23rd National Awards for Excellence in Energy Management – 2022

HYDERABAD BHAVAN

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Hyderabad Division
South Central Railway, Secunderabad

Brief introduction of Hyderabad Bhavan

- Hyderabad Bhavan was built in the year 2007, is the Divisional office of the Hyderabad Division, South Central Railway (SCR).

Brief introduction of Hyderabad Bhavan

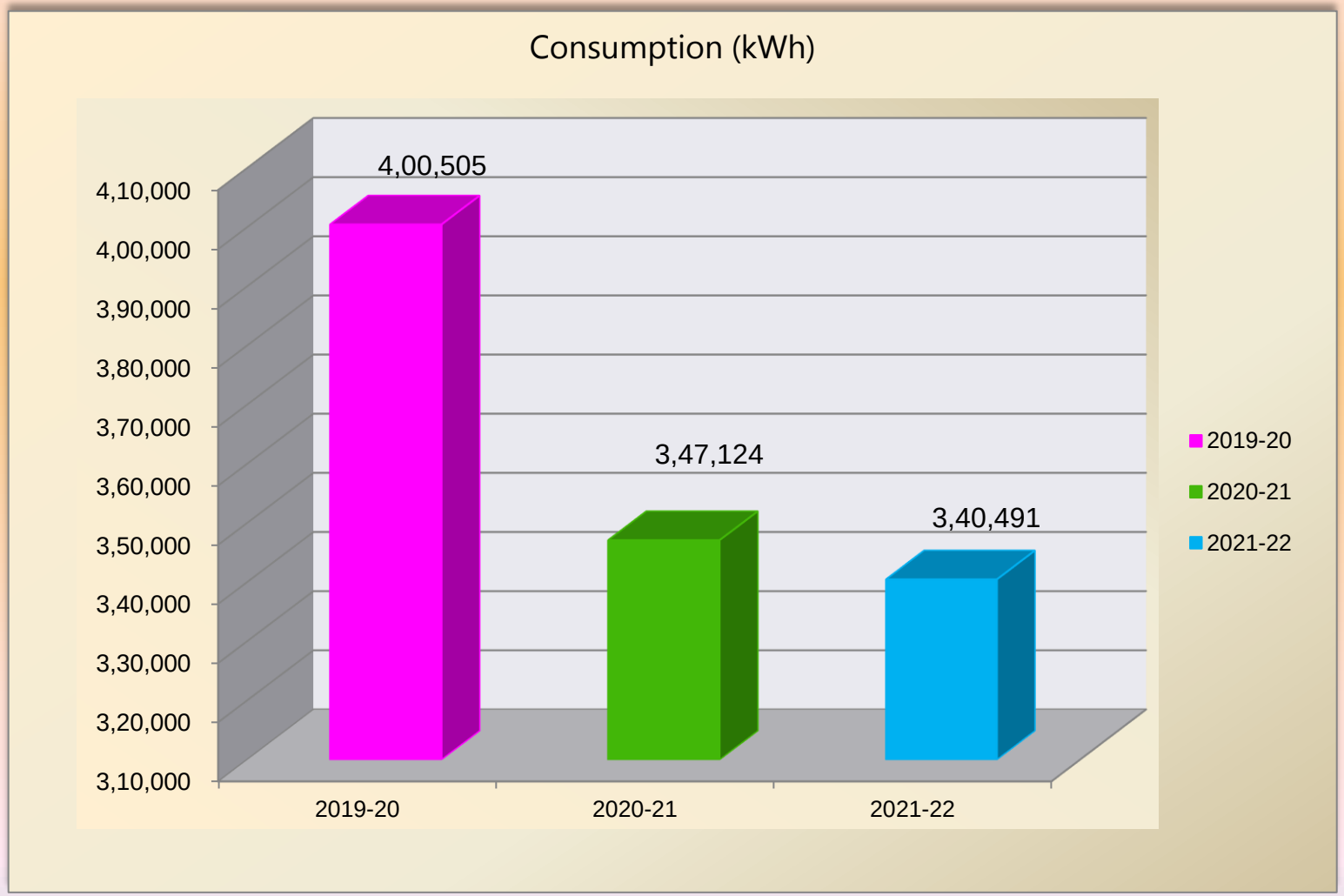
- ✓ The entire train operations of the Hyderabad Division are controlled and monitored at this building.
- ✓ Centralized Train Operations Control, Inter Divisional Coordination, Divisional Business Management.
- ✓ Integrated Block of 3 storeyed building.
- ✓ Built up Area: 7,465 Sq.mt
- ✓ Connected Electrical Load: 250 kW
- ✓ Sources of Energy:
  - 11KV/440V Substation with 2 x 500 kVA Transformers.
  - 160 KVA Standby DG Set.
  - 50 kWp Rooftop SPV Solar Plant.

