



25th NATIONAL AWARD FOR EXCELLENCE IN ENERGY MANAGEMENT-2024



Rail Nilayam

K. Kiran Kumar, IRSEE
Senior Divisional Electrical Engineer
Hyderabad Division, South Central Railway
Secunderabad



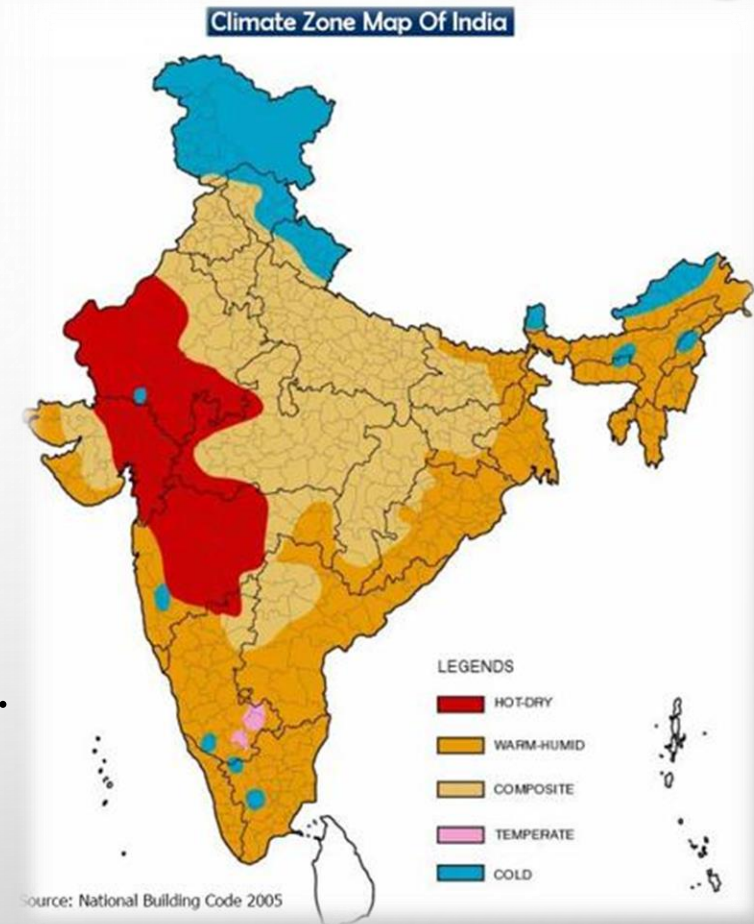
**Rail Nilayam, General Manager's Office,
South Central Railway, Secunderabad**

About Rail Nilayam

- Rail Nilayam was built in 1966.
- Main Function : Centralized Train Operations Control, Inter Zonal Coordination, Zonal Business Management.
- About 3200 officials and employees do work in building.
- The entire building was surrounded by Green patches to provide serene and lush green ambience which will also add to the conservation of energy.
- Has awarded with **Gold Rating** by IGBC.
- Has been certified with **ISO 50001:2018**.

KEY FEATURES-Rail Nilayam

- ❑ This building comes in the COMPOSITE Climatic Zone.
- ❑ Orientation : South - West direction
- ❑ 4 Integrated Blocks, 7 Storied Building
- ❑ Built Up Area: 39172 Sq. mtrs.
- ❑ Connected Electrical Load: 1.85 MW.
- ❑ Energy Sources:
 - 11 KV/440V Sub Station
 - Standby DG Sets
 - 0.14 MWp Rooftop SPV Plant



