



# The Energy Conservation Act 2001 and Its Impact



**A.M .NARAYANAN**

**Energy Management Centre - Kerala**

**Thiruvananthapuram | 695017 | Kerala | [www.keralaenergy.gov.in](http://www.keralaenergy.gov.in)**

# Policy Instruments Types

<b>Legislative instruments</b>	<b>Laws &amp; regulations</b>
	<b>Standards</b>
	<b>Codes of practice</b>
<b>Economic instruments</b>	<b>Fiscal</b>
	<b>Subsidies</b>
	<b>Property &amp; tradable rights</b>
	<b>Bonds &amp; deposit funds</b>
	<b>Liability systems</b>
<b>Voluntary instruments</b>	<b>Voluntary agreements</b>
	<b>Programs &amp; projects</b>
	<b>Research &amp; development</b>

# Legislative instruments: Definitions

- **Laws & regulations:**
  - Law: legal rules that govern a specific action, process, product etc.
  - Regulation: outlines how the law should be implemented
- **Standards:** provide technical and design guidance notes (e.g. for equipment)
- **Codes of practice:** give practical advice / guidance on how to comply with legislation (e.g. Building Code)

**MINISTRY OF LAW, JUSTICE AND COMPANY AFFAIRS**

**(Legislative Department)**

**New Delhi, the 1st October, 2001/ Asvina 9, 1923 (Saka)**

**The following Act of Parliament received the assent of the President on the 29th September, 2001, and is hereby published for general information:--**

**THE ENERGY CONSERVATION ACT, 2001**

**No 52 OF 2001**

**[29th September 2001]**

**An Act to provide for efficient use of energy and its conservation and for matters connected therewith or incidental thereto.**

**BE it enacted by Parliament in the Fifty second Year of the Republic of India as follows**

## **Definition: Sec. 2(h)**

“energy” means any form of energy derived from fossil fuels, nuclear substances or materials, hydro-electricity and includes electrical energy or electricity generated from renewable sources of energy or bio-mass connected to the grid;

## **Definition Sec. 2(i)**

“energy audit” means the verification, monitoring and analysis of use of energy including submission of technical report containing recommendations for improving energy efficiency with cost benefit analysis and an action plan to reduce energy consumption;

## **CHAPTER II**

### **BUREAU OF ENERGY EFFICIENCY**



With effect from such date as the Central Government may, by notification, appoint, there shall be established, for the purposes of this Act, a Bureau to be called the Bureau of Energy Efficiency

# Bureau of Energy Efficiency (BEE)



- + The Government of India set up (BEE) (<http://www.bee-india.nic.in>) on 1st March 2002
- + The mission :
  - assist in developing policies and strategies with a thrust on self-regulation and market principles, within the overall framework of the Energy Conservation Act, 2001 with the primary objective of reducing energy intensity of the Indian economy.
  - This will be achieved with active participation of all stakeholders, resulting in accelerated and sustained adoption of energy efficiency in all sectors



## **Sec. 13(2)(b)**

recommend to the Central Government the particulars required to be displayed on label on equipment or on appliances and manner of their display under clause *(d)* of section 14;

# Why Standards & Labeling Program?

- Wide variation in energy consumption by products of manufacturers is observed.
- Information on energy consumption is often not easily available, sufficient or easy to understand from the nameplate.
- Lead to continued manufacture and purchase of inefficient equipments and appliances.

## **mandatory minimum EE Std world over...**

- **First introduced in Poland , 1962.**
- **Russia from 1960 onwards.**
- **French Govt. introduced for refrigerator (1968) and freezers (1978).**
- **The state of California, U.S in 1976**
- **Around the world 43 governments introduced the standards and labeling during 2000 and it is increased to 65 in the year 2007**
- **Recently, a number of countries have initiated programs of voluntary endorsement labeling for energy efficient products.**
- **Many other countries including Australia, Canada, China, Brazil,**
- **Thailand, Japan, and the United Kingdom (U.K.) have subsequently implemented national programs**