Energy Consumption Scenario

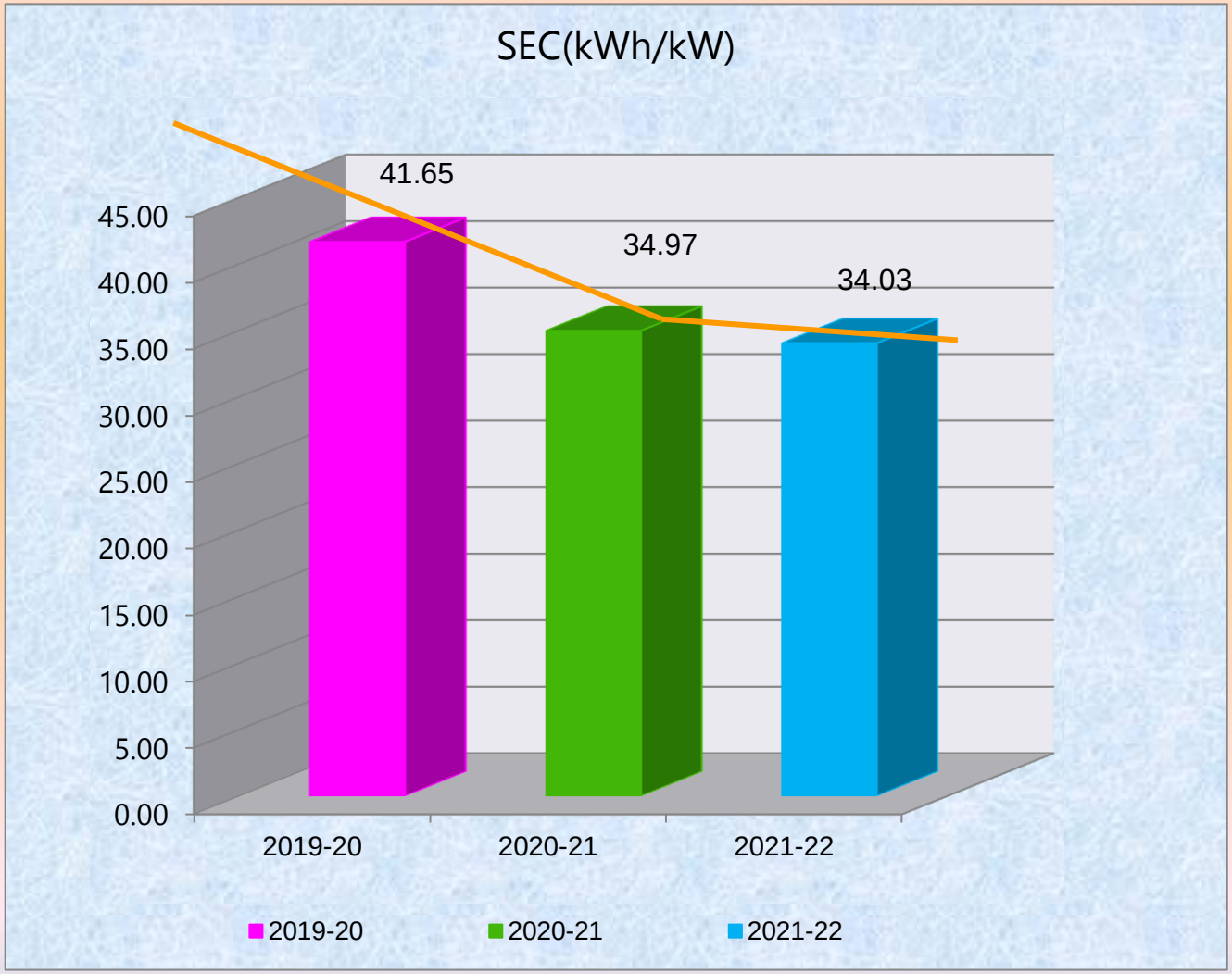
Description	2019-20	2020-21	2021-22
From SEB	3,10,000	2,60,230	2,53,458
From Solar	89,571	86,061	86,383
From DG set	934	833	650
Total Consumption	4,00,505	3,47,124	3,40,491
Built-up Area (Sq.mt)	7,465	7,465	7,465
SEC (kWh/Sq.mt) (Excluding Solar)	41.65	34.97	34.03

- ✓ Consumption has been reduced by 15% in 2021-22 by compared to 2019-20 (pre-pandemic period)
- ✓ Consumption has been reduced by 2% in 2021-22 compared to 2020-21

