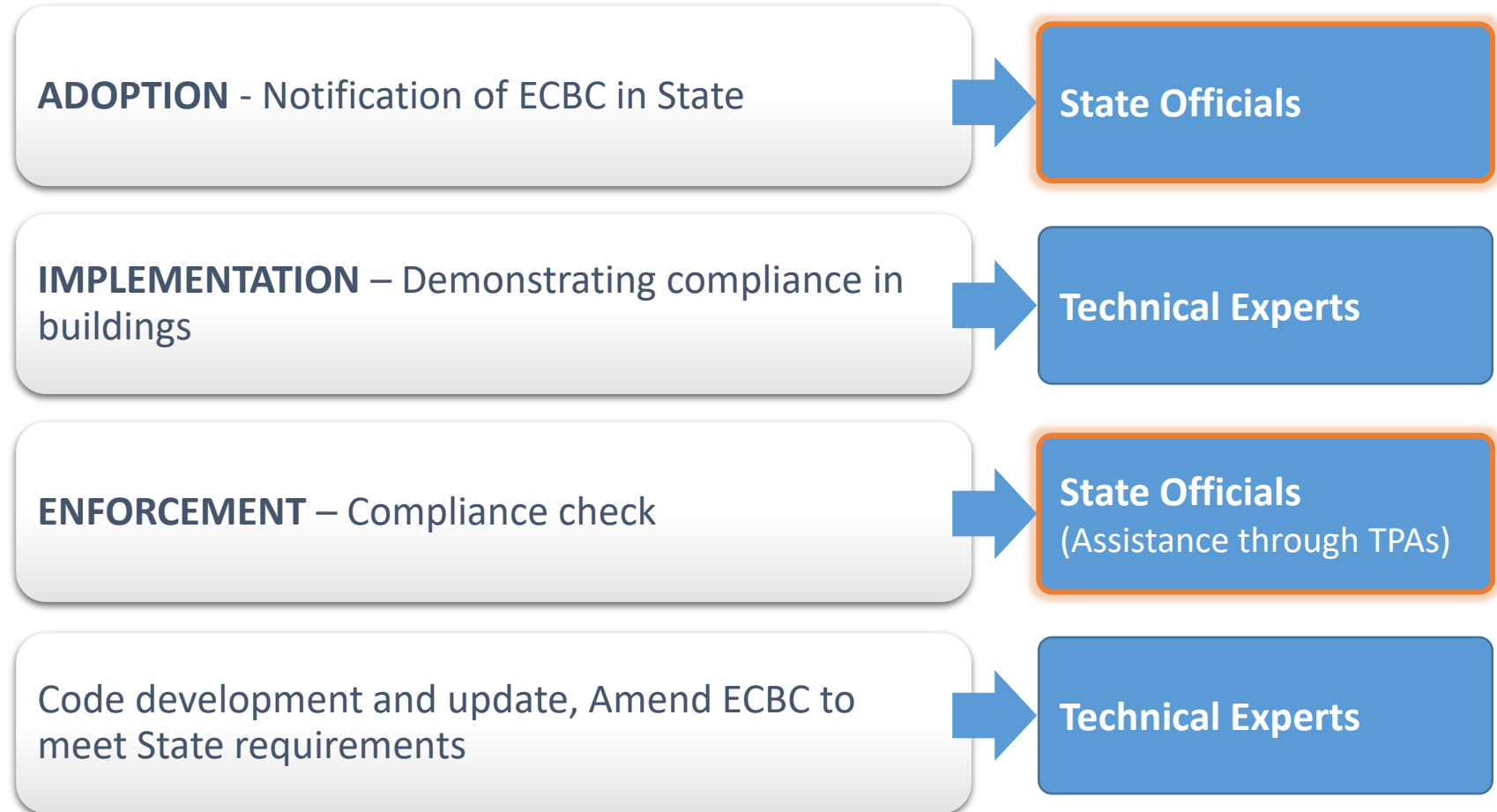


# Implementation Approaches: Energy Conservation Building Code

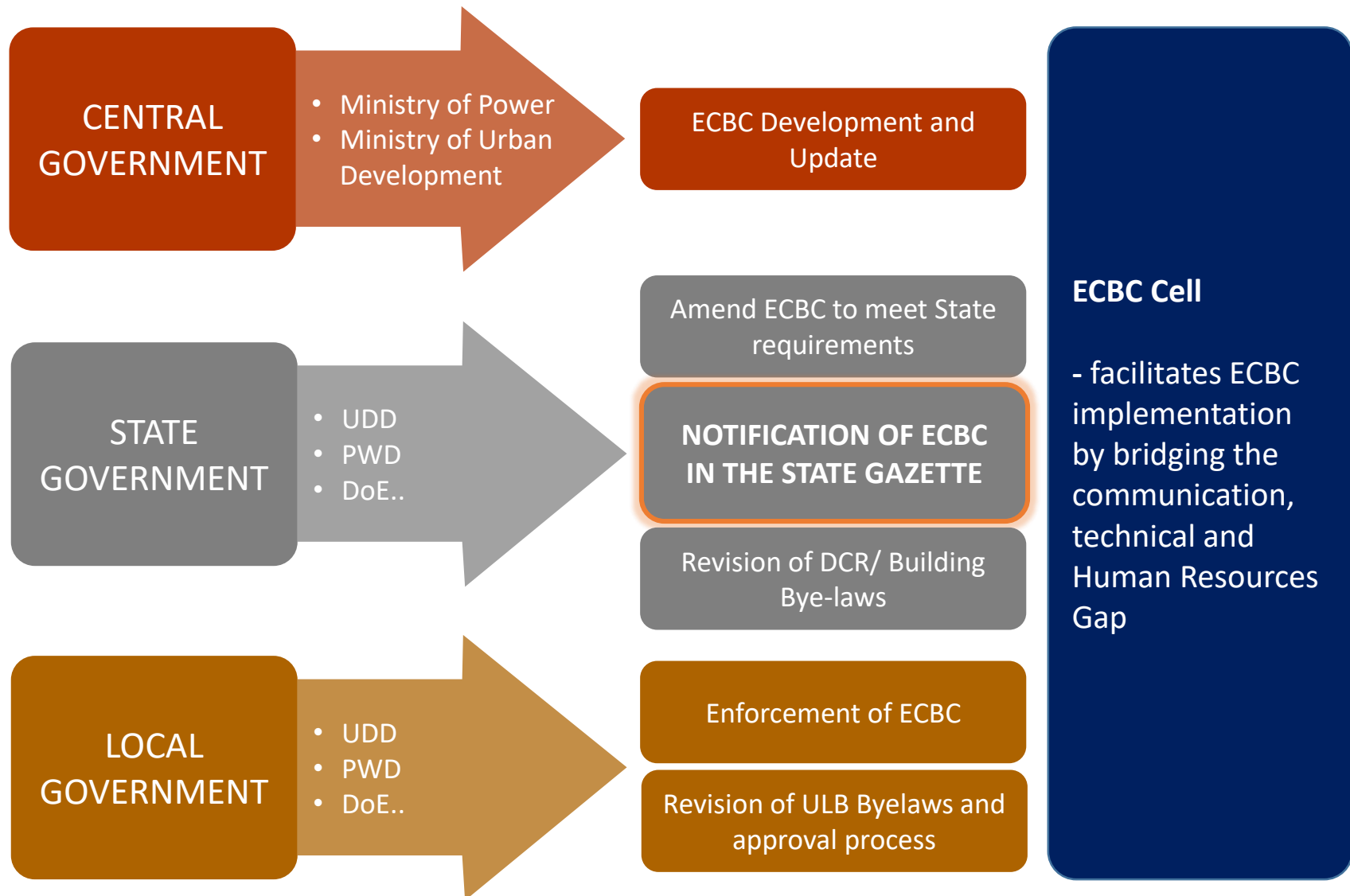
April 20, 2017 | Ranchi

By: Mohini Singh  
Senior Researcher, AEEE

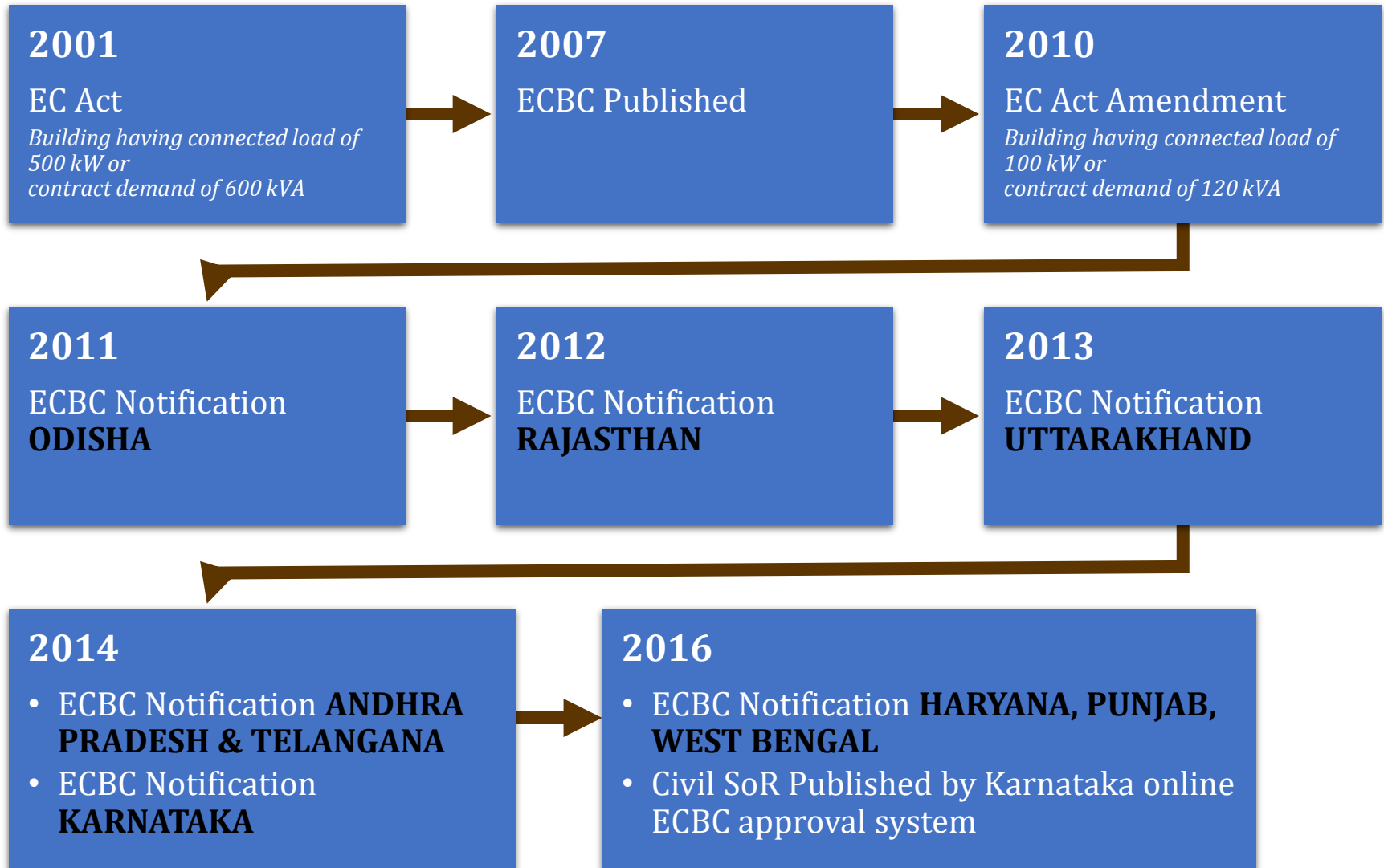
# ECBC Roles & Responsibilities



# ECBC Implementation Process – Government Roles & Responsibilities



# Timeline of ECBC Implementation



**ROLE OF GOVERNMENT:  
IMPLEMENTATION APPROACHES BY STATES**

# ANDHRA PRADESH & TELANGANA: ECBC Notification



In Andhra Pradesh the notification was facilitated by **Municipal Administration & Urban Development (MA&UD) Department**

## GOVERNMENT OF ANDHRA PRADESH ABSTRACT

MA&UD Department – Adoption of Energy Conservation Building Code (ECBC) – Amendment to Andhra Pradesh Building Rules, 2012 – Notification – Issued.

