

Schedule for Star Rating of Commercial Buildings

Office Buildings

1. **SCOPE:**

The programme targets the following 3 climatic zones for air-conditioned and non- air-conditioned office buildings:

- i. Warm and Humid
- ii. Composite
- iii. Hot and Dry

Those buildings having a connected load of 100 kW and above would be considered for BEE star rating scheme.

2. **TERMINOLOGY:**

- a) **Government Buildings:** The buildings owned/managed by Central/State Govt. or Statutory Body or Indian Railways etc. **OR** any building used or required for the public service or for any public purpose, which is the property, or in the occupation, of the Central/State Government, or which is to be erected on land which is the property, or in the occupation, of the Central/State Government.
- b) For the purpose of Star Rating the office buildings is categorised in three types. These categories are based on built-up Area (BUA) and in-line with the categories in ECBC 2017 and are as follows:
- i. **Large offices:** Buildings having built up area more than thirty thousand square meter ($BUA > 30,000 \text{ m}^2$).
 - ii. **Medium offices:** Buildings having built up area ranging between thirty thousand square meter and ten thousand square meter ($30,000 \text{ m}^2 \leq BUA < 10,000 \text{ m}^2$).
 - iii. **Small offices:** Buildings having built up area less than ten thousand square meter ($BUA \leq 10,000 \text{ m}^2$).
- c) **User of label:** The owner of building or authorised representative who applies for the Star Rating of his premise/s. The authorised representative must be a person employed with the organisation which owns/manage the building. Any other firm/third party/outside person will not be entertained for the application/renewal process. The building owner has to submit the contact details of the authorised representative and all the correspondences will be sent to that person only. In case the authorised representative/contact person is changed it would be the responsibility of the owner to inform the BEE about the change and to provide updated contact details.
- d) **Energy Performance Index (EPI):** Electricity purchased & generated 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.

[Electricity purchased and generated (excl. generated from on-site RE resources)] ÷ [Built Up Area excluding Basement parking, lawn, roads, etc. (in sqm.)]

It is calculated as:

Energy Performance Index (EPI) in kWh/m²/year will be considered for rating the building.

- e) **IAME:** It is an abbreviation for Independent Agency for Monitoring and Evaluation. The Bureau will appoint an independent agency to evaluate the program impact and process of application on periodic basis.

3. SCHEME PARTICIPATION PROCESS:

- i. To apply for “Star Rating of Office Building”, 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. The format for application and submitting Building Information and Energy Data details is enclosed as **Annexure-A** and **Annexure-I** respectively (.docx file is available on BEE website, which may be downloaded and filled by the applicant).
- 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 the non – refundable registration fees. The fees can be submitted either electronically (print of the receipt would be required to be sent with application) or in the form of a crossed bank draft issued in the name of Bureau of Energy Efficiency payable at New Delhi. The fees structure for registration and renewal is provided in **Section-5**.
- iii. Building owner(s)/ or their authorized representatives will enter into an agreement (as **Annexure-B**) on a non-judicial stamp paper 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 three years from the date of issuance of the certificate for Star rating.
- iv. After receiving the complete application for the building, the Bureau would scrutinize the application, and seek further information, if require. 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 regarding the information provided by the builder whenever there are grounds for the same.

4. **RENEWAL PROCESS:** For renewal of the Star Rating, the applicant has to apply for renewal within six months from the date of expiry of validity period (i.e., three years from the date of issuance of Certificate). All the documents as required for registration has to be submitted with latest data/information. Fees for renewal is given in **Section-5**.

After submitting the documents and requisite fees, BEE will verify the data and after the assessment appropriate certificate and plaque will be issued.

Note: If the owner fails to apply within three months from date of expiry of the existing star rating validity period the application will be considered as new application and registration fees for new application will be applicable.