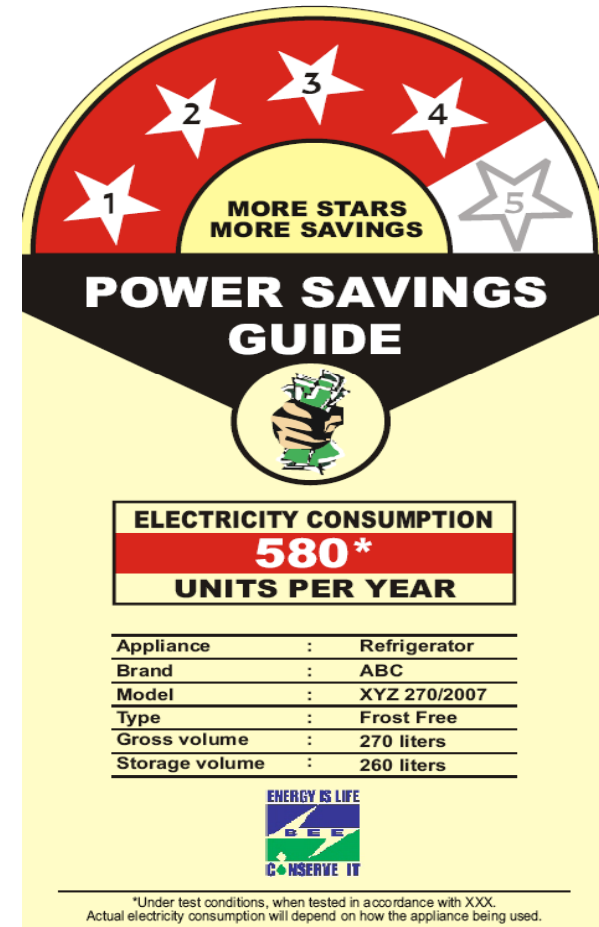
# Standards & Labeling

## Standard

Energy-efficiency standards are procedures and regulations that prescribe the energy performance of manufactured products, sometimes prohibiting the sale of products that are less energy efficient than the minimum standard, often called Minimum Energy Performance Standards (MEPS).

## Label

Energy-efficiency labels are informative labels affixed to manufactured products to describe the product's energy performance (usually in the form of energy use, efficiency, or energy cost); these labels give consumers the data necessary to make informed purchases



## **Sec. 13(2)(c)**

recommend to the Central Government for notifying any user or class of users of energy as a designated consumer under clause (e) of section 14;

- ❏ EC Act provides list of energy intensive industries and other establishments to be notified as designated consumers (DCs)
- ❏ Nine sectors have been notified as DCs

DCs are required to:

- Appoint or designate energy managers
- Get energy audits conducted by accredited energy auditors
- Implement techno-economically viable recommendations
- Comply with energy norms
- Submit report on steps taken

**Gazette of India Part II Sec 3 Sub-sec(ii) 19-03-2007**

**Gazette of India - Ministry of Power - The Central Government notifies the 9 energy intensive industries as designated consumers under The EC Act 2001**

