

SDAs also stated that BEE needs to be responsible for the overall quality management of the TPA work, and that the agency would prefer to not be directly involved in financial transactions for the TPA work.

Recommendations for ECBC Enforcement

- BEE needs to appoint a Technical Committee to appoint QA bodies to oversee the TPA framework, and select the first group of TPAs who can provide the compliance check services across India whilst the rest of the TPA institutional infrastructure is set up.
- BEE needs to appoint an examination agency that can develop and administer TPA examination and conduct awareness and marketing campaigns over a long term.
- BEE needs to develop a curriculum guide for TPA qualifications. And Question bank
- Template documents and checklists to be used by TPAs need to be developed based on tiered approach.
- There is a need to identify a financial institute and develop template terms for the Letter of Credit payment system to be used by SDAs for working with state level branches.
- BEE needs to appoint an expert who can provide consultation to the SDAs for setting up the TPA model in states such as Rajasthan, Orissa, Tamil Nadu, Maharashtra, Gujarat etc., which lead ECBC implementation.

Conclusions

The Third Party Assessor framework proposed can resolve the issue of lack of manpower and expertise to enforce ECBC at the local government level. However, motivating BEE to put the framework in place could be a challenge and a time consuming task. Some of this can be overcome by state level initiatives demonstrating effectiveness of the TPA framework.

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The Third party Assessor Model for Compliance and Enforcement of ECBC in India

Background: The Bureau of Energy Efficiency, India (BEE) developed the Energy Conservation Building Code (ECBC). Through mandatory ECBC compliance, India can achieve estimated annual energy saving of 1.7 billion kWh. The rate of compliance with ECBC is forecasted at 10% until 2013, 35% in 2015 and 65% by 2017. To achieve this, ECBC must be adopted by the states and enforced by local governments. However, government and public sector agencies such as Urban Local Bodies (ULBs), State Designated Agencies (SDAs) and utility companies currently do not have the manpower or expertise to enforce ECBC. It will be challenging to build capacity in short period within these agencies. To meet this need for enforcement of ECBC, it is essential to create a cadre of professionals outside the public sector.

Project Overview

Shakti Sustainable Energy Foundation funded the Centre for Advanced Research in Building Science and Energy (CARBSE), CEPT University and The Weidt Group to develop a role of an independent professional called “Third party Assessor” and propose an operating model and the propose institutional framework required. Background research, was conducted to analyze successful Third Party Assessor (TPA) models within India and outside India. Some of these TPA models were related to building energy code or ratings systems, others were from the nonbuilding sector, but offered valuable insights towards developing a TPA model for ECBC implementation & enforcement in India. A large stakeholder engagement provided useful feedback in the development of the TPA role and framework. Some of the benefits of the TPA Model are:

- Increasingly popular mode of code enforcement of building codes around the world.
- Allows easier scale up and scale down of capacity to handle growth
- Market Driven - Availability of TPA across India.
- Adopted in China with good success 60% compliance reported.
- In response to challenges about municipal-led regulatory enforcement, governments in Canada have used TPAs.
- Over 90% of the US State of Pennsylvania's 2,562 municipalities have enforced the code locally, using employees or via Certified TPAs
- Building Performance Rating systems with TPAs used in Australia (NABERS), USA (HERS)
- Proposed cost of the TPA work for ECBC compliance could be less than INR 0.002/kWh of energy saved.

Summary of Project Outcomes

1. The TPA Framework:

The proposed framework is based on issues of capacity, eligibility, finance and administration of a Third Party Assessor scheme and includes roles, scope of work, deliverables, pre-qualifications, examinations and qualifications, quality assurance and funding and financing mechanism. It defines the relationships between project teams, TPAs, the SDAs, BEE and ULBs for ECBC compliance checking.

TPA framework includes roles for the following organizations and individuals:

- **Bureau of Energy Efficiency (BEE):** In-charge of the technical standards, administering the system with oversight and grant qualification to TPAs.
- **Project team:** Team consisting of the developer, owner, architect, engineers, contractor, and who is responsible for ensuring that the project meets with ECBC requirements.
- **ECBC Accredited Professionals (ECBC AP):** Individuals who are a part of the project team either specially hired or team member having qualification, and provide assistance in making ECBC compliant building. They are responsible for preparation of the compliance documentation to be submitted to ULBs.
- **TPAs:** Qualified individuals that check compliance of the building with ECBC requirements during design and construction. A TPA shall be a building professional with a Bachelor's Degree and have pass a qualifying exam as per norms and system of BEE. TPAs will be listed on BEE's website and will be permitted to provide compliance checking services across the country. They will be hired by project team but will not be directly paid by them.
- **State Designated Agencies (SDAs):** SDAs are statutory bodies set up at the state level to implement the Energy Conservation Act 2001, which includes the ECBC. As nodal agencies at state level, they will coordinate and cooperate with BEE at the central level.
- **Quality Assurance (QA) Bodies:** Organisations appointed by BEE to review TPAs' work for quality and consistency. A national level technical committee will help BEE select the QA bodies. QA Bodies will be paid by the BEE from the central government funds which are specifically allocated for measuring and improving ECBC compliance rates.
- **Urban Local Bodies:** Development authorities and municipal corporations responsible for approving a building for construction or occupancy based on the TPA's recommendation that a building meets the ECBC requirements. The approval will be at two stages, one for the construction permit and second for building occupancy.
- **Financing Mechanism:** A National Bank and its state selected branches that collect and disburse payments to the TPAs. The SDA notifies the bank to release payments to the TPA for each milestone and its completed deliverable.