5. FEES

Registration Fees*	
For Large Office Buildings (Built up Area > 30,000 sqm.)	Rs. 1 Lakh/Project
For Medium Office Buildings (10,000 sqm. < Built up Area ≤ 30,000 sqm.)	Rs. 75 Thousands
For Small Office Buildings (Built up Area ≤10,000 sqm.)	Rs. 50 Thousands
Renewal (with upgradation) or only upgradation* (On request of building owner before expiry of validity period)	
For Large Office Buildings (Built up Area > 30,000 sqm.)	Rs. 25 Thousands
For Medium Office Buildings (10,000 sqm. < Built up Area ≤ 30,000 sqm.)	Rs. 20 Thousands
For Small Office Buildings (Built up Area ≤10,000 sqm.)	Rs. 15 Thousands
Renewal (without upgradation) or Downgrading*	
For Large Office Buildings (Built up Area >30,000 sqm.)	Rs. 20 Thousands
For Medium Office Buildings (10,000 sqm. < Built up Area ≤ 30,000 sqm.)	Rs. 15 Thousands
For Small Office Buildings (Built up Area ≤10,000 sqm.)	Rs. 10 Thousands

*Waived off for Govt. Buildings (Owned by Central/State Govt., PSUs, Railways etc.)

NOTE: In case of change in Built up Area (within two years of application date) at the time of renewal if slab is changed, additional fees of Rs. twenty thousand (Rs. 20,000) needs to pay by the building owner.

6. STAR RATING TABLE:

The Star Rating Band is formed by straight line equations is in the form $y=(a*b) +c$, where 'b' denotes the percentage of AC area out of total built-up area.

Table for Star Rating of the Office Building

Climatic Zone	Building Category	1 Star	2 Star	3 Star	4 Star	5 Star
Composite	Large Office	$y = 0.95x + 60$	$y = 0.9x + 50$	$y = 0.85x + 40$	$y = 0.8x + 30$	$y = 0.75x + 20$
	Medium Office	$y = 1.1x + 60$	$y = 1.05x + 50$	$y = x + 40$	$y = 0.95x + 30$	$y = 0.9x + 20$
	Small Office	$y = 0.65x + 60$	$y = 0.6x + 50$	$y = 0.55x + 40$	$y = 0.5x + 30$	$y = 0.45x + 20$
Warm & Humid	Large Office	$y = 0.9x + 65$	$y = 0.85x + 55$	$y = 0.8x + 45$	$y = 0.75x + 35$	$y = 0.7x + 25$
	Medium Office	$y = 0.9x + 65$	$y = 0.85x + 55$	$y = 0.8x + 45$	$y = 0.75x + 35$	$y = 0.7x + 25$
	Small Office	$y = 0.7x + 65$	$y = 0.65x + 55$	$y = 0.6x + 45$	$y = 0.55x + 35$	$y = 0.5x + 25$
Hot & Dry	Large Office	$y = 1.1x + 55$	$y = 1.05x + 45$	$y = x + 35$	$y = 0.95x + 25$	$y = 0.9x + 15$
	Medium Office	$y = 1.25x + 55$	$y = 1.2x + 45$	$y = 1.15x + 35$	$y = 1.1x + 25$	$y = 1.05x + 15$
	Small Office	$y = 0.75x + 55$	$y = 0.7x + 45$	$y = 0.65x + 35$	$y = 0.6x + 25$	$y = 0.55x + 15$

Sample Calculation:

The equations provide the upper limit of the corresponding Star Rating. Lower limit will be the value obtained by the equation of next higher rating.

For Example: Any Large Office Building in Composite climatic zone, having 75% AC area
Highest EPI value for 1-Star should be less than: $0.95*75 + 60 = 131.25$ kwh/sqm.

Lower limit for 1-star building will be: $0.9*75 + 50 = 117.5$ kwh/sqm.

So, any building having 75% AC area, and having EPI less than 131.25 kwh/sqm. but equals to or more than 117.5 kwh/sqm. that building will be awarded 1-star rating.

7. CALCULATION OF CORRECTION FACTOR AND PERCENTAGE AC AREA:

The EPI band for star rating is applicable for the buildings operated 8-9 hours a day and 6 days in a week. For a building having multiple tower/floors with non-uniform %age of AC area and non-uniform operating hours/days in a week, a multiplication factor is to be multiplied with the EPI values obtained by the equations of the Star Rating Table.

For a building having multiple tower/floors with non-uniform %age of AC area and non-uniform operating hours/days in a week, then multiplication factor may be derived as follows:

Floor Number	Operating Hours	Working days in a week	Area	%age AC Area
F1	h1	d1	A1	p1
F2	h2	d2	A2	p2
F3	h3	d3	A3	p3
.
.
.