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### MUNICIPAL ADMINISTRATION & URBAN DEVELOPMENT DEPARTMENT

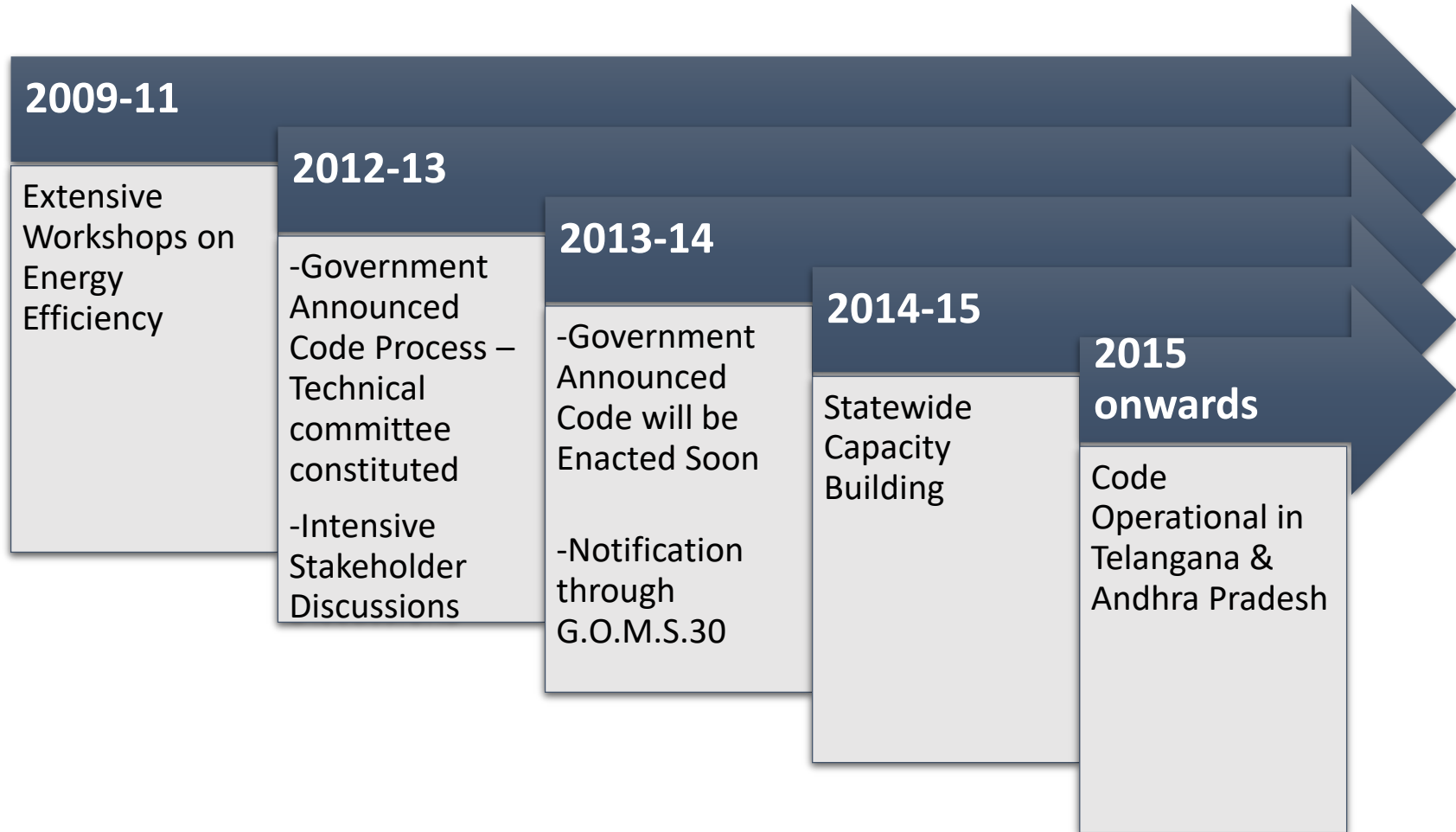
**G.O.Ms.No. 30**

**Dated: 28.01.2014**  
**Read the following:**

1. G.O.Ms.No.168 MA&UD Dept., Dated: 07.04.2012
2. G.O.Ms.No.38, Energy (Res-A2) Department, dated: 26.09.2012
3. Minutes of the Meeting held in the Chambers of Chief Secretary to Government on 18.09.2012
4. G.O.Rt.No.1328 MA&UD Dept., Dated: 04.10.2012
5. Technical Committee report on adoption of ECBC