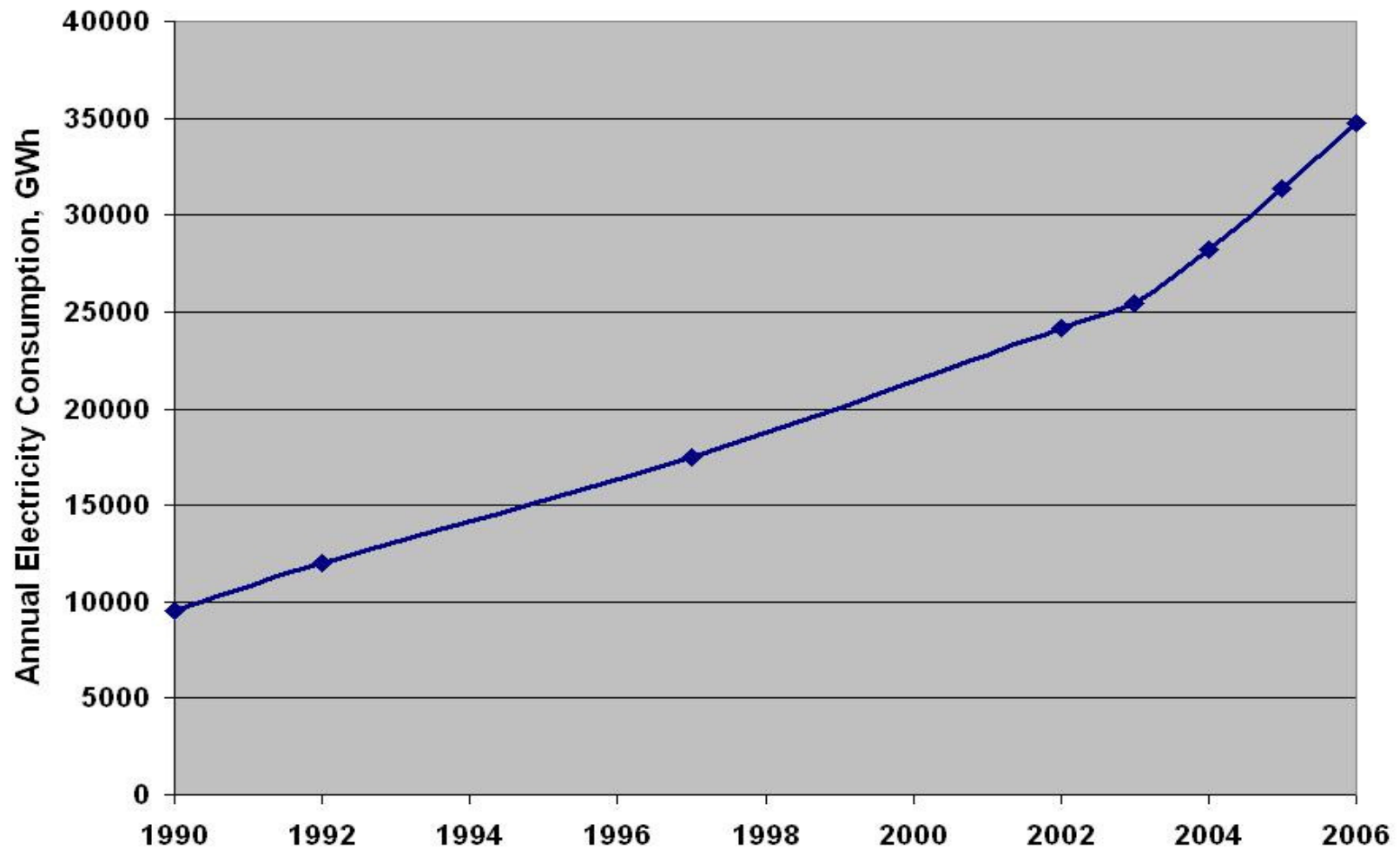
- 1) Thermal Power Stations - 30,000 metric tonne of oil equivalent (MTOE) per year and above
  - 2) Fertilizer - 30,000 metric tonne of oil equivalent (MTOE) per year and above
  - 3) Cement - 30,000 metric tonne of oil equivalent (MTOE) per year and above
  - 4) Iron & Steel - 30,000 metric tonne of oil equivalent (MTOE) per year and above
  - 5) Chlor-Alkali - 12,000 metric tonne of oil equivalent (MTOE) per year and above
  - 6) Aluminium - 7,500 metric tonne of oil equivalent (MTOE) per year and above
  - 7) Railways - electric traction Sub-Section(TSS),diesel loco shed, Production units and Workshops of Indian Railways having total annual energy consumption of 30,000 MTOE or more under Ministry of Railways (as per table)
  - 8) Textile - 3,000 metric tonne of oil equivalent (MTOE) per year and above
  - 9) Pulp & Paper - 30,000 metric tonne of oil equivalent (MTOE) per year and above
- Energy Conversion values used for working out annual energy consumption in terms of metric tonne of oil equivalent

## **Sec.13(d)**

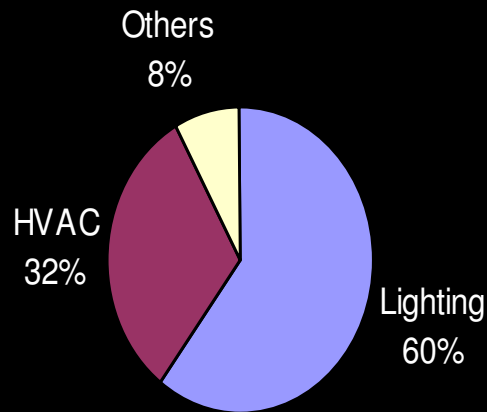
take suitable steps to prescribe guidelines for energy conservation building codes under clause (p) of section 14;



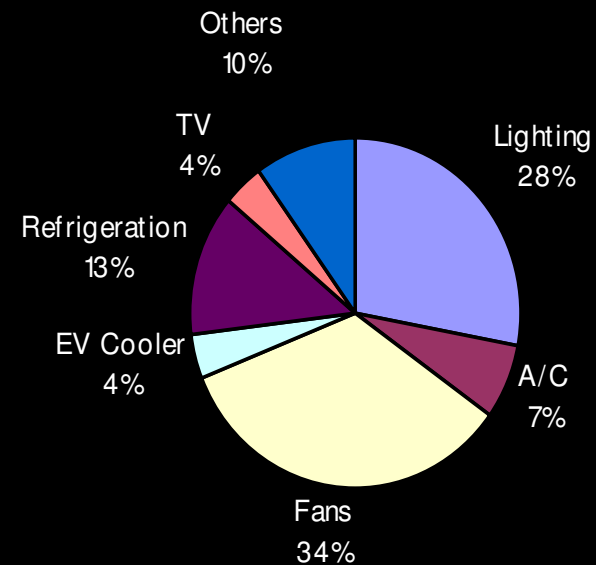
# Electricity Use in the Commercial Sector is increasing !