Formula for determining Correction Factor (C.F.) and Weightage Average %age AC Area are as follows:

$$C.F. = \frac{\sum(hi*di*Ai)}{(8*6) \sum Ai}$$

$$\text{Weightage Average \%age AC Area} = \frac{\sum(hi*di*Ai*pi)}{\sum(hi*di*Ai)}$$

Where, 'h'- Nos. of Operating hours in a day for each floor

'd'- No. of working days in a week for each floor

'p'- Percentage AC area of the floor

'A'- Area of the floor

'i' - Total Nos. of floors (sum of floors of each tower if building have multiple towers)

8. **STAR RATING LABEL/PLAQUE:** The renewal/registration fees will consist cost of ONE plaque, however the building owner can request for duplicate plaques by paying Rs.5000 per plaque additionally. Design and colour scheme of the plaque is at **Annexure-II**.

9. ADHERENCE TO LABEL/PLAQUE SPECIFICATION:

i. The user of label is solely responsible for the adherence to the specification of the label prescribed by BEE and the authenticity of the documents submitted. However, in 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.

- ii. Building owner shall be given a time frame of one month after the expiry of 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 label 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 label shall be permanently withdrawn for the building and information shall be displayed on BEE's website and in public domain.
- iii. 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.

10. 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 may conduct sample verification of building for accuracy of the information provided by the building owner and the EPI either on its own or through a third party. The sample verification may be conducted without prior notice. The results of the sample verification may be put in the public domain, if required.
- 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 noticed that the building does not conform to the authorized label specification then a second verification 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 Building owner will be informed at least 48 hours in advance and if no representative is present then the second check results will be binding on the building owner.

Application Form for Participation and Agreement*(ON THE LETTER HEAD OF THE COMPANY/FIRM)*

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

Subject: Application of _____ (building name) for Participation in the BEE Star Rating of Commercial Buildings

I/We are the building owner(s)/authorized representative of (building name and address) _____

owned/managed by (full name of organisation) _____

hereby apply for participation in the scheme “**BEE Star Rating of Commercial Buildings under typology (Office/BPO/Shopping Mall/Hospital)**”.

I/We have gone through the scheme for **the BEE Star Rating of Commercial Buildings**, 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.

Application Fees Payment Details

(Write N/A if not required, also mention the reason for waiver and enclose copy of the supporting document) -

DD No. :

Issue Date :

Issuing Bank and Branch Name :

Online Payment details-

Transaction No. :

Date of Transaction :

Amount :

Payment through : (Internet Banking/Credit Card/Debit Card/UPI/Others)

Bank Name :

Dated this Day of....(Year)

Signature

Name

Designation

For and on behalf of

.....

(Name of the firm)

Encl:

- (i) Building Information and Energy Data (Annexure-I)
- (ii) Agreement (Annexure-II)
- (iii) Copy of Payment Receipt/DD

Building Information and Energy Data**Name of the Building:****Typology:****Address:****Table 1: Information and Energy Data**

Sl. 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 Grid (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 from Grid		
	b) Annual Cost of Electricity generated through DG/GG Sets (Rs.)		
	c) Total Annual Electricity Cost, Utilities + DG/GG Sets (Rs.)		
5	Area of the building (exclude parking, lawn, roads, etc.)	Built Up Area floor wise (sqm) with No. of rooms	
		Conditioned Area (in sqm)	
		Conditioned Area (as % of built-up area)	
6	Working hours (e.g., day working /24 hour working)		
7	Working days/week (e.g., 5/6/7 days per week)		
8	Office	Total no. of Employees	
		Average. no. of Persons at any time in office during working hours	
9	a) Installed capacity of Air Conditioning System (TR)		
	b) No. of Window and Split ACs with capacity (TR)		
	c) No. of Water coolers and Air Heaters		
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	Water Requirement (liters or cu. meters/day) if available		
15			
16	EPI (Energy Performance Index) in kWh/sqm/year Energy includes electricity purchased and generated (excluding electricity generated from on-site renewable resources)		
17	Climatic Zone		
18	Star Label applied for		