GREEN ARCHITECTURE OF BUILDING

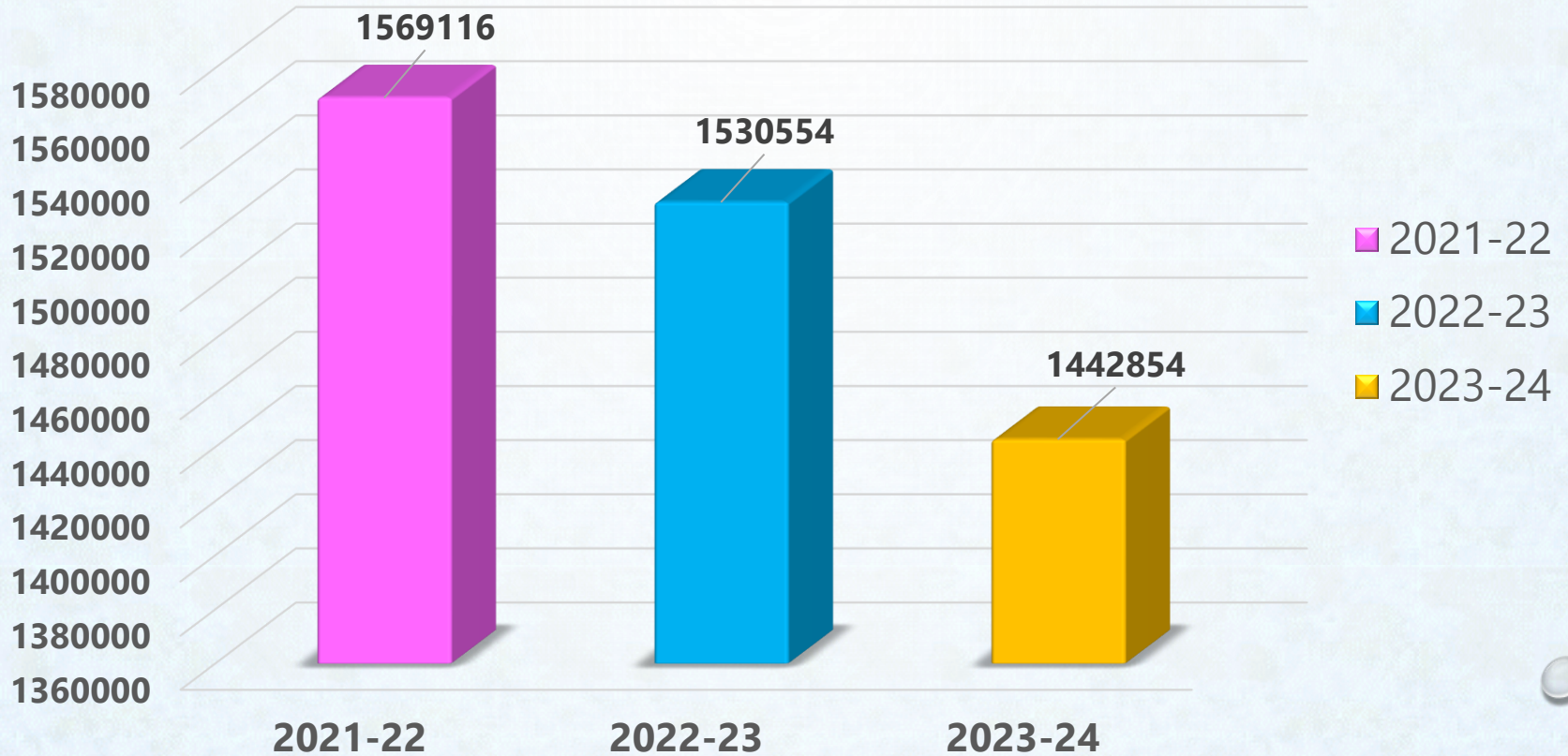


Energy Consumption

Description	2021-22	2022-23	2023-24
Purchased from Grid (kWh)	1423463	1374205	1245357
Consumption through DG set (kWh)	213	154	537
Consumption through Solar (kWh)	145440	156195	196960
Total Consumption (kWh)	1569116	1530554	1442854
Total Built-up Area (Sq.mt)	39172	39172	39172
Specific Energy Consumption (kWh/Sq.mtr.)	40.06	39.07	36.83