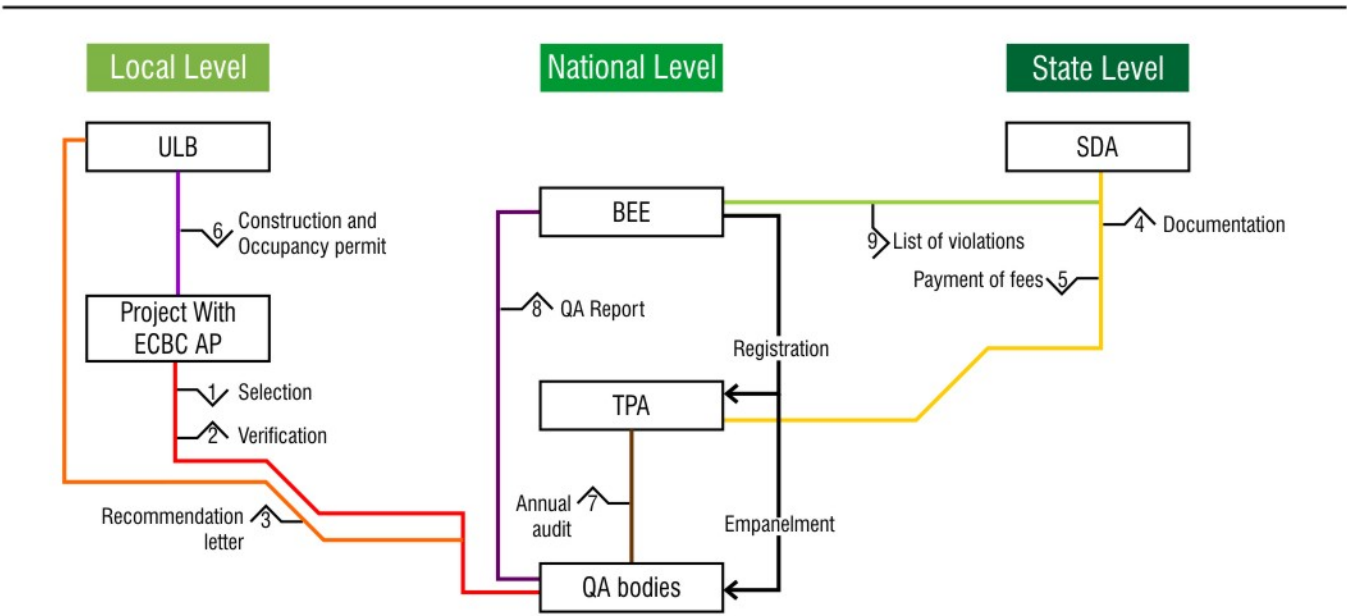


Fig 1. Operating model for Third Party Assessment for ECBC Compliance Checks

2. ECBC compliance process under the TPA framework:

A project team selects the TPA for the project, and the TPA is required to declare no conflict of interest for each project he/she reviews. Project team will follow all other processes to acquire building construction and occupancy permits as required by each ULB. TPA will only check for ECBC compliance and not any other aspects of the building code. Engaging a TPA on the project requires the Project Team to provide the TPA with a Letter of Credit of the bank selected in that state. The 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.

During the Design Review stage, 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. During the Construction Review 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.

If ECMs that are required to meet ECBC are not found, the TPA notifies the project team and requests documentation or proof of specific ECMs. The TPA ensures that the EPI of the proposed building is reported consistently to BEE using the EConirman Tool. If the proposed building complies with ECBC, the TPA sends a Letter of Recommendation along with the checklist to the ULB and the SDA.

The ULB uses the TPAs recommendation in the local process of construction and occupancy approvals. The SDA compiles the records and authorizes the bank to release payments to the TPA for each milestone is completed deliverable.

3. TPA Framework :

In most of the states, officials were receptive of the proposed TPA framework. They stated a preference to use experts to provide TPA services to overcome potential barriers related to capacity to understand subject and approachability. ULB officials expressed a concern that TPAs as individuals are likely to be pressured and influenced into approving compliance.