

# **SCHEME FOR BEE STAR RATING FOR SHOPPING MALLS**

**DETAILS OF THE SCHEME FOR RATING OF SHOPPING MALLS  
JANUARY, 2011**



Bureau of Energy Efficiency  
Ministry of Power, Govt. of India,  
4<sup>th</sup> Floor, Sewa Bhawan,  
R.K.Puram, New Delhi -66

## BEE Star Rating for Shopping Malls

### 1. Scheme for Star rating of Shopping Malls

- a. Energy audit studies in buildings have shown large potential for energy savings in commercial Shopping Malls. Study of the available data has shown that there is an urgent need for improved energy efficiency of buildings.
- b. National commercial energy benchmarking initiative was taken up with a goal to establish a framework to standardize energy data collection, baseline setting for “typical” commercial buildings, energy performance target setting and monitoring, and use the information to improve energy efficiency in buildings. This information can help the users and other stakeholders to evaluate building energy efficiency and track improvements compared to other buildings and recognize the top performers.
- c. The Star Rating Program for buildings would create a demand in the market for energy efficient buildings **based on actual performance of the building** in terms of specific energy usage. This programme would rate Shopping Malls on a 1-5 Star scale with 5 Star labeled buildings being the most efficient.
- d. Five categories of buildings - Shopping Malls, hotels, hospitals, office building, and IT Parks in five climate zones in the country have been identified for this programme.
- e. The programme targets the following 4 climatic zones for air-conditioned Shopping Malls:
  - i. Warm and Humid
  - ii. Composite
  - iii. Hot and Dry
  - iv. Temperate

**It will be subsequently extended to other climatic zones.**
- f. To apply for rating of Shopping Malls, a standardized format is developed for collection of actual energy consumption: data required includes building’s built up area, conditioned and non-conditioned area, type of building, hours of operation of the building in a day, climatic zone in which building is located, and other related information of the facility.
- g. The Technical Committee constituted for Energy Base lining and benchmarking of commercial buildings chaired by Director General, Bureau of Energy Efficiency shall be the technical committee for the scheme.

### 2. Scheme Participation Process

- i. Building owner(s)/or their authorized representatives can participate in the scheme by registering with the Bureau. Those buildings having a connected load of **100 kW** and above would be considered for BEE star rating scheme. The format for submitting Building Information and Energy Data details is enclosed as **Annexure 1**.
- ii. Building owner can register for each building either manually or electronically. Initially the applications would be scrutinized on manual submission. The application for each building shall be accompanied by non – refundable registration fee of Rs.1,00,000 (Rupees One Lakh) in the form of a crossed bank draft issued in the name of Bureau of Energy

Efficiency and payable at New Delhi. The form can be downloaded from the BEE's website and the building owner shall file their applications electronically/manually including the details of the crossed bank draft and shall submit the same to BEE.