Energy Consumption Scenario



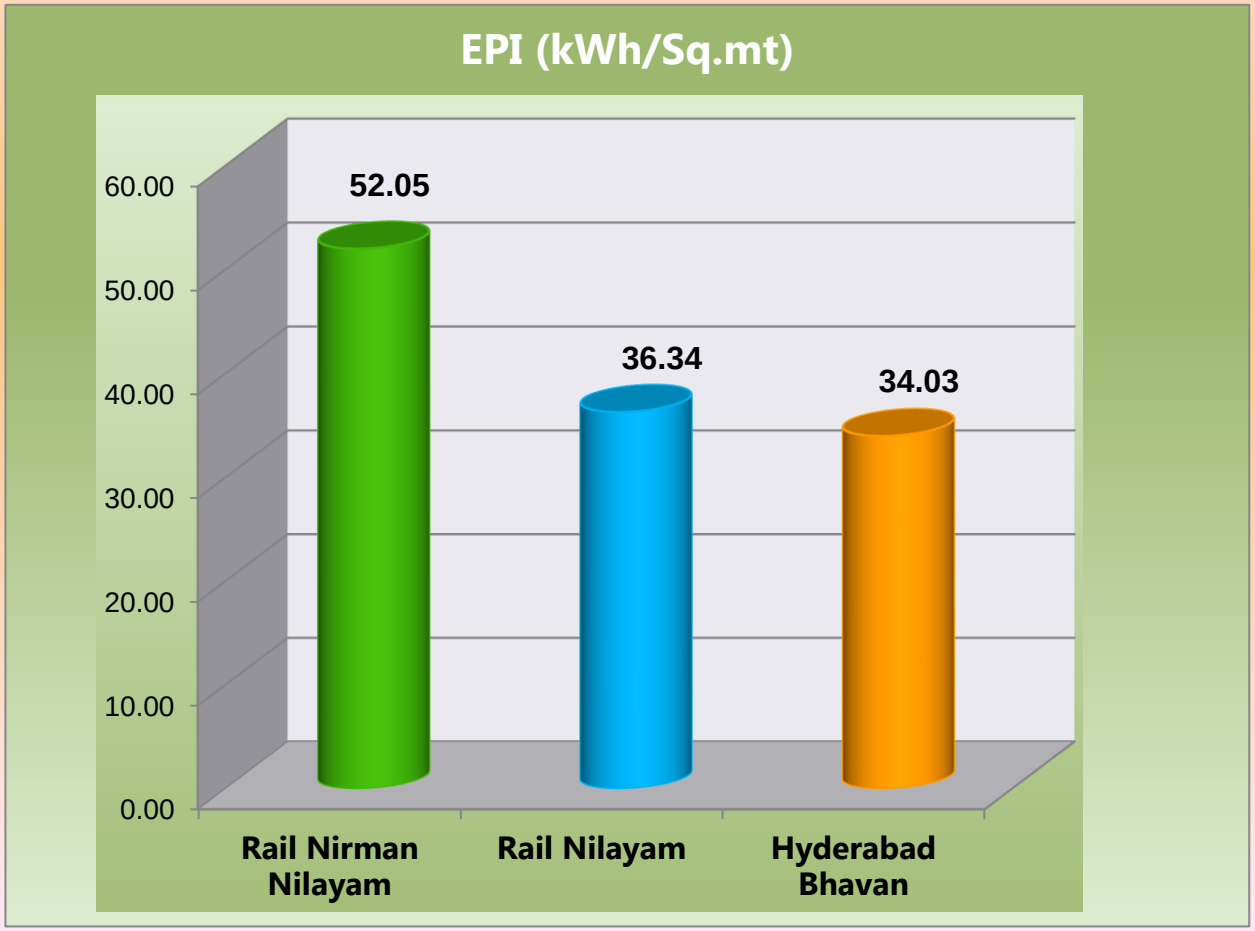
Energy Parameters



- ✓ **SEC has been reduced in 2021-22 by 15% and 3% compared to 2019-20 and 2020-21 respectively.**

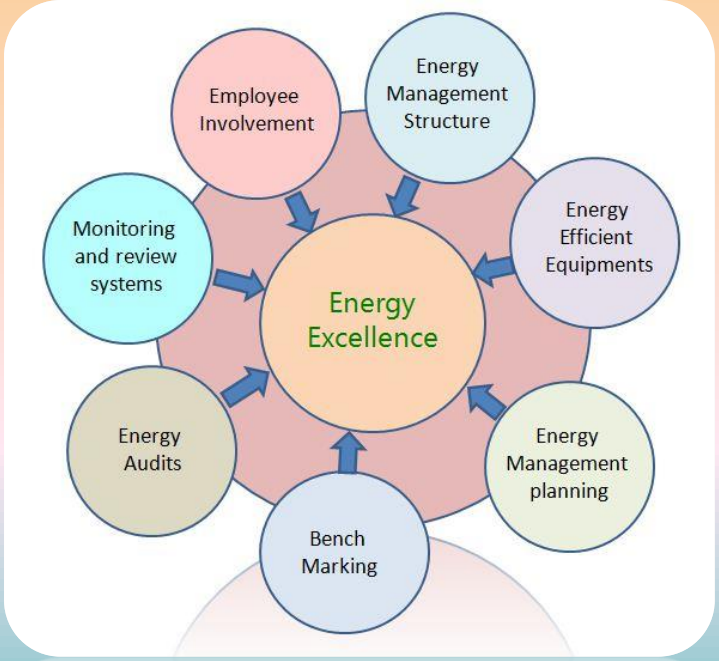
National Benchmarking

Direct Competitors and National Benchmarking



Achieving Energy Efficiency - A Multi Pronged Approach

- ✓ Targeted energy conservation action plan & Implementation.
- ✓ Low cost Innovation & use of new technology.
- ✓ Continuous energy monitoring and Corrections.
- ✓ Energy Audits by In House BEE Accredited Auditors.
- ✓ Renewable energy Initiatives.
- ✓ Very well maintained electrical equipment.
- ✓ Energy Conservation Week celebration and Mass Awareness Program.



EnCON Projects Implemented from 2019-20 to 2021-22

Energy Saving Projects 2019-20

Some of the major Energy Saving Projects implemented.

Sl. No.	Project Description	Savings in Lakh Rs.	Investment in Lakh Rupees	Payback Period in years
1	50 kWp Solar Power Plant (PPA Mode)	1.77	-	-
2	Energy Efficient AC units	1.92	9.20	5.0
3	Energy Efficient LED Lighting	1.78	2.16	1.2
4	Energy savers for AC units	1.08	1.26	1.2

- **50 kWp on grid solar power plant contributes 22% of total energy consumption of the building during the year 2019-20.**

Energy Saving Projects 2020-21

Some of the major Energy Saving Projects implemented.

Sl. No.	Project Description	Savings in Lakh Rs.	Investment in Lakh Rs.	Payback Period in years
1	Super Energy Efficient BLDC fans	1.37	7.56	5.5
2	Energy Efficient Inverter type AC	0.97	3.15	3.3
3	Occupancy Sensors	0.31	1.00	3.3

- **50 kWp on grid solar power plant contributes 25% of total energy consumption of the building during the year 2020-21.**

Energy Saving Projects 2021-22

Some of the major Energy Saving Projects implemented.