Consumption Pattern

Consumption in kWh

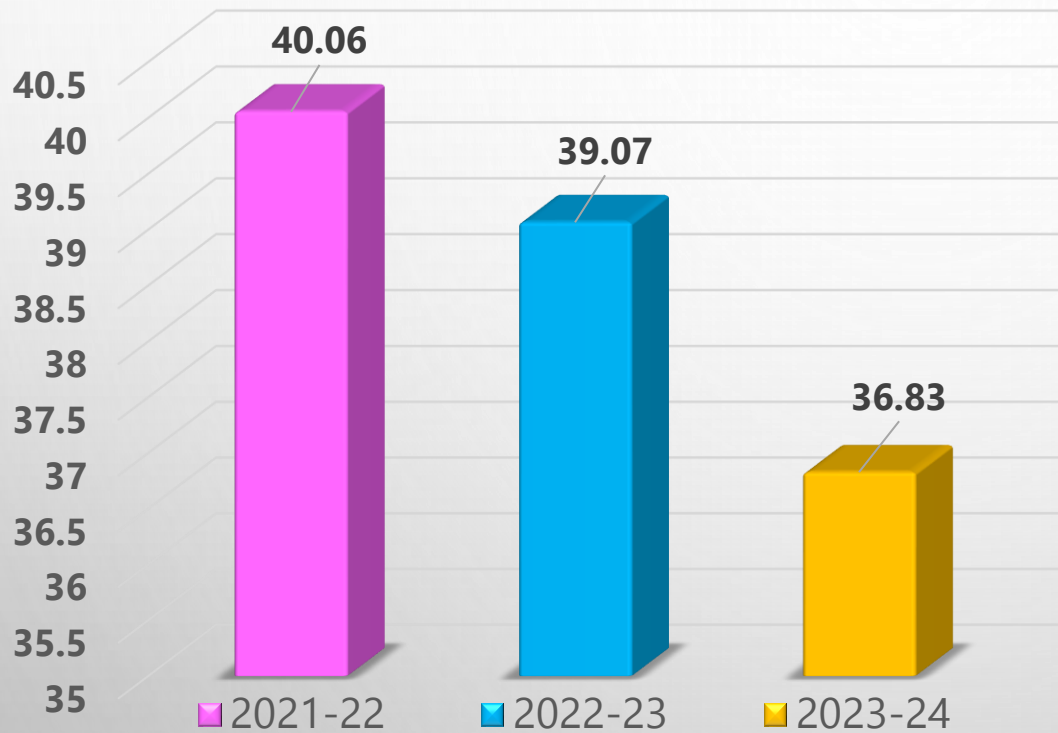


Consumption has been reduced by 5% during 2023-24 compared 2022-23



SEC (kWh/sq.mt)

SEC(kWh/sq.mt)