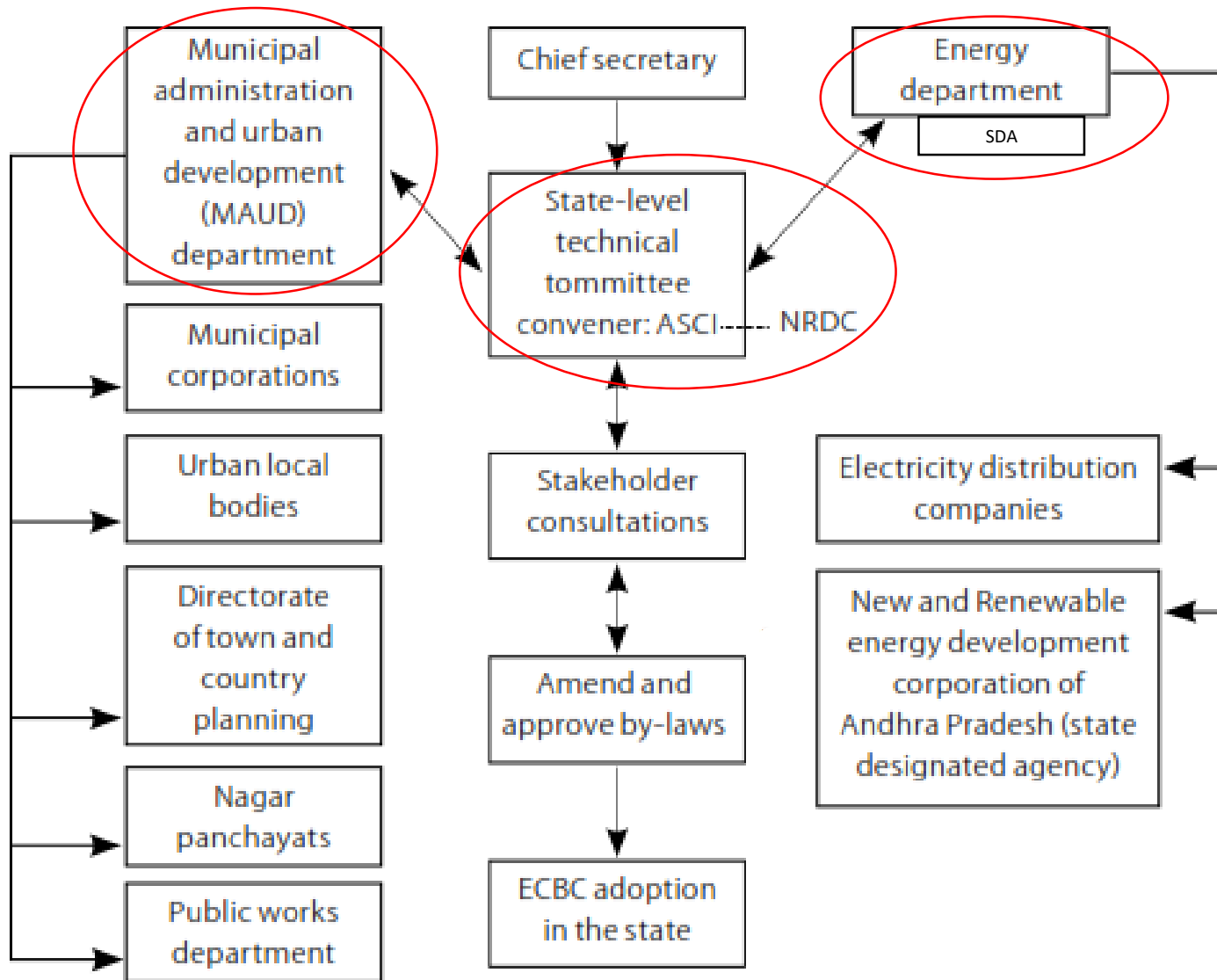
\* \* \*

# ANDHRA PRADESH & TELANGANA: ECBC adoption timeline



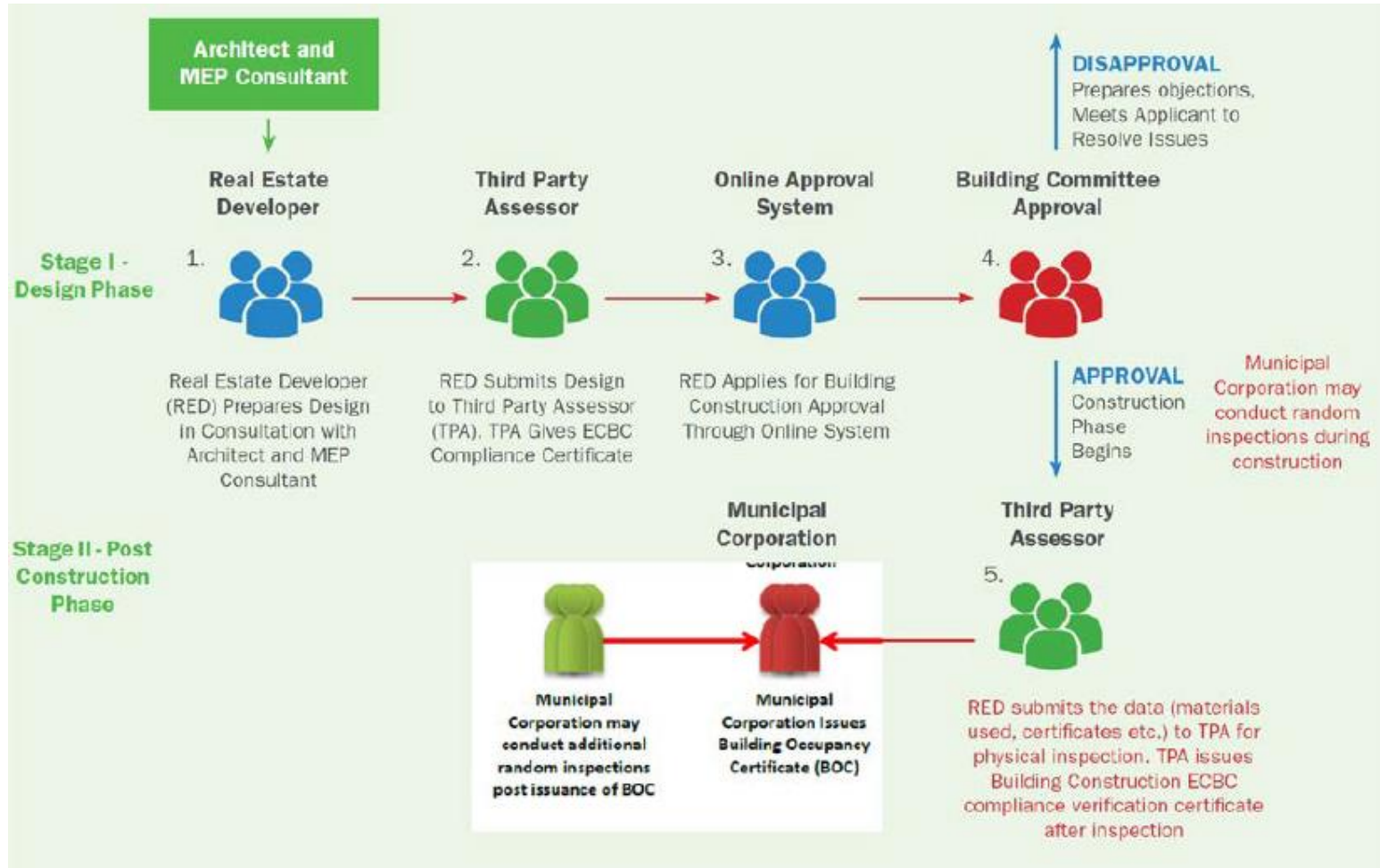
- Training completed – more than 750 government officials, real estate developers and architects in AP and Telangana

# ANDHRA PRADESH & TELANGANA: Illustrative ECBC governance map





# HYDERABAD: ECBC approval process



Karnataka notification was done by Department of Energy, Karnataka

GOVERNMENT OF KARNATAKA  
ENERGY SECRETARIAT  
NOTIFICATION

NO. EN41VSC2013, Date: 05.09.2014

Government of Karnataka gazette notification dated: 27<sup>th</sup> November 2014 (Part - IVA)

In exercise of the powers conferred by section 18 of the Energy Conservation Act 2001 (52 of 2001)

**Section 18**

THE GAZETTE OF INDIA  
MINISTRY OF LAW, JUSTICE AND COMPANY AFFAIRS  
(Legislative Department)

New Delhi, the 1<sup>st</sup> October, 2001/ ~~Asvina~~ 9, 1923 (Saka)

THE ENERGY CONSERVATION ACT, 2001

(No 52 OF 2001[29- September 2001])