Sl. No.	Project Description	Savings in Lakh Rs.	Investment in Lakh Rs.	Payback Period in years
1	Occupancy sensors for AC units	0.50	0.65	1.0
2	Timers for water coolers	0.60	0.30	0.5
3	Energy efficient BLDC pump	0.25	0.30	1.0

- **50 kWp on grid solar power plant contributes 35% of total energy consumption of the building during the year 2021-22.**

Innovative Projects Implemented

Super Energy Efficient BLDC fans

270 Nos. conventional ceiling fans are replaced with super energy efficient BLDC fans.

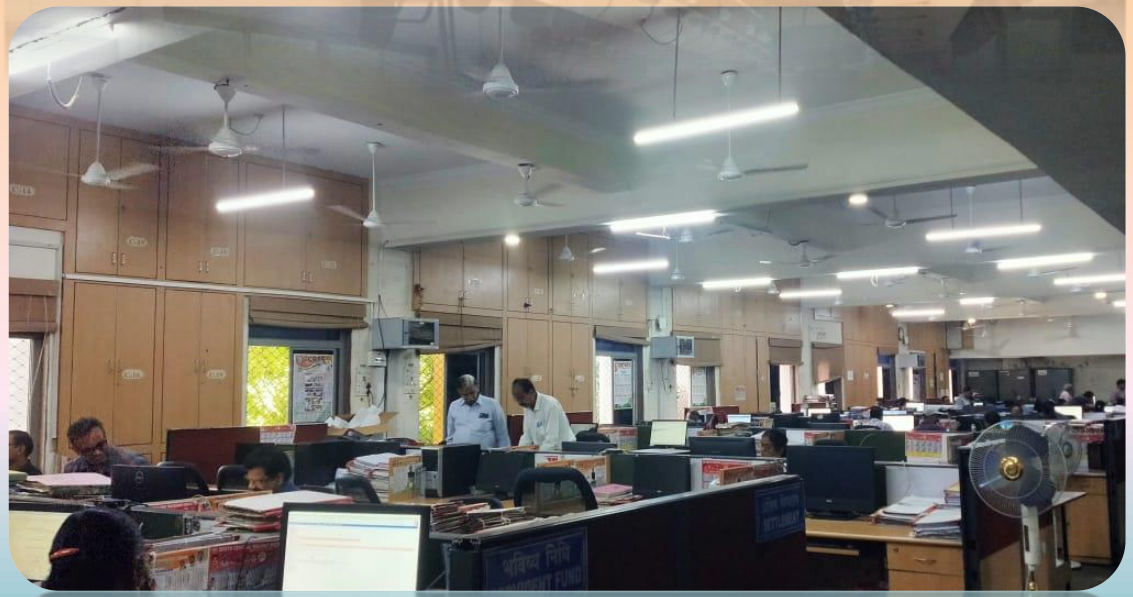
Description	Unit	Value
Average consumption of conventional ceiling fans per day	kWh	134
Average consumption of BLDC fans per day	kWh	69
Average Difference consumption per day	kWh	65
Percentage of savings	%	49
Average monetary savings per annum	Rs. in Lakhs	1.57

Renewable Energy Utilization

Year	Technology	Type of Energy	Onsite/ Offsite	Installed capacity	Generation in kWh	% of overall electrical energy
2019-20	Solar PV	Electrical	Onsite	50 kWp	89,571	22%
2020-21	Solar PV	Electrical	Onsite	50 kWp	86,061	25%
2021-22	Solar PV	Electrical	Onsite	50 kWp	86,383	35%

Other Energy Conservation Measures

100% LED Lighting



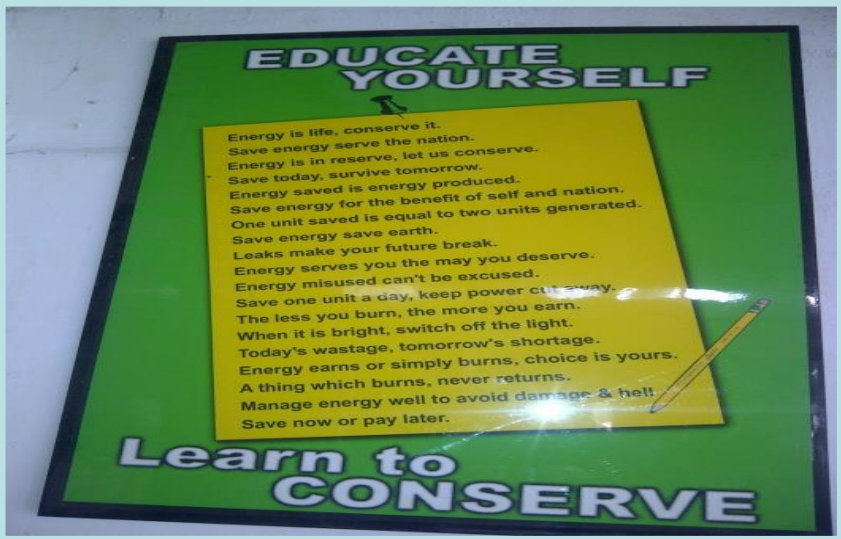
Use of Occupancy Sensors & Energy Savers

Green Initiatives and Features at Hyderabad Bhavan

- Building has Green tree façade by trees
- BIPV solar power plant
- Sun control film on window pans
- Massive tree plantations
- e-office working system
- LED signage and name boards
- Occupancy indicators and display panels
- Pan IR video conference system
- In building potted plantation
- Segregation of dry & wet waste and waste management