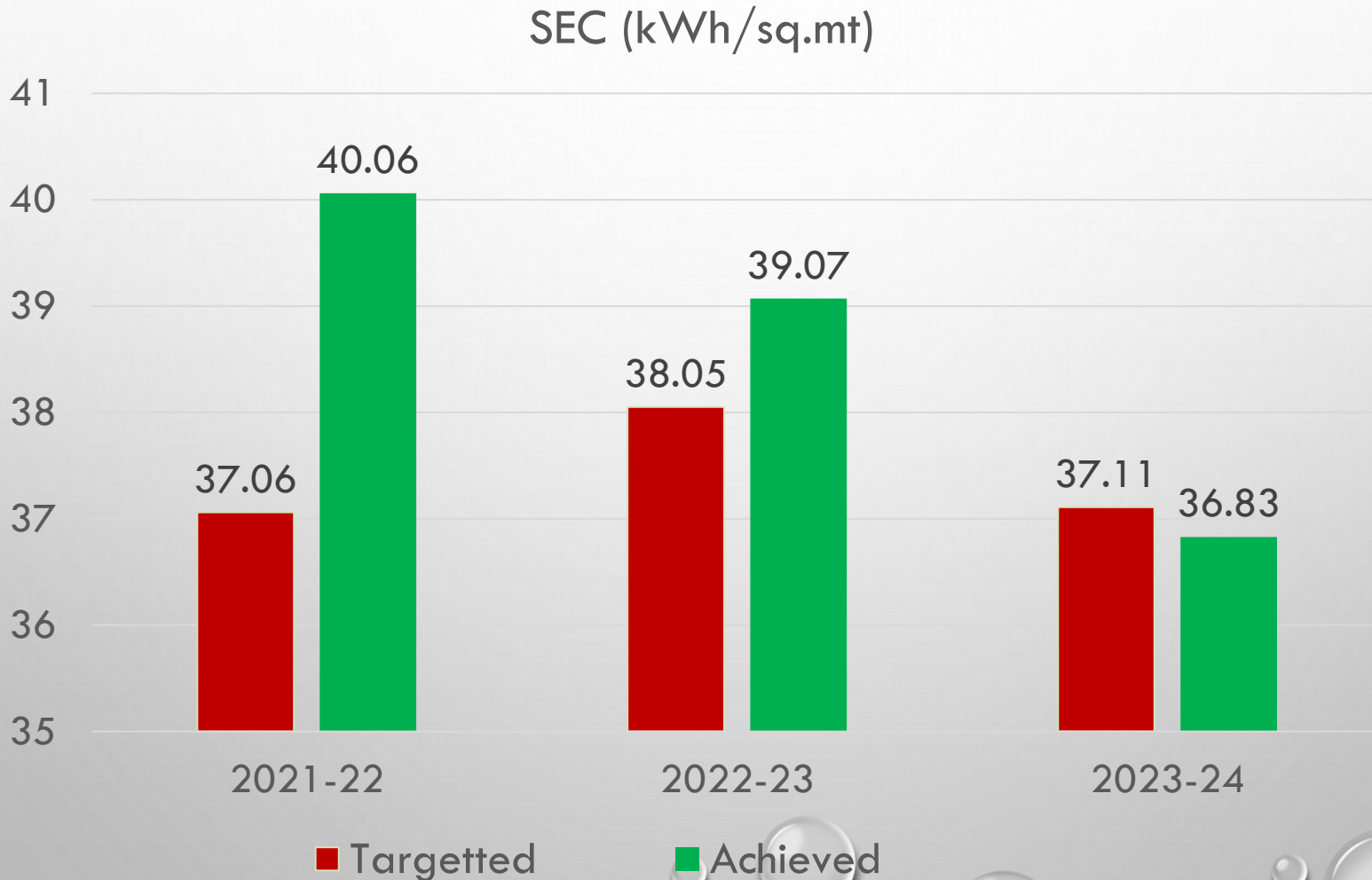


5%

Reduction in SEC from 2023-24 to 2022-23

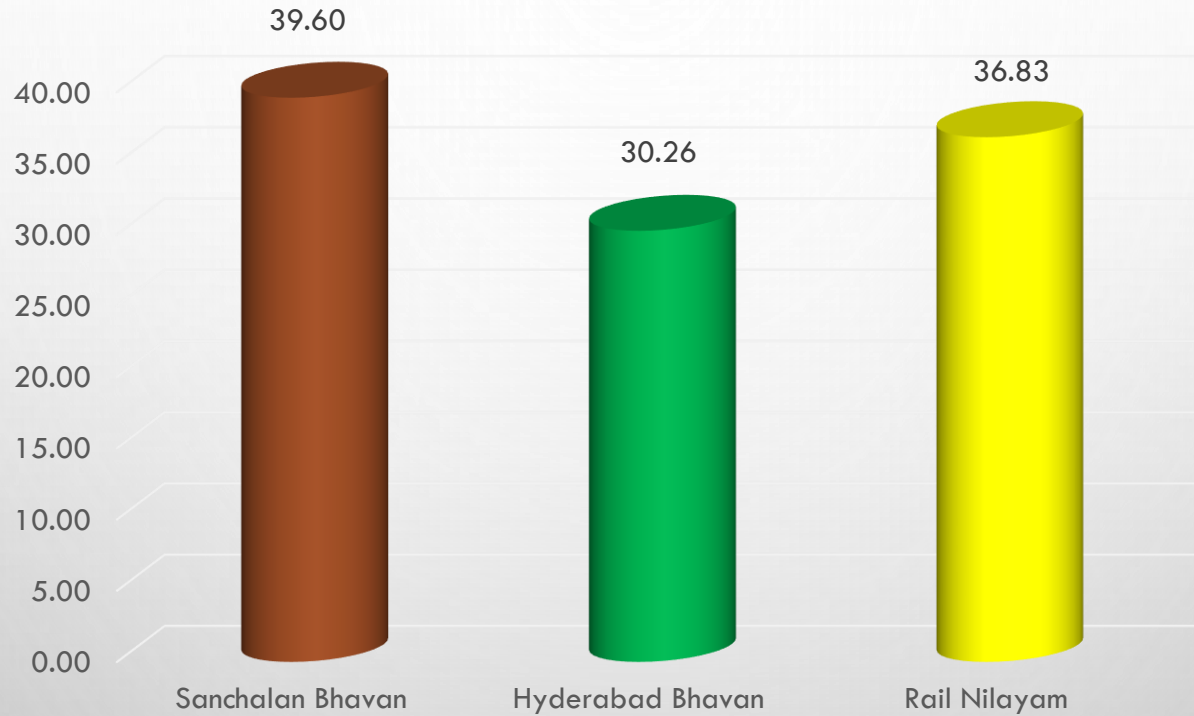
Internal Bench Marking

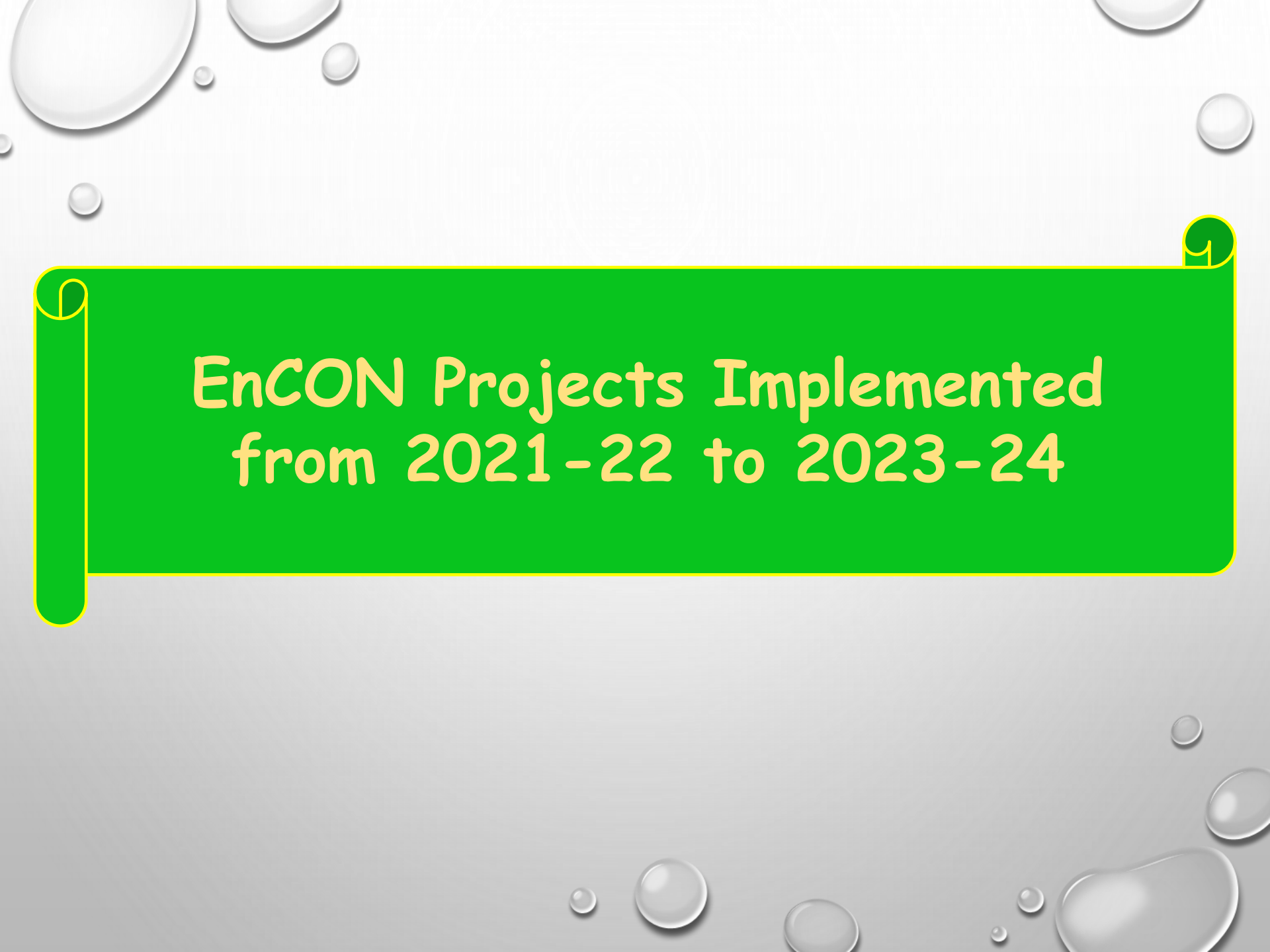
Target: 5% reduction in preceding year's SEC as assigned by Railway Board.



National Bench Marking

SEC (KWH/SQ.MT)





EnCON Projects Implemented
from 2021-22 to 2023-24

Energy Saving Projects 2021-22

Sl. No.	Name of the Item	Electrical Energy Savings in kWh	Savings (INR Million)	Investment (INR Million)	Payback Period in months
1	BLDC Fans	29200	0.29	0.70	29
2	Timers for water coolers	9000	0.09	0.02	2
3	Timers for high mast lighting	8322	0.08	0.04	6
4	Energy Efficient Pumps	34036	0.34	0.18	7
5	Temperature setting of 18 deg C to 22 deg C in Water coolers	10800	0.10	0	0

Energy Saving Projects 2022-23

Sl. No.	Name of the Item	Electrical Energy Savings in kWh	Savings (INR Million)	Investment (INR Million)	Payback Period in months
1	Occupancy sensors for ACs	124500	1.245	0.13	1.2
2	Temperature setting of 22 deg. C to 26 deg. C in AC	403200	4.032	0	0
3	Implementation of preventive maintenance schedules	29000	0.29	0	0

Energy Saving Projects 2023-24

Sl. No.	Name of the Item	Electrical Energy Savings in kWh	Savings (INR Million)	Investment (INR Million)	Payback Period in months
1	Energy Efficient Pumps	27229	0.27	0.14	7
2	Provision of VFD drives for lifts	58814	0.59	0.08	2
3	Automation of Pumps	22380	0.22	0.05	3
4	Provision of Bus Coupler for switching off transformers for effective utilization	1500	0.02	0.10	80