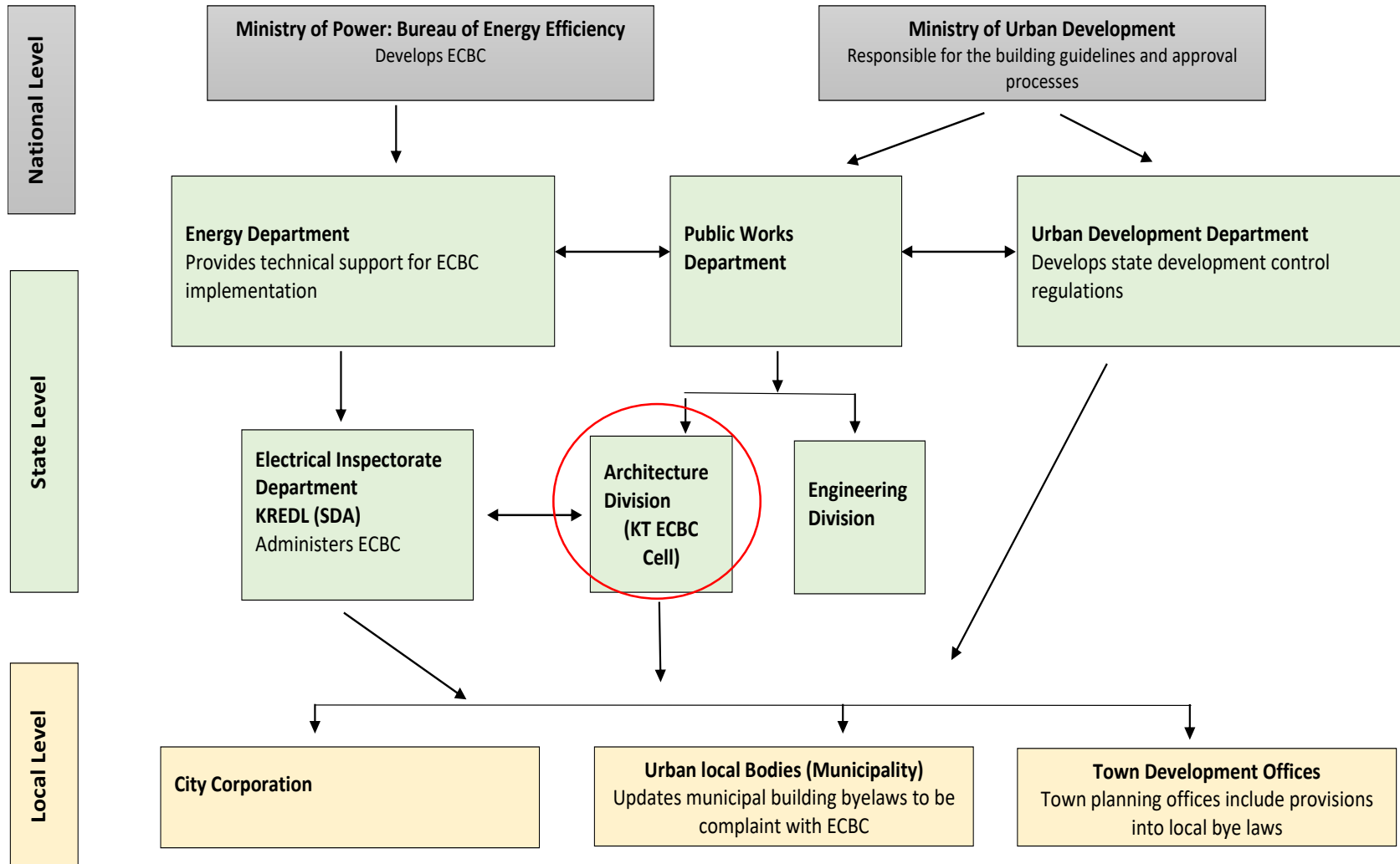
Power of Central 18.  
Government or  
State  
Government  
to issue directions

The Central Government or the State Government may, in the exercise of its powers an performance of its functions under this Act and for efficient use of energy and its conservation, issue such directions in writing as it deems fit for the purposes of this Act to any person, officer, authority or any designated consumer and such person, officer or authority or any designated consumer shall be bound to comply with such directions.

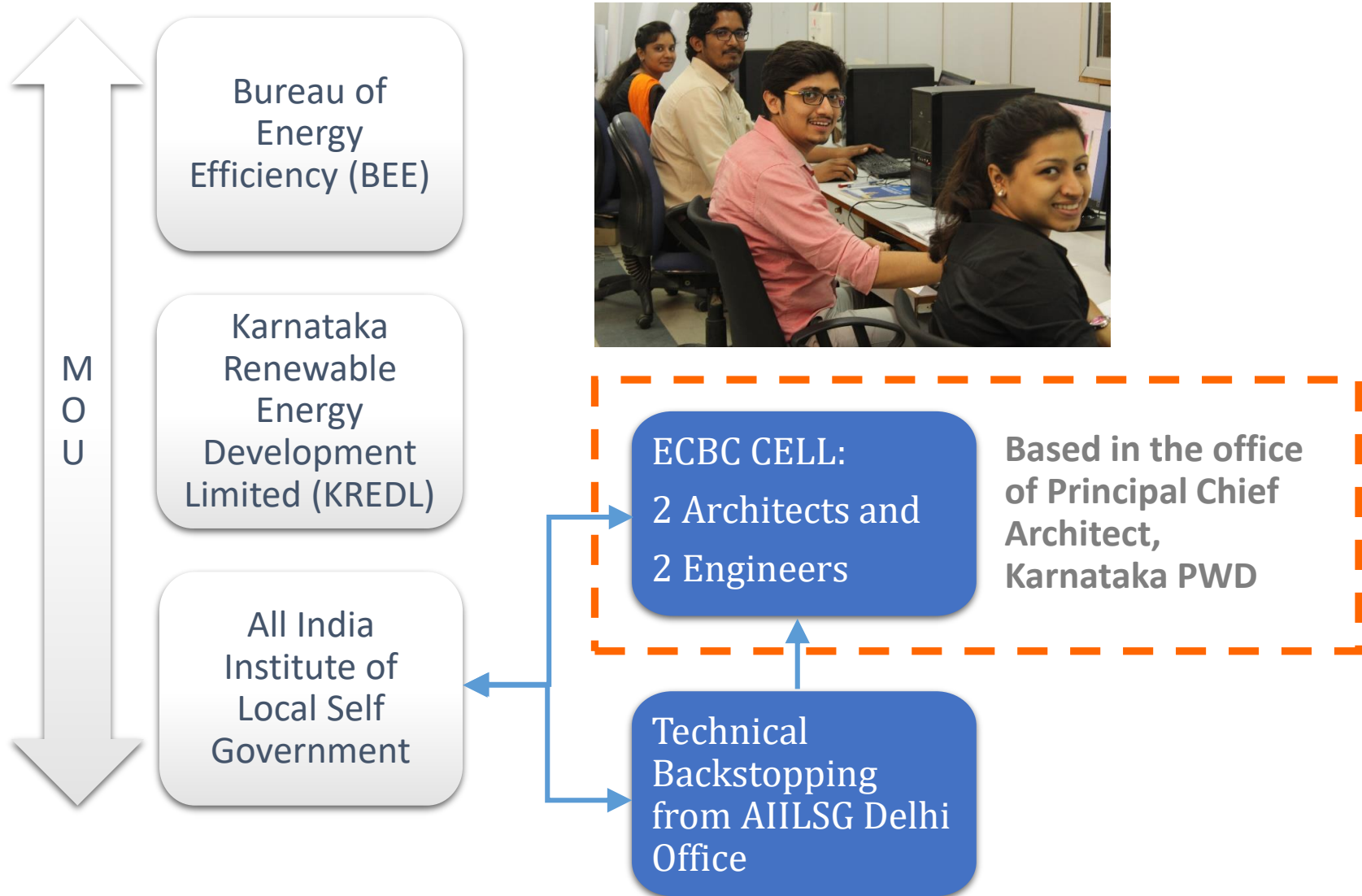
Explanation— For the avoidance of doubts, it is hereby declared that the power to issue directions under this section includes the power to direct —

- (a) regulation of norms for process and energy consumption standards in any industry or building or building complex; or
- (b) Regulation of the energy consumption standards for equipment and appliances.