Energy Conservation Awareness Programme

Energy Conservation Awareness Programme

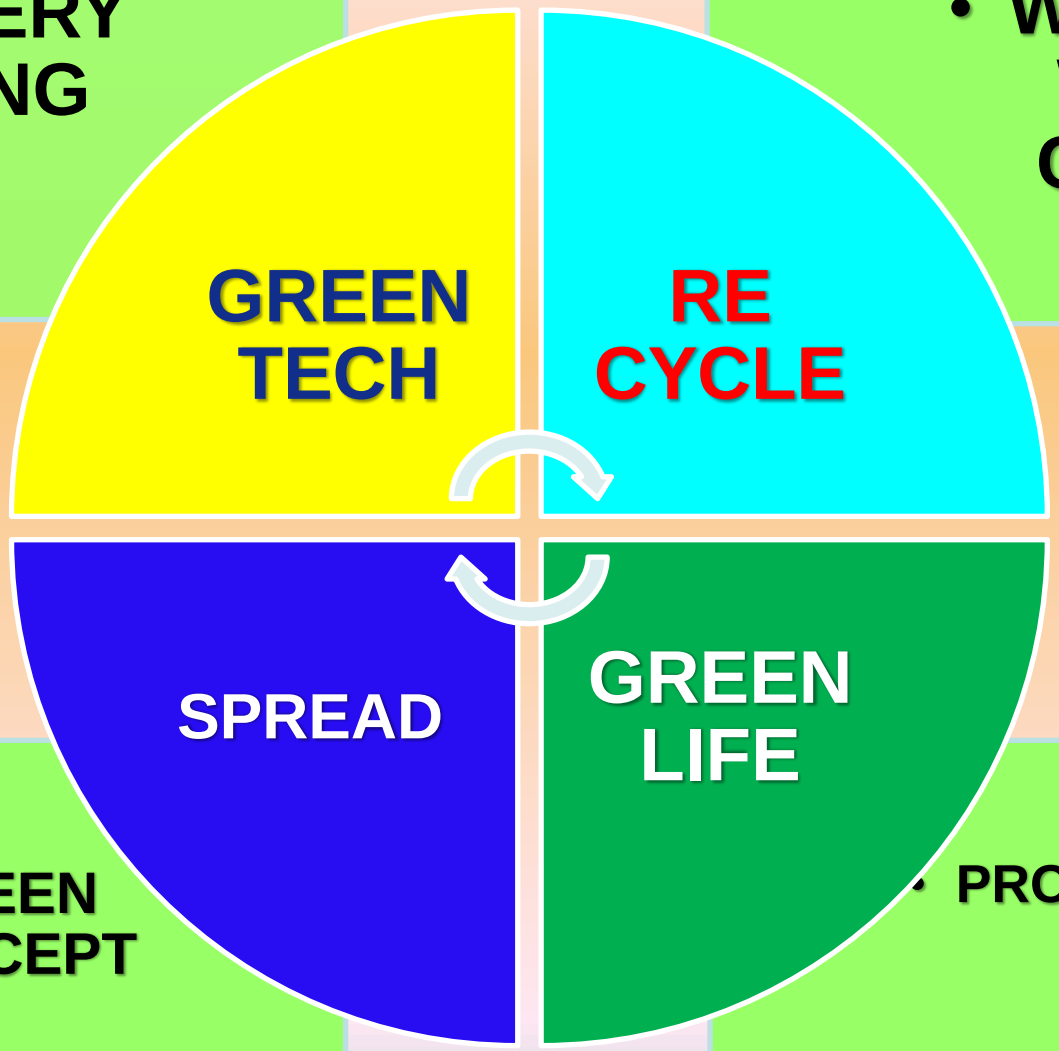


Energy Conservation awareness programme had been organised during the energy conservation week. As part of this Energy Conservation Tips scrolling board, Door to Door Campaign, etc. are provided