- iii. Building owner(s)/ or their authorized representatives (hereinafter called the User of label) will enter into an agreement (**Annexure – 2**) on a non-judicial stamp worth Rs.100/- (rupees one hundred only), with the Bureau of Energy Efficiency (hereinafter called the Bureau) agreeing to abide by the terms and conditions of the scheme. The agreement will be valid for a period of 5 years.
- iv. Energy Performance Index (EPI) in kWh / sqm/ year will be considered for rating the mall. The table indicating the EPI with the corresponding Star Label under the various climatic zones are enclosed at **Annexure -3**.
- v. EPI shall be kWh/sqm/year in terms of purchased & generated electricity divided by built up area in sqm. However the total electricity would not include electricity generated from on-site renewable sources such as solar photovoltaic etc.
- vi. After receiving the complete application for BEE star rating of the shopping mall building, the Bureau would scrutinize the application, and seek further information, if required. The Bureau would authorize the use of label after completion of the scrutiny of the application. The Bureau will have the right to conduct an energy audit or any other form of assessment of the information, provided by the builder whenever there are grounds for the same.
- vii. User of the label (building owner) shall be given a time frame of one month after the expiry of the each year to file the Building Information and Energy Data for the previous year, failing which BEE shall inform the owner of the lapse and after the expiry of the notice period of one month, the authority shall be withdrawn temporarily and owner shall be requested to furnish the information. The entire communication shall take place for a maximum period of six months failing which the authority shall be permanently withdrawn for the building and information shall be uploaded on BEE's website and put out in public domain.
- viii. **Adherence to label specification:** The user of label is solely responsible for the adherence to the specification of the label prescribed by BEE (as enclosed at Annexure 4), and the authenticity of the documents submitted. However, in the case of a new building, the Building owner(s)/ or their authorized representatives would be required to submit the detailed information in respect of the building and its energy performance after completion of 1 year of operation with full occupancy of the building.
- ix. The user of label will affix the label as per the label design and specification both in terms of size and material, manner of display, and the rating plan prescribed for the particular building type.
- x. The manner of display of the label would be such that it is at a place of prominence at the entrance of the building and at a height of 5 feet as measured from the bottom of the label with respect to the floor level.
- xi. A list of BEE labelled buildings will be maintained by the Bureau and made available to the public through publications and through its web site.

- xii. The user of label shall be solely responsible for ensuring :
  - a. The accuracy of the information displayed on the label or any public claim for label level
  - b. Compliance to the terms and condition of the scheme,
  - c. Directions of the Bureau on the implementation of the scheme
  - d. Payment of any compensation adjudicated by any court/tribunal to any person for any information displayed on the label.
- xiii. The Bureau will work towards creating a market for energy efficient buildings through awareness and education.
- xiv. The Bureau will appoint an independent agency to evaluate the program impact and process of implementation on a periodic basis. This will help the users and other stakeholders to evaluate building's energy efficiency and track improvements compared to other buildings and recognize the top performers through a systematic evaluation scheme for giving state and national awards.
- xv. The user of label shall extend full cooperation to BEE or its associates by providing the relevant data for the purpose.
- xvi. The Bureau will review the scheme periodically to determine the need for revision or amendment or termination of the scheme.
- xvii. The Bureau, at any time during the operation of the scheme, may decide to terminate or modify the scheme after giving sufficient notice period.
- xviii. The User of Label, at any time during the operation of the scheme, may decide to withdraw from the scheme after giving three months notice period to the Bureau as well as a public notice.

### **3. Label verification Process**

- i. The Bureau through its authorized representatives would verify the label content and the manner of display on the building.
- ii. The Bureau will conduct regular sample checking of building for accuracy of the information provided by the building owner and the EPI either on its own or through a third party. This sample checking may be conducted without prior notice. The results of the sample check will be put in the public domain.
- iii. The user of the label would agree to make available the drawings of the building/facility and provide access to the building to the authorized representative of the Bureau.
- iv. If it is found that the building does not conform to the authorized label specification then a second check will be done with an authorized representative of the building owner. The date and time for the second check will be decided by the Bureau and the Mall Building owner will be informed at least 24 hours in advance and if no representative is present then the second check results will be binding on the building owner.

- v. The result of the second check along with the information provided in the form “Building Information and Energy Data” will be put out in the public domain including an advertisement in newspaper, together with withdrawal of the authority to use the label.

#### **4. Challenge testing**

- i. The label contents can be challenged by any other star rated shopping mall building owner.
- ii. The challenge must be submitted to BEE in writing along with a challenge test fee of Rs.1,00,000(Rupees one lakh) in the form of a demand draft in favour of Bureau of Energy Efficiency. If the challenge test fails then this amount will be forfeited.
- iii. The BEE will examine the challenge within a reasonable time frame on receipt of the same in writing.
- iv. After BEE finds the reasonableness of the challenge test it will notify a date and time for checking the building either by its officers or by a third party in the presence of representative of the building owner and challenger/ representative. The results of checking will be shared with building owner(s) and challenger.
- v. If the shopping mall building fails the star label authority then the cost of the check testing will be borne by the building owner and the deposit of Rs.1,00,000 (Rupees one lakh) will be returned to the challenger. The Bureau will bring out the results of the challenge testing in public domain along with information provided in form for “Building information and Energy data”, together with withdrawal of the authority to use the label.