# KARNATAKA: Illustrative ECBC governance map



# KARNATAKA: Organizational Structure of ECBC Cell



# KARNATAKA: Responsibilities of State Departments and ULBs

**Urban Local Bodies** will be responsible for enforcement of ECBC in respect to private buildings

Public Works Department (PWD) **Architectural Department Of PWD** will be responsible in respect to state government buildings

**Department Of Electrical Inspectorate**, Government of Karnataka is to inspect electrical installation in the buildings, which are ECBC compliant

**Karnataka Renewable Energy Development Limited**, as the nodal agency to monitor the implementation of the Code at the State level and also to create the awareness of the ECBC

## REVISING SCHEDULE OF RATES FOR KARNATAKA

- To include energy efficient materials and products in SoR

## ENERGY EFFICIENT BUILDING DESIGN

- Use Integrated Design Process to make 10 of the PWD's buildings ECBC compliant

## UPDATING BUILDING BYE LAWS

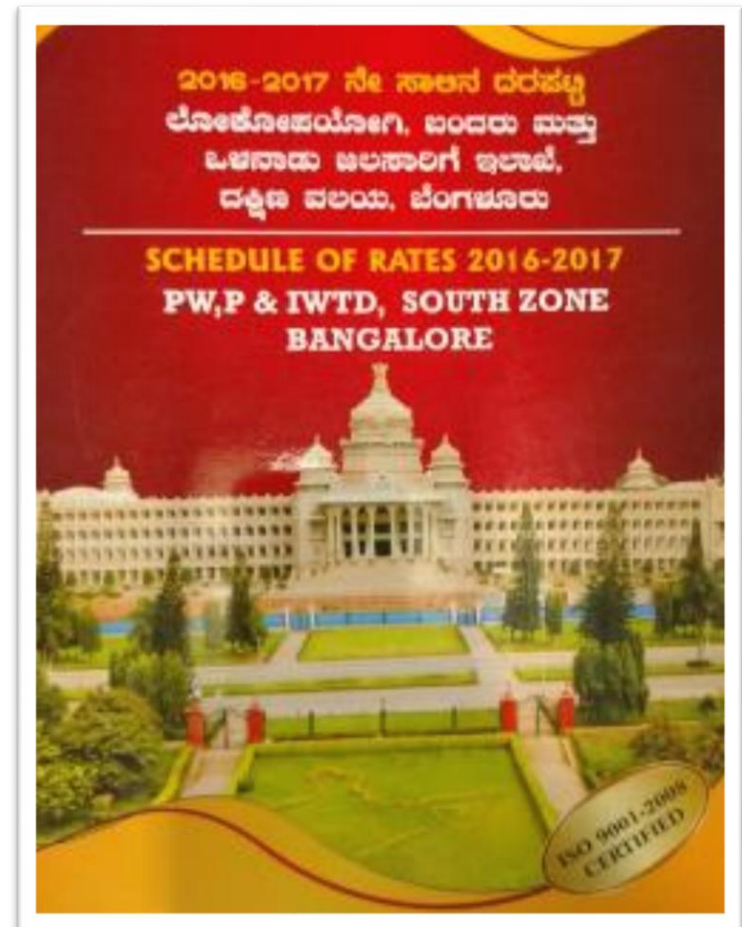
- To include ECBC provisions in the State GDCR and Bye Laws

## ORGANIZING ECBC AWARENESS WORKSHOPS

- Capacity building of building sector stakeholders and government officials to make them aware about the ECBC provisions and compliance mechanisms

# KARNATAKA: Revision of PWD SoR

SoR is a reference document followed by PWD and some Public Sector Undertakings (PSUs) for providing material and technology specifications and for cost estimation of buildings





# Scope of the ECBC Notification

**ANDHRA PRADESH:** The code shall be applicable to *commercial buildings and other Non Residential Buildings that have a plot area of more than 1000 Square Meters or built up area of 2000 Square Meters and certain categories of buildings such as Multiplexes, Hospitals, Hotels, and Convention Centers irrespective of their built up area shall comply with the APECB Code* as given in Annexure XIII

**KARNATAKA:** The code is applicable to all buildings or building complexes in the urban area that have a *connected load of 100 kW or greater or a contract demand of 120 kVA or greater, or having conditioned area of 500 m<sup>2</sup> or more and used for commercial purposes*


**HARYANA:** The provisions of Energy Conservation Building Code shall be applicable to all buildings of categories listed below having connected load of 100 KW or above or a contract demand of 120 KVA or above,-

- i. Commercial Complexes, Shopping Malls, Trade Buildings.*
- ii. Hotels, Motels, Restaurants, Transit-cum-Boarding Houses, Banquet Halls, Janj Ghars, Resorts.*
- iii. Cinema Halls, Auditoriums, Clubs, Convention Centers, Concert Halls.*
- iv. Office Buildings, Banks, Public Assistance Institutions.*
- v. Hospitals, Institutional Care Centers, Institutional Buildings, Information and Technology Parks, Cyber Parks and Business Process Outsourcing (BPO) Buildings*



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No. 71(I)

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Kolkata Gazette  
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*Extraordinary*  
Published by Authority

CHAITRA 2 ]

TUESDAY, MARCH 22, 2016

[ SAKA 1938

PART I.—Orders and Notifications by the Governor of West Bengal, the High Court, Government Treasury, etc.

**GOVERNMENT OF WEST BENGAL**  
**DEPARTMENT OF POWER & NON-CONVENTIONAL ENERGY SOURCES**

NOTIFICATION

No. 42-PO/O/C-1/5M-49/09(Part I).—3rd March, 2016—In exercise of the powers conferred by Section 15 of the Energy Conservation Act, 2001(Central Act No. 52 of 2001), the Governor is pleased hereby to notify the following Energy Conservation Building (ECB) Codes for efficient use of energy and its conservation in buildings or building complexes, namely:—

1. (1) This Code may be called as West Bengal Energy Conservation Building Code, 2016  
(2) It shall come into force on the date of its publication in *the Official Gazette*.  
(3) The purpose of this code is to provide minimum requirements for the energy-efficient design and construction of buildings.  
(4) Definitions of all terms, abbreviations and acronyms used in this code are detailed in Appendix-A [§ 10].
2. **Scope**  
The code is applicable to buildings or building complexes that have a connected load of 100kW or greater or a contract demand of 120kVA or greater.  
This code stands mandatory from this date of notification.