# Energy Consumption in the Commercial and Residential Buildings



**Commercial buildings**  
**33 billion units**



**Residential buildings**  
**116 billion units**

# ECBC Scope

- Mandatory Scope Covers commercial buildings
- Applies to New Construction only
- Building components included
  - Building Envelope (Walls, Roofs, Windows)
  - Lighting (Indoor and Outdoor)
  - Heating Ventilation and Air Conditioning (HVAC) System
  - Solar Water Heating and Pumping
  - Electrical Systems (Power Factor, Transformers)

**Sec. 13(e):** take all measures necessary to create awareness and disseminate information for efficient use of energy and its conservation;

**Sec.13(f):** arrange and organize training of personnel and specialists in the techniques for efficient use of energy and its conservation;

Sec. 13(p) specify, by regulations, qualifications for the accredited energy auditors;

Sec. 13(q) specify, by regulations, the manner and intervals of time in which the energy audit shall be conducted ;

Sec. 13(r) specify, by regulations, certification procedures for energy managers to be designated or appointed by designated consumers;

**CHAPTER V**  
**POWER OF CENTRAL GOVERNMENT**  
**TO FACILITATE AND ENFORCE EFFICIENT USE OF ENERGY**  
**AND ITS CONSERVATION**

- ◆ **Sec 14(a):** specify the norms for processes and energy consumption standards for any equipment, appliances which consumes, generates, transmits or supplies energy;
- ◆ **Sec 14(b):** specify equipment or appliance or class of equipments or appliances, as the case may be, for the purposes of this Act;
- ◆ **Sec 14(c):** prohibit manufacture or sale or purchase or import of equipment or appliance specified under clause (b) unless such equipment or appliances conforms to energy consumption standards;

- **Sec 14(d):** direct display of such particulars on label on equipment or on appliance specified under clause (b) and in such manner as may be specified by regulations;
- **Sec 14(e):** specify, having regard to the intensity or quantity of energy consumed and the amount of investment required for switching over to energy efficient equipments and capacity or industry to invest in it and availability of the energy efficient machinery and equipment required by the industry, any user or class of users of energy as a designated consumer for the purposes of this Act;

**CHAPTER VI**  
**POWER OF STATE GOVERNMENT**  
**TO FACILITATE AND ENFORCE EFFICIENT USE OF ENERGY**  
**AND ITS CONSERVATION**

- (a) amend / and notify ECBC
- (b) direct every owner or occupier \_ provisions of ECBC
- (c ) direct, DC s to get energy audit conducted by an accredited energy auditor
- (d) designate any agency as designated agency to coordinate, regulate and enforce provisions of this Act
- (e) take all measures necessary to create awareness and disseminate



**CHAPTER VI**  
**POWER OF STATE GOVERNMENT**  
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- (f) arrange and organise training of personnel and specialists
- (g) take steps to encourage preferential treatment for use of energy efficient equipment or appliances;
- (h) direct, any designated consumer to furnish to the designated agency, information with regard to the energy consumed
- (i) specify the matters to be included for the purposes of inspection under sub-section (2) of section 17;

## **Sec. 16:**

The State Government shall constitute a Fund to be called the State Energy Conservation Fund for the purposes of promotion of efficient use of energy and its conservation within the State.

## **Sec. 17**

The designated agency may appoint, after the expiry of five years from the date of commencement of this Act, as many inspecting officers as may be necessary for the purpose of ensuring compliance with energy consumption standard specified under clause (a) of section 14 or ensure display of particulars on label on equipment or appliances specified under clause (b) of section 14 or for the purpose of performing such other functions as may be assigned to them

## **Sec. 18**

The Central Government or the State Government may, in the exercise of its powers and 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