Table 2: Major Loads in Building

e.g., Lighting, cooling tower pump, water pumping motors, Transformer details, present power factor, Boilers, etc. (Insert additional rows if required)

Sl. No.	Name	kW Load/KVA/Ton
1		
2		

Add extra rows if required

Table 3: Details of Major Lighting Inventory**Type and Category wise Building Connected Load**

Category	Type of Fittings	Watts	No of Fittings	Total Load (KW)	Total Load (KW)
Lighting					

Table 4: Details of Diesel Generator sets (One Year Data)

S. No.	Items	Value
1.	DG Set rating (KVA)	
2.	Total Units generated (kWh)	
3.	Diesel Consumption (Ltrs.)	
4.	No. of hours used	
5.	Avg. load (kW)	
6.	Percentage Loading	
7.	Cost of diesel (Rs.)/ltr.	

Table 5: Details of AC Plants

S. No.	Items	Nos. Installed	Individual capacity (TR/kW/hp)	Total Capacity
1.	Chiller			
2.	AHU's			
3.	FCU's			
4.	Cooling Tower			
5.	Primary Chilled water Pump			
6.	Secondary Chilled water Pump			
7.	Condenser Water Pump			
8.	CT fan			

Contact Details of the Organization and the Contact Person

Sl. No.	Organization	Details
(i)	Name of the Organization	
(ii)	Postal Address	
(iii)	Phone No.	
Contact Person		
(iv)	Name & Designation	
(v)	E-mail Address	

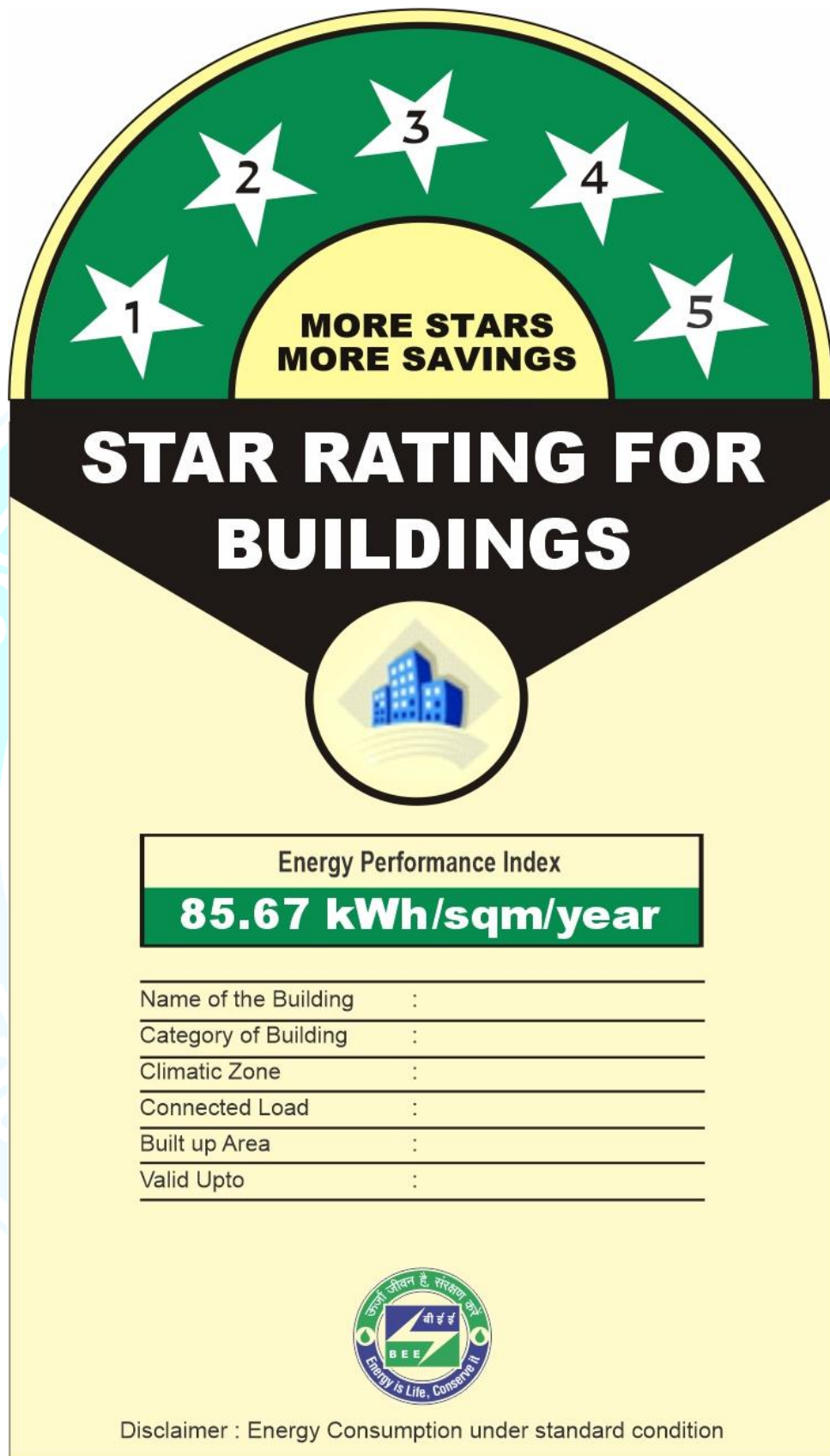
(vi)	Phone Nos.	
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Note: All the communications must be sent through authorised contact person only. Building owner need to furnish the details of contact person if changed at later stage. Any outsiders/ third party firm will not be sent any information related to the process.

