

# **IEA - India Joint Workshop on Energy Efficiency in Buildings and Building Codes**

**4-5 October 2006**

**New Delhi, India**

## **1. Background**

### **India's Growing Concern for Energy Efficiency**

Energy efficiency have been recognized by the Government of India as a key to ensuring energy security. Energy efficiency and demand-side management can make a significant reduction in energy requirement without reducing energy services. Various activities are being undertaken for improving energy efficiency in different areas including in industries, agriculture, building design and construction; heating ventilation and air conditioning (HVAC); lighting and electrical appliances. Energy efficiency is considered important for sustaining the current pace of economic growth and also to increase the international competitiveness of the Indian industry.

Recognizing the need and benefits of efficient use of energy and its conservation, Government of India enacted the "Energy Conservation Act" (the Act) which came into force in March 2002 and Bureau of Energy Efficiency (BEE) was created as a central body responsible for promoting energy efficiency in the country. The Act provides the necessary legal and institutional framework to enable the Government to promote efficient use of energy and its conservation in different sectors of economy. BEE has developed an action plan focussing on ten thrust areas which, inter alia, includes Energy Efficiency in Buildings and Establishments and Energy Conservation Building Codes.

Construction industry in India is growing fast and therefore, the energy efficiency improvement in buildings is one of the thrust areas. Several states of India witnessing substantial construction activity, have launched initiatives to improve energy efficiency in buildings. A draft "Energy Conservation Building Codes" has been prepared and is under discussion with stakeholders.

### **IEA's cooperation in India's Energy Efficiency Program**

The Ministry of Power had signed an MOU with the International Energy Agency (IEA) in April 1998, which envisaged close cooperation between India and IEA in various sectors of energy and one important sector agreed for cooperation is Energy Efficiency. IEA-India conference on "Coal and Electricity in India", in September 2003 in New Delhi and "International Workshop on Standards and Labeling for Consumer Appliances in October, 2004 in Bangalore were held as a outcome of this MOU. Both events proved very popular with stakeholders consisting of manufacturers' associations, central and state governments, industrial organizations, electricity regulatory commissions, and NGOs.

The workshop on standard and labeling was the initial step in IEA-India collaboration on energy efficiency and conservation. During a meeting between Secretary ( Power) , Government of India and Executive Director , IEA held in February, 2006 at New Delhi, it was agreed to organize a similar seminar related to energy efficiency in buildings and building codes as India's construction industry was booming and consequently, the energy efficiency in buildings was another priority area for the Government.

Energy efficient buildings and building codes are also gaining importance in IEA member countries' policy agenda. IEA has gained

substantial experience in energy efficiency in building sector which can be gainfully utilized by India through this joint workshop.

## **2. Energy Efficiency in Buildings and Energy Conservation Building Codes Program in India**

Two thrust areas related to energy efficiency in buildings have been identified in India. Under the thrust area “Energy Efficiency in Commercial Buildings and Establishments” the focus is on improving energy efficiency in the existing building stock. Energy audit and implementation of energy efficiency measures in government buildings through energy service companies (ESCO) has been undertaken to set an example for others to follow. President House is the first building where energy conservation measures have been implemented.

Under the thrust area “Energy Conservation Building Codes” the core objective is to prescribe guidelines for energy conservation building codes for efficient use of energy and its conservation in the buildings and building complexes. These codes would be notified by the Central Government in consultation with state governments and other stake holders.

Energy Conservation Building Codes (ECBC) will be prepared for each of India’s six climatic zones for commercial buildings having connected load of 500 kW or 600 KVA. The codes will cover energy efficiency aspects of building envelope, material used in buildings, heating, ventilation and air conditioning systems, lighting systems, electric power and distribution systems, water heating and pumping systems and integration of renewable energy systems. The draft codes are under discussion with experts and concerned local authorities. State Governments will be able to amend the ECBC to suit regional and local climatic conditions.

### **3. Key Objective and Scope**

The Draft Energy Conservation Building Code proposes two different methods, the prescriptive approach and the energy performance method. The prescriptive approach prescribes ranges of efficiency for different aspects of building energy consumption. It is simpler for constructors and helps in general to harmonize the market as many construction companies will use the same solutions and products. Frequently, this will contribute to reducing costs of energy use in building over time. The energy performance model offers the possibility to take a more holistic approach towards energy consumption as it addresses the energy consumption of a building as a whole. This model tends to include more specialist details and gives credit to clever designs, advanced technology etc. However, it is advisable to include minimum requirements for the building shell within the overall energy performance method.

The main objectives of the workshop are to: -

(i) Provide participants with a comprehensive overview of key issues and perspectives on energy efficiency in buildings and building codes in India and IEA countries;

(ii) Discuss successful case studies and share lessons learnt from implementing and certifying performance of energy efficiency codes in IEA and non-IEA countries;

(iii) Familiarize policymakers with the cost-benefits and mechanics of creating and implementing a building code to encourage greater efficiency in building;

(iv) Introduce need for analysis of best practices in policies, codes and standards, estimates of potential, assessment of technologies and identification of end-use efficiency barriers

#### **4. Date and Venue**

The workshop will be held at Hotel Le Meridien, New Delhi, on 4<sup>th</sup> and 5<sup>th</sup> October 2006, extending over one and a half days and about 150-200 participants have been invited. About 5-6 speakers would be Indian experts and an equal number would be international experts. The workshop participants would be representing builders' associations and prominent builders, central and state Government agencies involved in building construction, urban development authorities, urban local bodies, manufactures associations, central and state governments and their agencies involved with energy efficiency and international organizations actively involved in energy efficiency programs in India.

Logistic arrangements in India will be made by the Ministry of Power.

#### **5. Outline Agenda**

The IEA Secretariat, the Ministry of Power and Bureau of Energy Efficiency has jointly prepared the outline of the agenda.