GREEN POLICY

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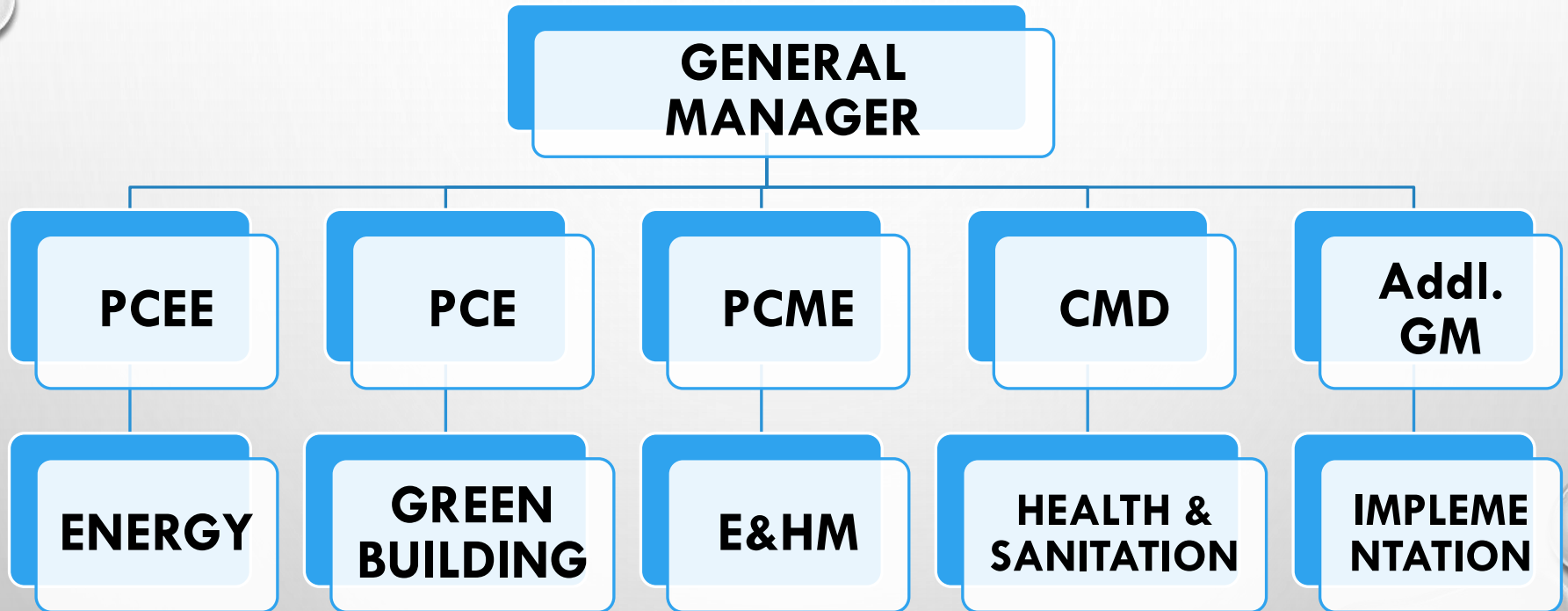
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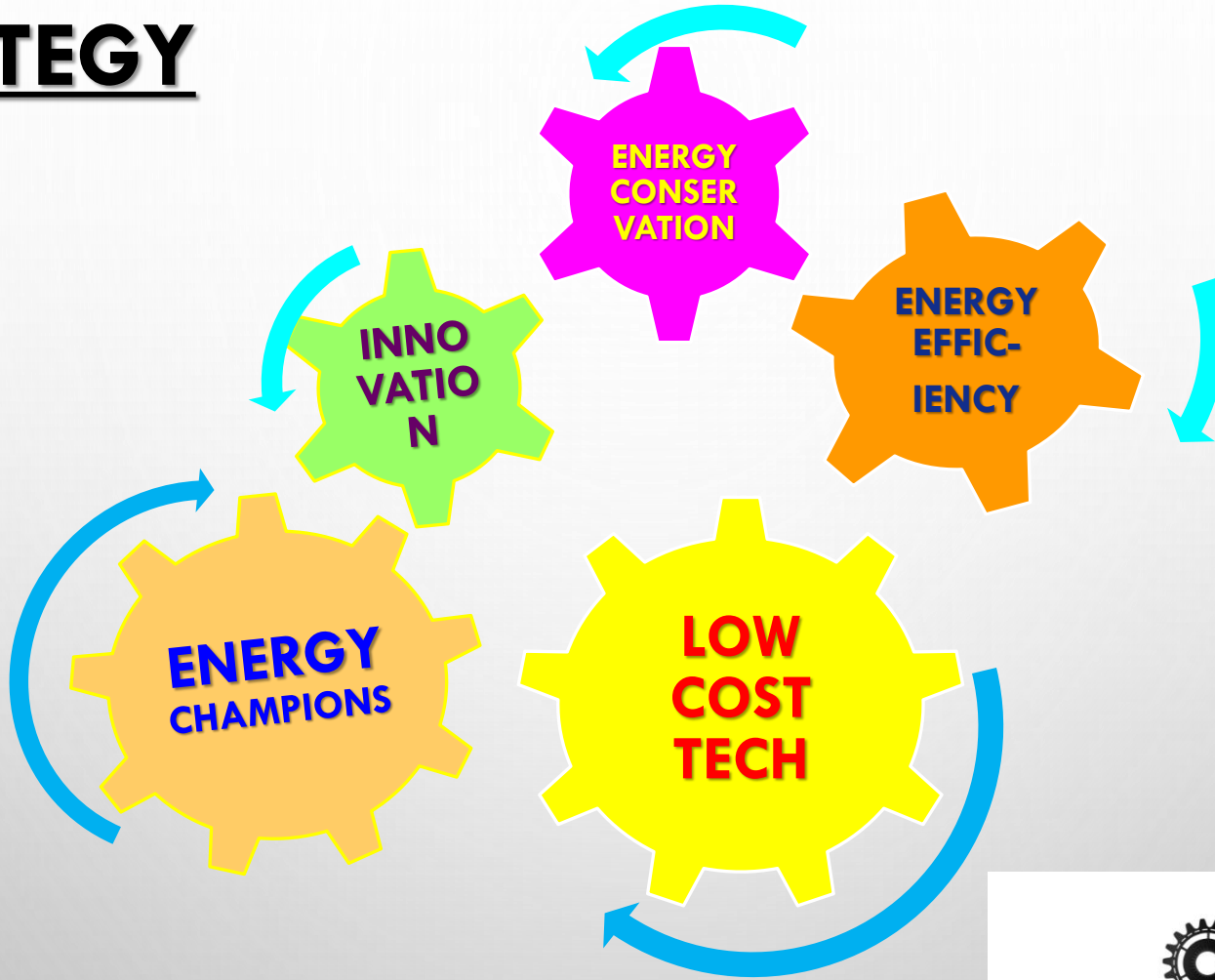
TRANSFO
RMATION
CELL