## Government of Rajasthan Energy Department

### NOTIFICATION

F20 (6) Energy/98/Pt /ECBC/

Date

In exercise of the powers conferred by section 18 of the Energy Conservation Act, 2001(Central Act No. 52 of 2001), the State Government hereby issues the following Energy Conservation Building (ECB) directives for efficient use of energy and its conservation in buildings or building complexes, namely:-

#### **1. Scope:**

The directives are applicable to commercial buildings or building complexes that have a connected load of 100 kW or greater or a contract demand of 120 kVA or greater or having conditioned area of 1000 m<sup>2</sup> or more.

#### **1.1 Applicable Building Systems:**

The provisions of these directives shall apply to, -

- (a) Building envelopes, except for unconditioned storage spaces or warehouses;
- (b) Mechanical systems and equipment, including heating, ventilating, and air conditioning;
- (c) Service hot water heating;
- (d) Interior and exterior lighting; and
- (e) Electrical power and motors.

[Extract from the Punjab Govt. Gaz., dated the 1st July, 2016]

## GOVERNMENT OF PUNJAB

DEPARTMENT OF NEW & RENEWABLE ENERGY  
(Approved vide Cabinet order No. 2167 dated 25.05.2016)

### NOTIFICATION

The 24th June, 2016

**No. 18/4/16-671/1856.**– In exercise of the powers conferred under Section 18 of The Energy Conservation Act-2001 (Act No. 52 of 2001), the Governor of Punjab is pleased to issue the following directions for the mandatory use of "Punjab Energy Conservation Building Code" for the energy efficiency and its conservation in the buildings or building complexes in the State of Punjab.

#### 1. Purpose

The purpose of this code is to provide minimum requirements for the energy-efficient design and construction of buildings in the state of Punjab.

1.1. This code shall be called Punjab Energy Conservation Building Code (Punjab-ECBC).

#### 2. Scope

The Punjab Energy Conservation Building Code (Punjab-ECBC) gives directives for the requirements for design or retrofit of buildings/ building complexes.

The code is applicable to buildings or building complexes that have connected load of 100 kW or greater or a contract demand of 120 kVA or greater or having conditioned area of 500 m<sup>2</sup> or more.

Punjab-ECBC pertains to all buildings/ building complexes such as offices, hotels, shopping complexes, group housing complexes, hospitals and others that are not primarily for industrial i.e. manufacturing use.

## The Orissa Gazette

EXTRAORDINARY  
PUBLISHED BY AUTHORITY

No. 1625 CUTTACK, THURSDAY, JULY 14, 2011/ASADHA 23, 1933

DEPARTMENT OF ENERGY

NOTIFICATION

The 11th July 2011

No. 5423—R&R-III-66/2011—In exercise of the powers conferred by Section 15 of the Energy Conservation Act, 2001 (52 of 2001) the State Government in consultation with the Bureau of Energy Efficiency do hereby make the following code with respect to use of energy in the buildings, namely :—

- (1) This code may be called the Orissa Energy Conservation Building Code, 2011.  
(2) It shall come into force on the date of its publication in the *Orissa Gazette*.

**2. Definitions :**

- (1) In this code unless the context otherwise requires,—  
“Appendix” means the Appendix “A” to “L” annexed to this code which have detailed reference of this code.
- (2) All other words and expressions used in this code but not defined shall have the same meaning as respectively assigned to them in the Energy Conservation Act, 2001.

**HARYANA GOVERNMENT**  
**RENEWABLE ENERGY DEPARTMENT**

**Directions**

The 31st March, 2016

**No. 19/6/2016-5P.**— In exercise of the powers conferred by Section 18 of the Energy Conservation Act, 2001 (Central Act 52 of 2001), the Governor of Haryana hereby issue the following directions for enforcement of the Energy Conservation Building Code, namely:-

1. **Definitions.**- In these directions, unless the context otherwise requires,—
  - (a) “kVA” means kilovolt-Amperes;
  - (b) “kW” means kilowatt;
  - (c) “Prescribed authority” means the concerned department i.e. local body or organization or authority, empowered by relevant law to sanction building plans; to inspect the building; and/or to issue the completion/occupation certificate to the project developers or their authorized agents.
  - (d) “Project developer” means the owner of the building complex.
2. Words and expressions used and not defined above but defined in the Energy Conservation Act, 2001 (Central Act 52 of 2001) and Energy Conservation Building Code, shall have meanings respectively assigned to them in that Act/Code.
3. The provisions of Energy Conservation Building Code shall be applicable to all buildings of categories listed below having connected load of 100 KW or above or a contract demand of 120 KVA or above,-
  - (i) Commercial Complexes, Shopping Malls, Trade Buildings.
  - (ii) Hotels, Motels, Restaurants, Transit-cum-Boarding Houses, Banquet Halls, Janj Ghars, Resorts.
  - (iii) Cinema Halls, Auditoriums, Clubs, Convention Centers, Concert Halls.
  - (iv) Office Buildings, Banks, Public Assistance Institutions.
  - (v) Hospitals, Institutional Care Centers, Institutional Buildings, Information and Technology Parks, Cyber Parks and Business Process Outsourcing (BPO) Buildings.