GREEN MISSION

- EVERY THING

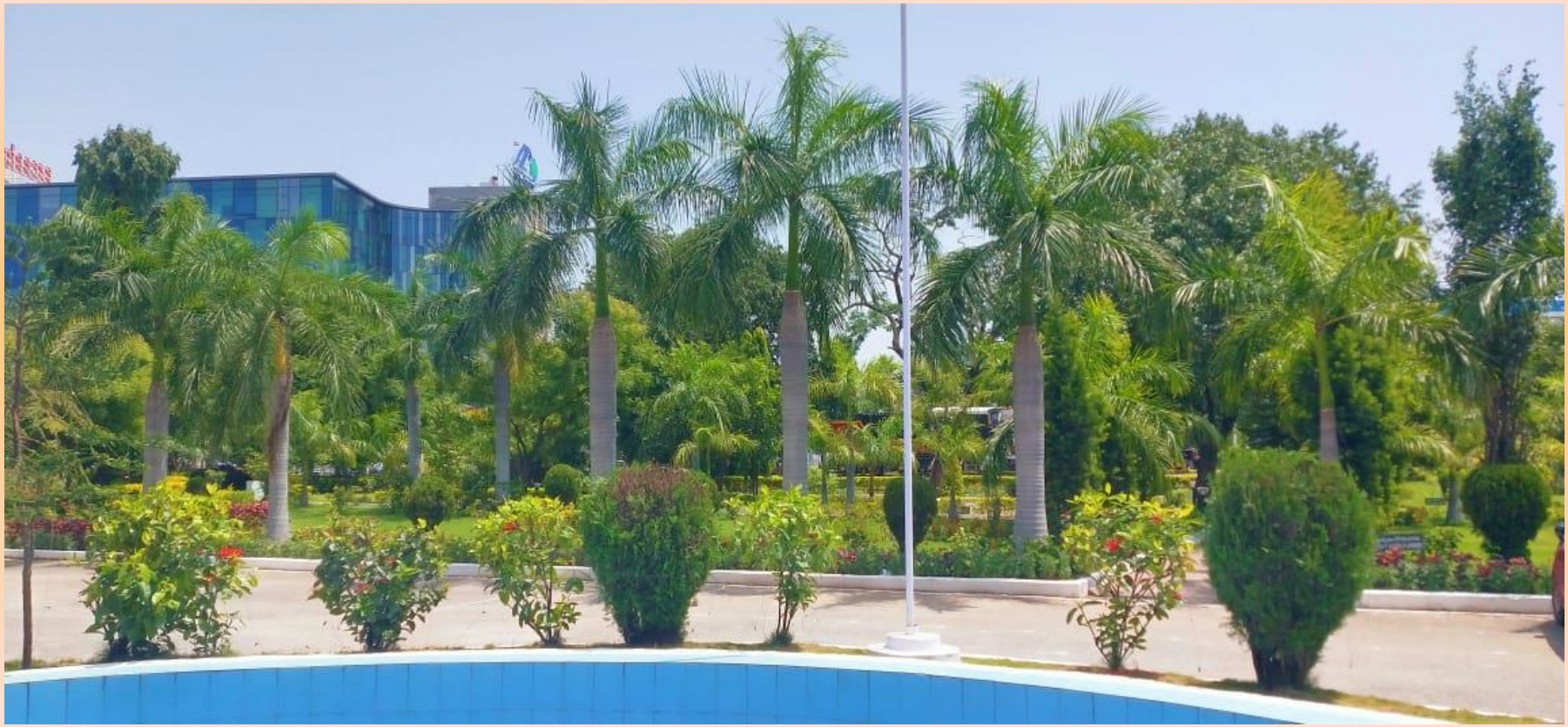
- WHAT WE CAN



- GREEN CONCEPT

- PROMOTE

Green Initiatives and Features



GHG Emissions Reduction Initiatives

- 50 kWp Solar Energy

- Dedicated 11kV/440V Line, so that Generation from DG is reduced

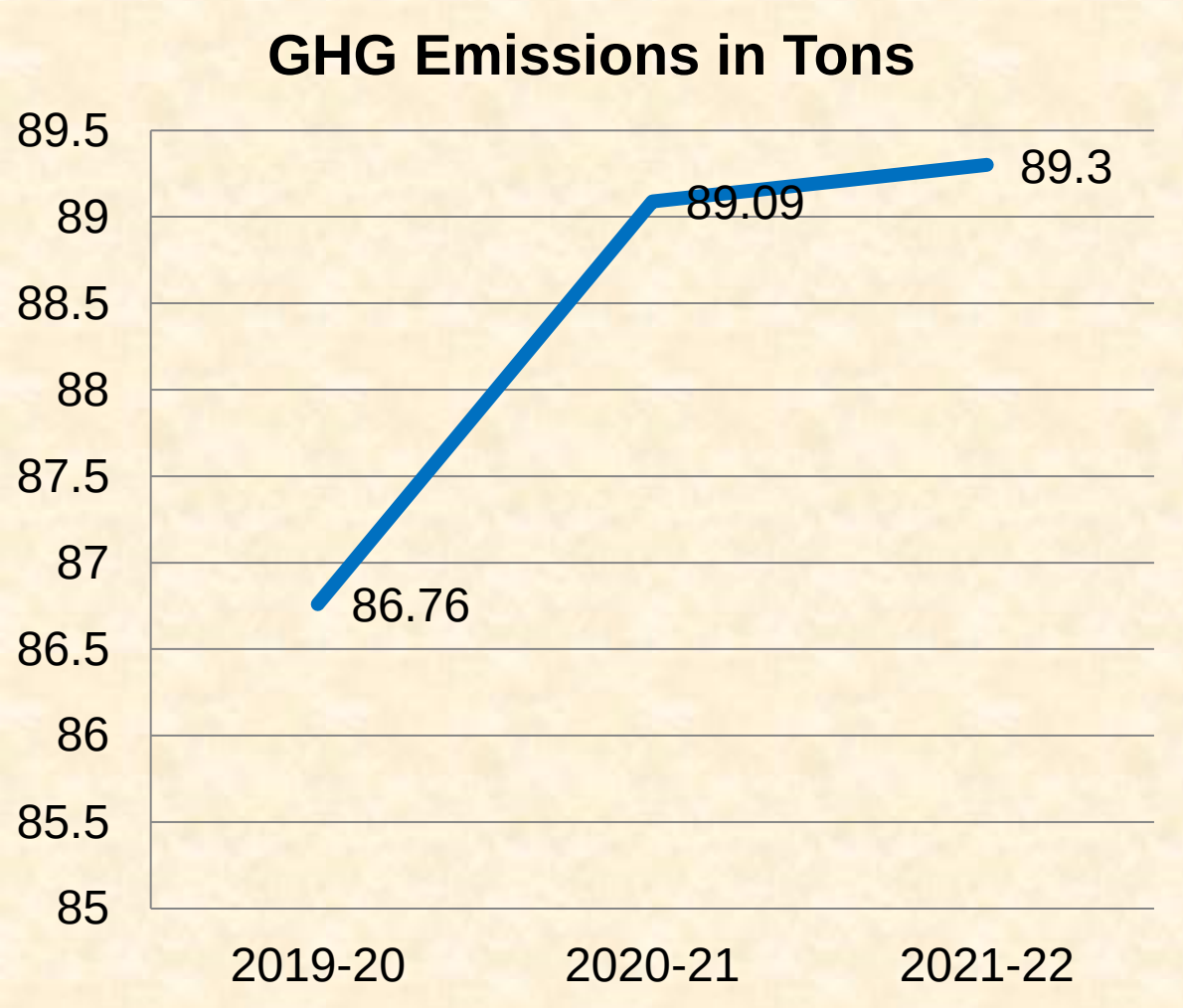
- Use of 5 star rated Inverter HVAC

- Energy Audits

- 100% LED Lightings

- Energy Efficient VVF Drives in Lifts

GHG Emissions



- GHG emissions reduced 89.30 MTons.