Declaration: 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






The image shows a sample label for office buildings. At the top, a semi-circular green arch contains five white stars numbered 1 to 5. Below the stars is a yellow semi-circle with the text "MORE STARS MORE SAVINGS". The main title "STAR RATING FOR BUILDINGS" is written in large white letters on a black background. Below the title is a circular icon of a blue building. The central part of the label features a box with the "Energy Performance Index" and the value "85.67 kWh/sqm/year" in green. Below this are several horizontal lines for entering building details: Name of the Building, Category of Building, Climatic Zone, Connected Load, Built up Area, and Valid Upto. At the bottom, there is the BEE logo with the motto "Energy is Life, Conserve it" and a disclaimer: "Disclaimer : Energy Consumption under standard condition".

**MORE STARS
MORE SAVINGS**

**STAR RATING FOR
BUILDINGS**

Energy Performance Index
85.67 kWh/sqm/year

Name of the Building : _____
Category of Building : _____
Climatic Zone : _____
Connected Load : _____
Built up Area : _____
Valid Upto : _____


Energy is Life, Conserve it

Disclaimer : Energy Consumption under standard condition

Sample Label for Office Buildings

AGREEMENT

(To be printed on non-judicial stamp paper worth Rs.100/- (rupees one hundred only))

Agreement between the Bureau of Energy Efficiency, a statutory body under the Ministry of Power and Building owner(s)/authorized representative of (building name and address)

under the **“BEE Star Rating of Commercial Buildings (typology - Office/ BPO/ Shopping Mall/ Hospital)”**.

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) with its office at “Bureau of Energy Efficiency 4th Floor, Sewa Bhawan, R. K. Puram, New Delhi-66” has launched a scheme for **BEE Star Rating of Commercial Buildings**.

Whereas (Building owner(s)/authorized representative)
_____ having its registered office at
(Name of Organisation and Office address)

has agreed to participate under the **“BEE Star Rating of Commercial Buildings”** (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 three years commencing from the date it is signed or until Notification under 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 Commercial Buildings”** 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 (Building owner(s)/authorized representative)
_____ for achieving the objective defined in Article 1.2 of this Agreement.

1.3.2 Format for submitting Building Information and Energy Data details is enclosed as **Annexure-I**. Energy Performance Index (EPI) in kWh/sqm/year will be considered in rating the office buildings.

1.3.2 The user of label is solely responsible for the adherence to the specification of the label prescribed by BEE (as enclosed at **Annexure II**), 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 Commercial Buildings”**.

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
4th 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)

Signature.....

(Place, date)

Bureau of Energy Efficiency

Witness: 1

(Name).....
(Designation).....
(Address)

Witness: 2

(Name).....
(Designation).....
(Address)

User of label

Witness: 1

(Name).....
(Designation).....
(Address)

Witness: 2

(Name).....
(Designation).....
(Address)