# ROLE OF THIRD PARTY ASSESSORS



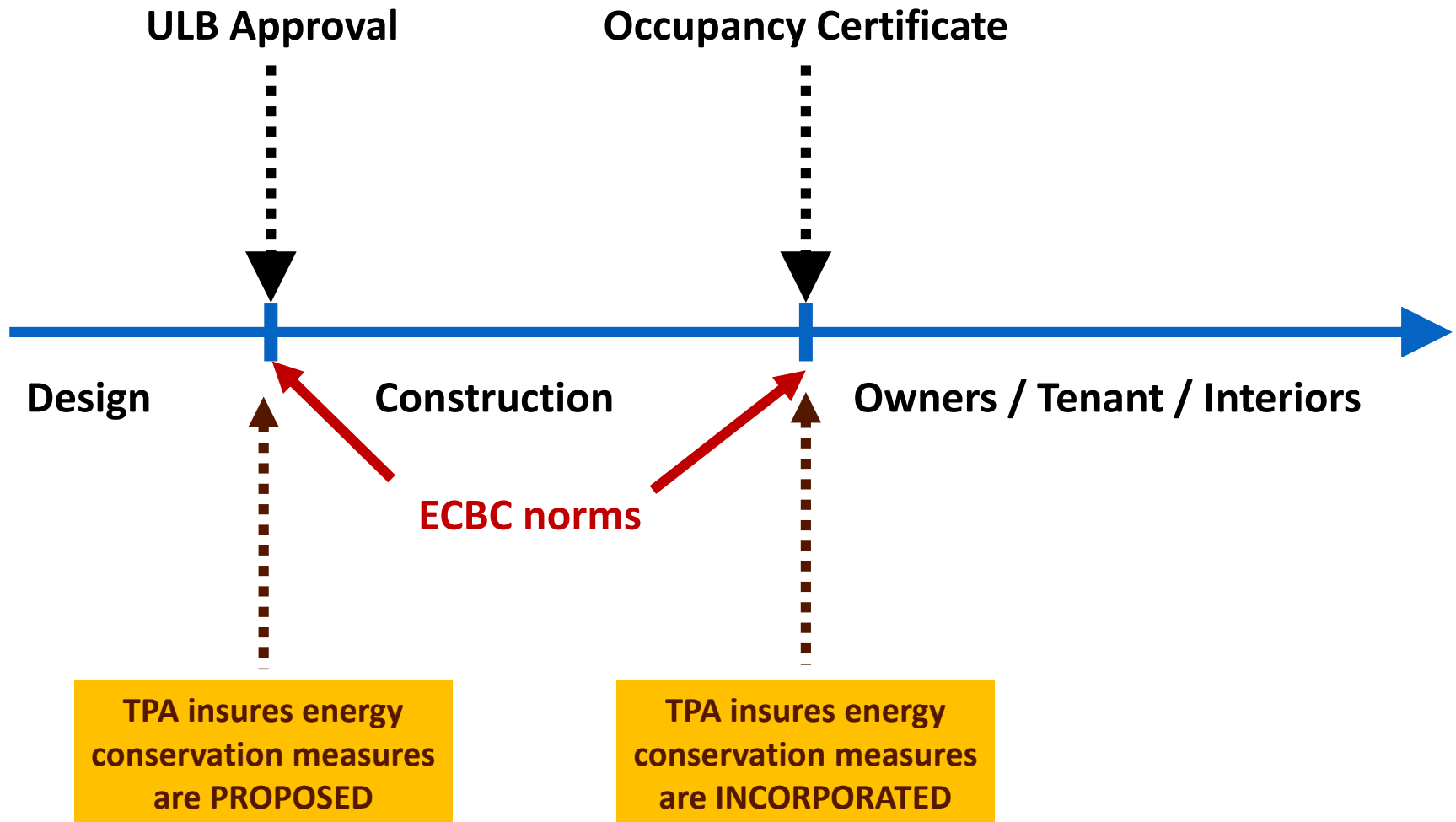
Government and public sector agencies such as **ULBs, SDAs or the utilities do not have the manpower or the technical competency** to serve as the primary agency conducting ECBC compliance checks

**TPA Approach** : TPA reviews each building project in two stages to **determine ECBC compliance**. The first stage is a Design Review and the second stage is Construction Review

- **Design Review**: the TPA reviews the drawings, specifications, and ECBC Compliance Forms to ensure that the energy conservation measures (ECMs) are appropriately reflected in the project Design Documents
- **Construction Stage**: the TPA reviews the ECBC Compliance Forms and inspects the building to ensure that the ECMs are reflected in the construction of the building and the installation of its systems

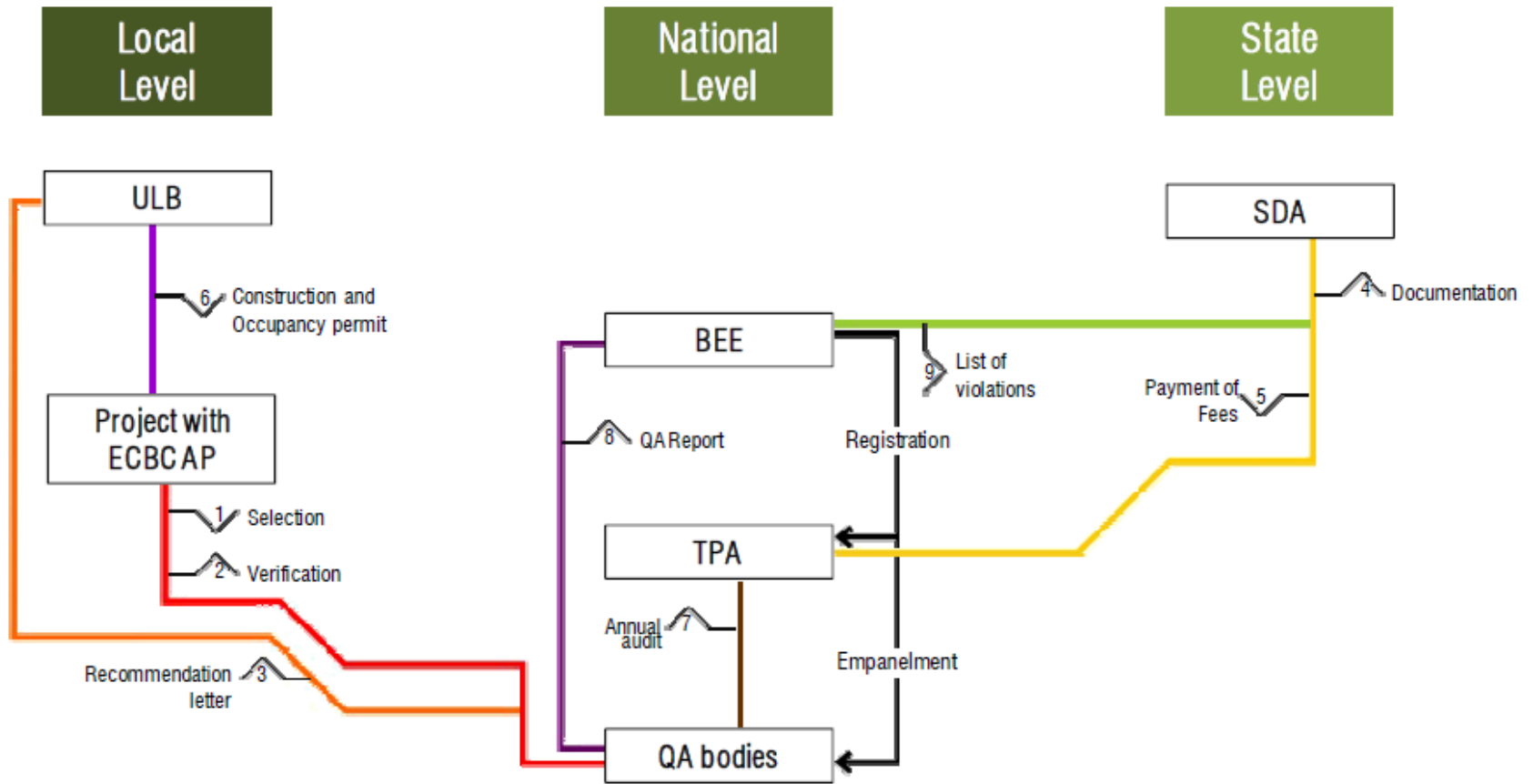
# Building Construction Process – Role of TPA

Construction and Permitting Process  
For majority developer projects





# Operating Model for Third Party Assessment for ECBC Compliance Checks



THANK YOU

[www.aeee.in](http://www.aeee.in)