Waste Management

- Building is provided with separate garbage bins for collection of dry and wet waste.
- EN & HM Department is educating the employees about segregation wet and dry waste.
- Daily collection and segregation of dry and wet waste from each floor and effective disposal of the same.

Team Work, Employee Involvement & Monitoring

IGBC Green Co Rating

✓ Hyderabad Bhavan Building has awarded with **Gold Rating** by IGBC

IGBC

CII
Confederation of Indian Industry

Indian Green Building Council (IGBC)

hereby certifies that

HYDERABAD BHAVAN

Secunderabad

(IGBC Registration No: GEB 17 0217)

has successfully achieved the Green Building Standards required for the following level of certification under the

IGBC Green Existing Buildings Rating System

Gold

March 2018

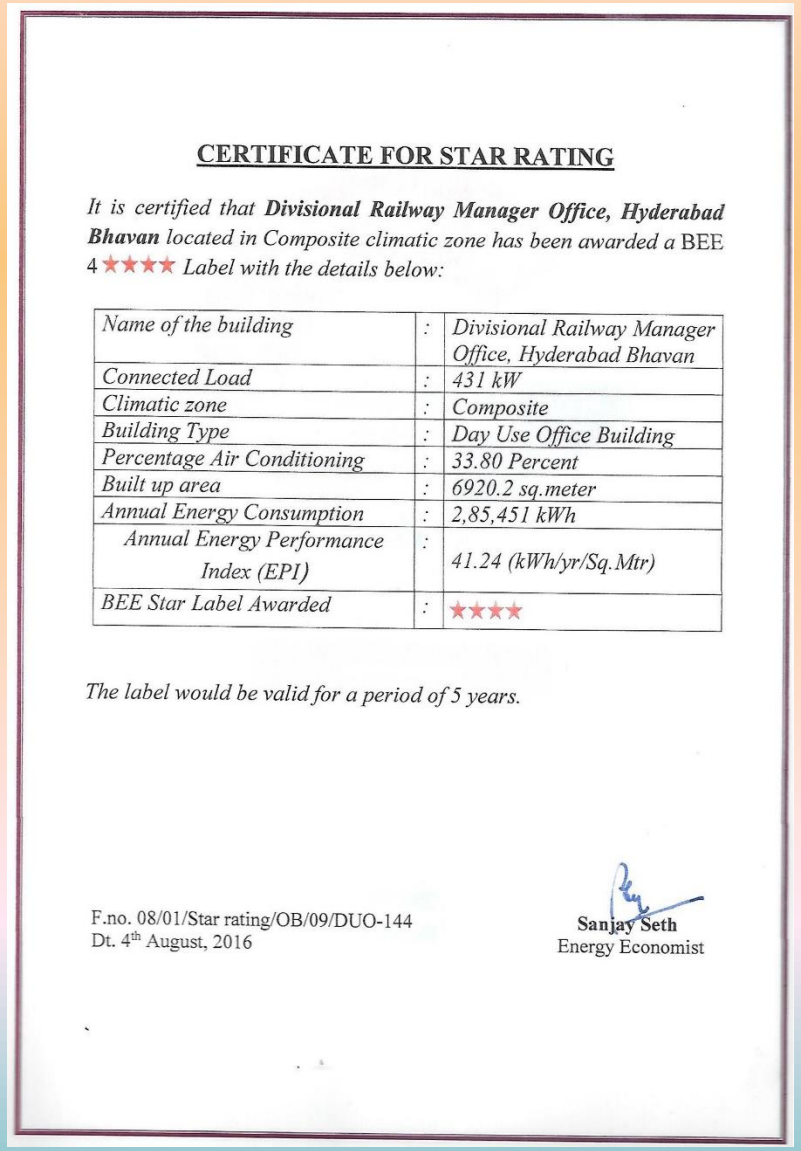
(This certification is valid for 3 years)

Gurmit Singh Arora	Dr Prem C Jain	S Raghupathy	K S Venkatagiri
Chair, IGBC Green EB O&M	Chairman, IGBC	Deputy Director General, CII	Executive Director, CII-Godrej GBC

IGBC GREEN RATING
INDIAN GREEN BUILDING COUNCIL
IGBC
GOLD

BEE Star Rating – 4 Star

✓ Hyderabad Bhavan Building awarded with **4 Star Rating** by BEE



CERTIFICATE FOR STAR RATING

It is certified that ***Divisional Railway Manager Office, Hyderabad Bhavan*** *located in Composite climatic zone has been awarded a* BEE 4★★★★ *Label with the details below:*

Name of the building	:	*Divisional Railway Manager Office, Hyderabad Bhavan*
Connected Load	:	*431 kW*
Climatic zone	:	*Composite*
Building Type	:	*Day Use Office Building*
Percentage Air Conditioning	:	*33.80 Percent*
Built up area	:	*6920.2 sq.meter*
Annual Energy Consumption	:	*2,85,451 kWh*
Annual Energy Performance Index (EPI)	:	*41.24 (kWh/yr/Sq.Mtr)*
BEE Star Label Awarded	:	★★★★