**BEE Star Rating for Shopping Mall**

Name of the Building:

City:

**Table 1: Building Information and Energy Data**

| Primary Data |  | Year:   |  |
|--------------|--|---|--|
| No.          | Item   | Value   |  |
| 1            | Connected Load (kW) or Contract Demand (kVA)   |   |  |
| 2            | Installed capacity: DG/ GG Sets (kVA or kW)  |   |  |
| 3            | a) Annual Electricity Consumption, purchased from Utilities (kWh)  |   |  |
|              | b) Annual Electricity Consumption, through Diesel Generating (DG)/Gas Generating (GG) Set(s) ( kWh)  |   |  |
|              | c) Total Annual Electricity Consumption, Utilities + DG/GG Sets (kWh)  |   |  |
| 4            | a) Annual Cost of Electricity, purchased from Utilities (Rs.)  |   |  |
|              | b) Annual Cost of Electricity generated through DG/GG Sets (Rs.)   |   |  |
|              | d) Total Annual Electricity Cost, Utilities + DG/GG Sets (Rs.)   |   |  |
| 5            | Area of the building (exclude parking, lawn, roads, etc.)  | a) Built Up Area (sqm)(Excluding Basement Area)                   |  |
|              |  | ○ Conditioned Area(in sqm)  |  |
|              |  | ○ Conditioned Area(as % of built up area)                         |  |
| 6            | Working hours (e.g. day working 24, 18, 16 hour working)   |   |  |
| 7            | Working days/week (e.g. 5/6/7 days per week)   |   |  |
| 8            | a) Office  | Total no. of Employees  |  |
|              |  | Average .no. of Persons at any time in office during office hours |  |
| 9            | a) Installed capacity of Air Conditioning System (TR) and KW   |   |  |
| 10           | Installed lighting load (kW) ( if available)   |   |  |
| 12           | HSD (or any other fuel oil used, specify)/Gas Consumption in DG/GG Sets (liters/cu. meters) in the year  |   |  |
| 13           | Fuel (e.g. FO, LDO,LPG, NG) used for generating steam/water heating in the year (in appropriate units)   |   |  |
| 14           | EPI(Average Annual Energy Performance Index) in kWh/sq. m/annum<br>Energy includes electricity purchased and generated ( excluding electricity generated from on-site renewable resources) |   |  |
| 15           | Star Label applied for   |   |  |

I hereby declare that the building is fully occupied for the last one year and all the above furnished information is true in all respect

Signature of the building owner  
or authorized representative

### BEE Star Rating for Shopping Malls

Name of the Building:

City:

**Table 1: Building Information and Energy Data**

| No. | Details                  |  |
|-----|--------------------------|--|
|     | <b>Organization</b>      |  |
| a)  | Name of the Organization |  |
| b)  | Postal Address           |  |
| c)  | Phone No.                |  |
|     | <b>Contact Person</b>    |  |
| a)  | Name & Designation       |  |
| b)  | E-mail Address           |  |
| c)  | Phone Nos.               |  |

|    |                       |  |
|----|-----------------------|--|
| a) | Name of the Architect |  |
| b) | Postal Address        |  |
| c) | Phone No.             |  |

|                        |  |
|------------------------|--|
| Name of the Contractor |  |
| Postal Address         |  |
| Phone No.              |  |

**Application Form for Participation and Agreement**  
**Application for Participation in the BEE Star Rating of Shopping Malls**  
*(ON THE LETTER HEAD OF THE COMPANY/FIRM)*

The Director General  
Bureau of Energy Efficiency  
4<sup>th</sup> Floor, Sewa Bhawan,  
R.K.Puram  
New Delhi-66

I/We are the Building owner(s)/authorized representative of \_\_\_\_\_  
(building name and address) owned by \_\_\_\_\_ (full name of developer/firm)  
hereby apply for participation in the scheme “**BEE Star Rating of Shopping Malls**”.