# CHAPTER VIII

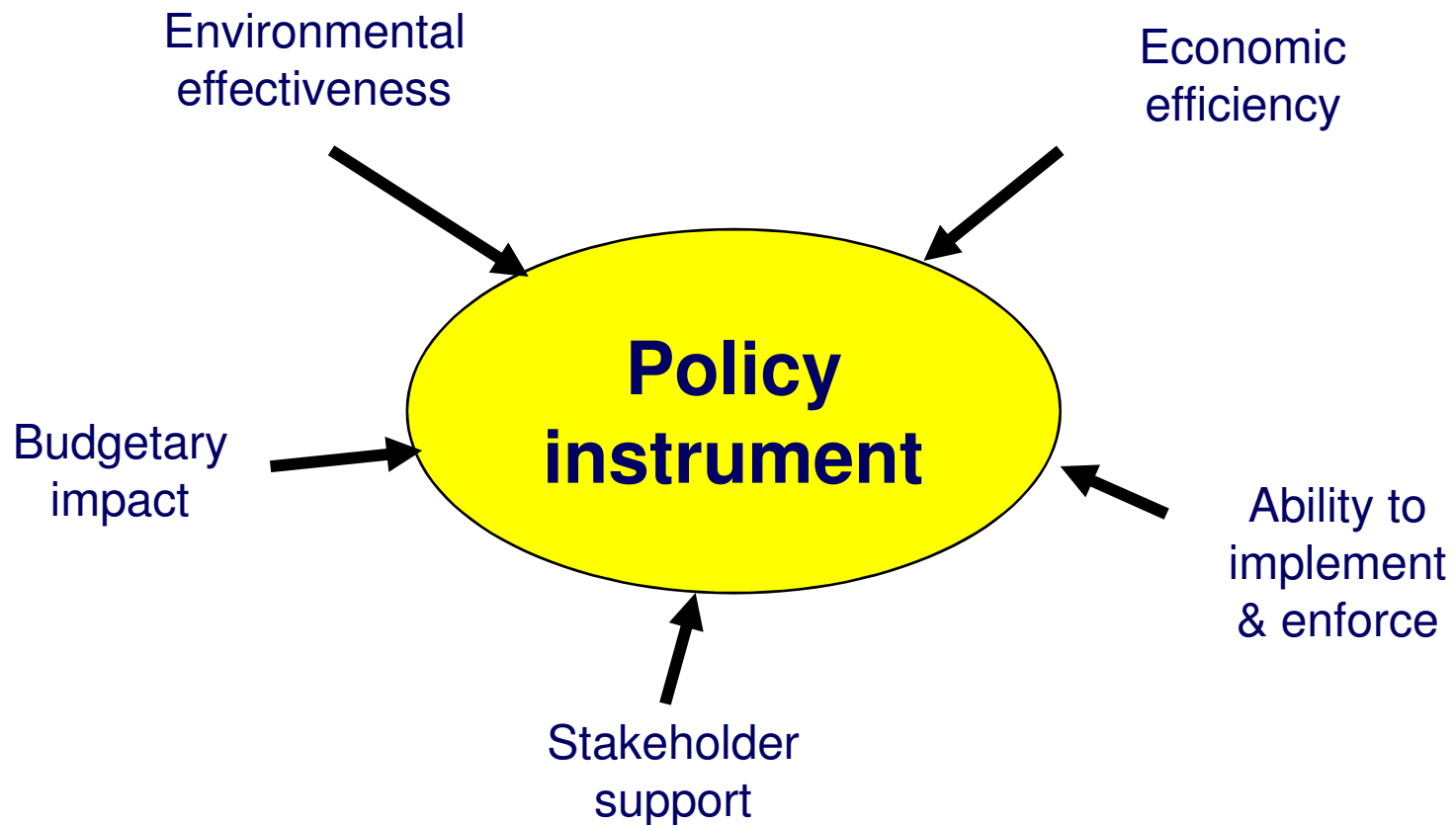
## PENALTIES AND ADJUDICATION

- If any person fails to comply with the provision of clause (c) or the clause (d) or clause (h) or clause (i) or clause (k) or clause (l) or clause (n) or clause (r) or clause (s) of section 14 or clause (b) or clause (c) or clause (h) of section 15, he shall be liable to a penalty which shall not exceed ten thousand rupees for each such failures and, in the case of continuing failures, with an additional penalty which may extend to one thousand rupees for every day during which such failures continues:
- Provided that no person shall be liable to pay penalty within five years from the date of commencement of this Act.

To establish an effective interface between the key actors, namely industry, certified energy managers, accredited energy auditors, industrial equipment manufacturers, and household appliance manufacturers

Changing consumer behaviour when it comes to purchasing and operating energy-intensive equipment

# How to evaluate policy instruments: 5 evaluation criteria



A pair of hands is shown holding a small, translucent globe of the Earth. The globe is centered in the image, with the hands positioned on either side, fingers gently gripping it. The background is a vibrant green, featuring a large, glowing sun-like shape behind the hands. The overall composition is clean and focused on the central theme of environmental care.

**Save Energy Save our Planet**

**Thank You**