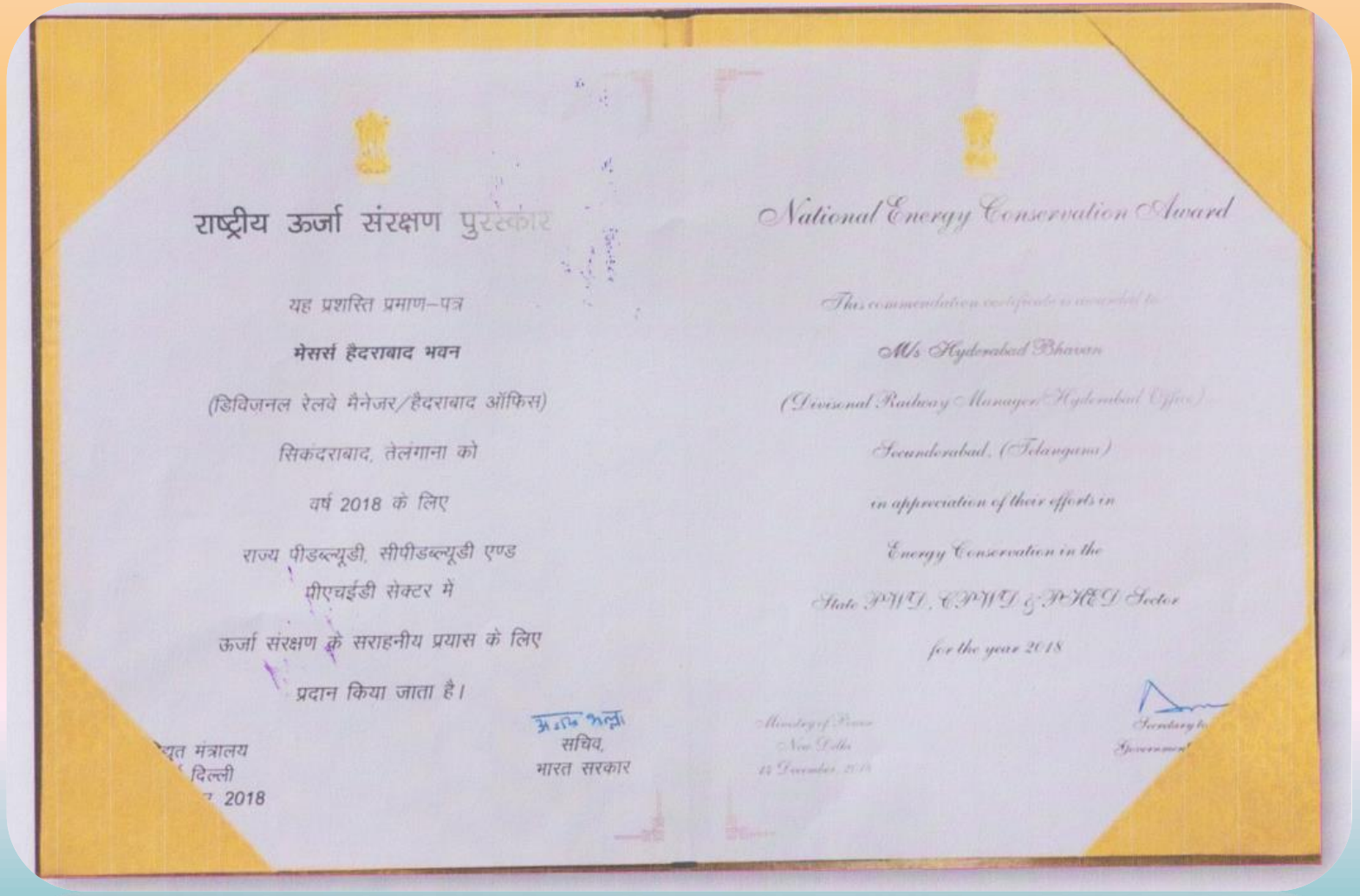
The label would be valid for a period of 5 years.

F.no. 08/01/Star rating/OB/09/DUO-144
Dt. 4th August, 2016

Sanjay Seth
Energy Economist

National Energy Conservation Awards - 2018

- ✓ Hyderabad Bhavan Building has received **Certificate of Merit** in Office buildings Category by BEE



राष्ट्रीय ऊर्जा संरक्षण पुरस्कार

यह प्रशस्ति प्रमाण–पत्र

मेसर्स हैदराबाद भवन

(डिविजनल रेलवे मैनेजर/हैदराबाद ऑफिस)

सिकंदराबाद, तेलंगाना को

वर्ष 2018 के लिए

राज्य पीडब्ल्यूडी, सीपीडब्ल्यूडी एण्ड

पीएचईडी सेक्टर में

ऊर्जा संरक्षण के सराहनीय प्रयास के लिए

प्रदान किया जाता है।

सचिव,
भारत सरकार

National Energy Conservation Award

This commendation certificate is awarded to

M/s Hyderabad Bhavan

(Divisional Railway Manager/Hyderabad Office)

Secunderabad, (Telangana)

in appreciation of their efforts in

Energy Conservation in the

State PWD, CPWD & PHED Sector

for the year 2018

Long Term Vision on EE

- Long Term Target of Energy Efficiency
- Provision of Solar Power Plant on available roof top of shed/ shops building
- Provision of more no of Day light pipe
- Implementation of SMART Energy Management System.
- Provision of more number solar street lighting.
- Provision of Energy efficient Pumps
- Use of IoT Technology for Electrical Energy Monitoring and Controlling.


Q & A

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