I/We have gone through the scheme for **the BEE Star Rating of Shopping Malls**, and we agree to abide by the terms and conditions of the scheme. I/We am/are willing to enter into an agreement for participating in the scheme. The duly signed complete agreement is enclosed.  
Dated this ..... Day of .....(Year)

Signature .....

Name .....

Designation .....

For and on behalf of .....

.....

(Name of the firm)

Encl: Agreement



## AGREEMENT

**Agreement between the Bureau of Energy Efficiency, a statutory body under the Ministry of Power and Building owner(s)/authorized representative (the user of label) under the “BEE Star Rating of Shopping Malls”.**

Whereas the Bureau of Energy Efficiency, Ministry of Power (hereinafter referred to as the Bureau), a statutory body established under the Energy Conservation Act 2001, (52 of 2001)& amended with its office at Bureau of Energy Efficiency 4<sup>th</sup> Floor, Sewa Bhawan, R.K.Puram, New Delhi-66 India has launched a scheme for **BEE Star Rating of Shopping Malls”**.

Whereas M/s \_\_\_\_\_ ( Building owner(s)/authorized representative) having its registered office at \_\_\_\_\_ (full address) has agreed to participate under the **“BEE Star Rating of Shopping Malls”** (hereinafter referred to as the user of label)

Now therefore, the parties hereto mutually agree as follows:

### **1. General**

#### **1.1 Commencement and duration**

1.1.1 The agreement shall be valid for a period of 5 years commencing from the date it is signed **or until Notification under -----** of the Energy Conservation Act 2001 issued by the Central Government, whichever is earlier.

#### **1.2 Objective**

The main objective of this Agreement is that both the parties to the Agreement shall work together to implement the scheme for **“BEE Star Rating of Shopping Malls”** in accordance with the details of the Scheme as attached.

#### **1.3 Use of energy efficiency label**

1.3.1 The label is being promoted by the Bureau. The use of the label is assigned to M/s ABC (Building owner(s)/authorized representative) for achieving the objective defined in Article 1.2 of this Agreement.

Format for submitting Building Information and Energy Data details is enclosed as **Annexure 1.**

Energy Performance Index (EPI) in kWh / sqm/ year will be considered in rating the buildings. The table indicating the EPI band width with the corresponding Star Label under the various climatic zones is enclosed at **Annexure 3.**

The user of label is solely responsible for the adherence to the specification of the label prescribed by BEE (as enclosed at **Annexure 4**), and the authenticity of the documents submitted

### **2. Taxes and duties**

2.1 The User of label shall also bear any taxes, duties, levies, registration fee, etc as applicable from time to time in the use of label under the implementation of the scheme for **“BEE Star Rating of Shopping Malls”**

**3. Amendment / Additions**

3.1 If both parties to the Agreement form an opinion that any or some provision of the scheme are coming in the way of achievement of the objective of this Agreement defined in Article 1.2; and both BEE and the user of label are satisfied that the adjustment or amendment of such provisions shall contribute towards the achievement of the objective defined in Article 1.2; BEE may, adjust or amend such provisions of the scheme at any stage during the implementation of the scheme in consultation with other stakeholders

3.2 Any such adjustment or amendment shall be made in writing.

**4. Notice**

4.1 Any notice given by any of the parties hereunder shall be sent in writing at the address given as follows:

(1) **Bureau of Energy Efficiency**

The Director General  
Bureau of Energy Efficiency  
4<sup>th</sup> Floor, Sewa Bhawan,  
R.K.Puram  
New Delhi-66

(2) **User of label**

In witness whereof the parties hereto have signed this Agreement

Signature.....  
(place, date)  
Bureau of Energy Efficiency  
Witness: 1  
: 2

Signature.....  
(place, date)  
User of label  
Witness: 1  
: 2

### Annexure 3

#### Energy Performance Index (EPI) band width (in kWh / sqm/ year)

#### Bandwidths for Shopping Malls

##### Composite Climate

| EPI<br>(kWh/Sqmtr/Year) | Star Label |
|-------------------------|------------|
| 350-300                 | 1star      |
| 300-250                 | 2star      |
| 250-200                 | 3star      |
| 200-150                 | 4star      |
| below 150               | 5 star     |

##### Hot and Dry

| EPI<br>(kWh/Sqmtr/Year) | Star Label |
|-------------------------|------------|
| 300-250                 | 1 star     |
| 250-200                 | 2 Star     |
| 200-150                 | 3 Star     |
| 150-100                 | 4 Star     |
| below 100               | 5 Star     |

##### Temperate

| EPI<br>(kWh/Sqmtr/Year ) | Star Label |
|--------------------------|------------|
| 275-250                  | 1 star     |
| 250-225                  | 2 star     |
| 225-200                  | 3 star     |
| 200-175                  | 4star      |
| Below 175                | 5 star     |

## Warm and Humid

| <b>EPI<br/>(kWh/Sqmtr/Year)</b> | <b>Star Label</b> |
|---------------------------------|-------------------|
| <b>450-400</b>                  | 1 star            |
| <b>400-350</b>                  | 2 star            |
| <b>350-300</b>                  | 3 star            |
| <b>300-250</b>                  | 4 star            |
| <b>below 250</b>                | 5 star            |

**Annexure 4**

**Format for adherence to the specification of the label**

## Some Important Terminology

**Shopping Mall-** Shopping Mall is commercial retail shop air-conditioned building, primarily used for shopping purposes. It is assumed that the hours of operation are more than 12 hours.

**Built up area -** Built up area is the carpet area + area covered by thickness of walls+ balconies etc. and would exclude basement and parking areas. In case basement is being utilized for shopping operations then its area should be included.

**Connected Load-** It is the total load that a customer can impose on the electrical system if everything was connected at one time. Connected load can be measured in horsepower, watts, or volt-amperes. Some rate schedules establish a minimum demand charge by imposing a fee per unit of connected load.

**EPI :** EPI (kwh/ Sq m /Year ) is defined as Energy Performance Index of a Building. This value is calculated from total annual electricity purchased and generated (i.e. annual kwh) consumption per square meter area of shopping mall building. (Excluding electricity generated from on-site renewable resources)

**Kilowatt-hour (kwh) -** A unit of electrical measurement indicating the spending of 1,000 watts for one hour. Higher quantities are expressed in megawatt-hours, or the expenditure of one million watts for one hour.

**Voltage (v) –** It is the force that causes current to flow through a conductor. One volt equals the force required to produce a current flow of one ampere through a resistance of one ohm. Potential energy; is a measure of the difference in electrical potential of two points.

**Watt (w) -** A measure of real power. Power required to do work at the rate of one joule per second. It is the power expended when one ampere of direct current flows through a resistance of one ohm under a pressure of one volt. It is analogous to horsepower or foot-pounds per minute of mechanical power.

**Power -** The time rate of generating, transferring, or using electric energy, usually expressed in kilowatts.

**Contract Demand:** A customer's contract demand is the amount of power which a customer agrees to pay to have available at all times. Because this refers to power which must be made available, as opposed to energy which can actually be consumed, contract demand is measured in kilowatts, not kilowatt-hours.

**Energy Audit:** An energy audit is a preliminary activity towards instituting energy efficiency programs in an establishment. It consists of activities that seek to identify conservation opportunities preliminary to the development of an energy savings program.