POLICY
INTERVENTION

GREEN MISSION STRATEGIC TEAM



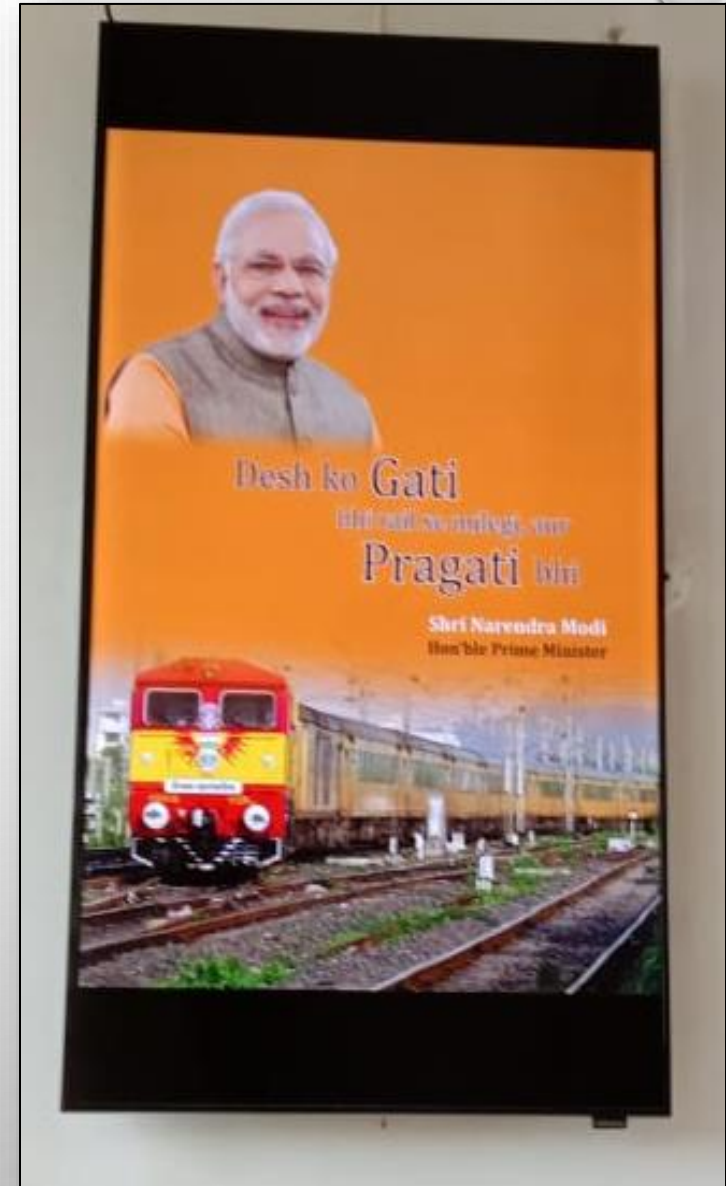
ENERGY STRATEGY



GREEN INITIATIVES AND FEATURES

- GREEN TREE FAÇADE BY ASHOKA (Saraca - asoca) TREE
- ROOFTOP SOLAR POWER PLANT
- NATURAL ILLUMINATION PROMOTIONS
- RECYCLING OF WATER & STP
- DAY LIGHT PIPE SYSTEM
- SUN CONTROL FILM ON WINDOW PANS
- MASSIVE TREE PLANTATIONS
- e-WORKING AND e-FILE SYSTEMS
- e-DISPLAYS OF INFORMATIONS
- SMART REST ROOMS AND GREEN URINAL
- LED SIGNAGES AND NAME BOARDS
- SOLAR WATER HEATING SYSTEM
- ROOF GARDEN AND LAWN
- SEGREGATION OF WASTE AND WASTE MANAGEMENT
- HEAT REFLECTIVE PAINTS AND LOW EMISSION PAINTS

e-Display of Information



GREEN INITIATIVES AND FEATURES



Rooftop Solar Plant



Natural Day Light



Segregation of Dry & Wet Waste



PAN IR Video Conference Hall

GREEN INITIATIVES AND FEATURES



Recycling of Water & STP



Roof Garden



LED Signage Boards



Sensor based Taps

GHG Emission Reduction

GHG Emissions Reductions:

- + 140 kWp Solar Energy
- + Dedicated 11kV/440V Line, so that Generation from DGis reduced
- + Use of 5 star rated Inverter HVAC
- + Energy Audits
- + 100% LED Lightings
- + Energy Efficient VVF Drives in Lifts

Energy Conservation Awareness Programme



Energy Conservation Awareness Programme



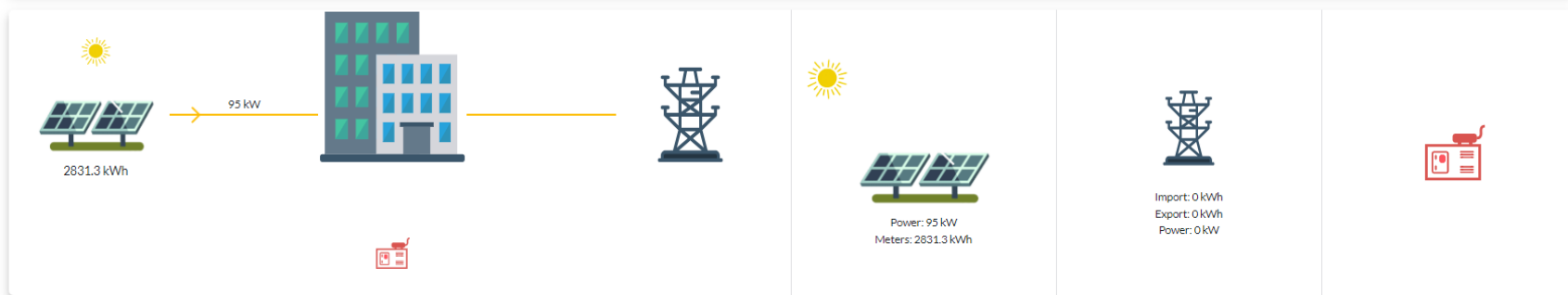
Energy Conservation awareness programme had been organised during the energy conservation week. As part of this Energy Conservation Tips scrolling board, Door to Door Campaign, etc. are provided

ON LINE ENERGY MONITORING


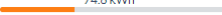
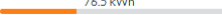
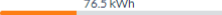
[Live](#)
[Graphs](#)
[Detail](#)

Statistics


1.73 kWh/kWp Yield
86.3% PR
N.A. Temp. Corrected PR
7.2% CUF




Inverters

SL.No	Name	Energy Today	Power Now	Op. State
IRISET 1&2 (SLN00B42DG) 				
1	Inverter1	74.6 kWh 	-kW	-
2	Inverter2	76.5 kWh 	-kW	-
3	Inverter3	76.5 kWh 	-kW	-

Energy Meter Now

SL.No	Yesterday Reading	Today Reading	MF	Today Generation
IRISET 1&2 (SLN00B42DG) 				
Meter 1	496643	496719	1	76 kWh
Meter 2	943106.5	943264	1	157.5 kWh

ZRTI-Admin Building (SLN00BB27H) 

Energy Conservation and GHG Policy



Energy Conservation Policy of Hyderabad Division

1. Daily monitoring the Energy consumption through specially designed software.
2. Creating awareness among the users through various activities such as brochures / seminars.
3. To minimize the specific energy consumption w.r.t previous years.
4. Conducting of regular inter departmental energy audits aimed to minimize the energy losses.
5. Implemented the action plan of energy conservation items to reduce the Energy Consumption at least by 10% every year w.r.t. previous years targets.
6. Promote use of the renewable sources of energy.
7. Use of latest BEE 5 star rated Electrical Fittings and Equipments.

A handwritten signature in blue ink, appearing to read 'Kiran'.

K. Kiran Kumar

**Senior Divisional Electrical Engineer,
Hyderabad Division, South Central Railway.**



GHG Policy of Hyderabad Division

1. We committed to use products which reduce the GHG emission.
2. Using of eco-friendly refrigerants in HVACs, Refrigerators, Water Coolers etc.
3. Converting Existing Office Buildings into Green Buildings.
4. Use of Solar and Wind Energy.
5. Ensuring availability of resources for continual reduction of GHG emissions intensity.

A handwritten signature in blue ink, appearing to read 'Kiran'.

K. Kiran Kumar

**Senior Divisional Electrical Engineer,
Hyderabad Division, South Central Railway.**

The background of the slide features a light gray gradient with several realistic water droplets of various sizes scattered across the top and bottom. The droplets have highlights and shadows, giving them a three-dimensional appearance. A solid teal horizontal band is positioned in the middle of the slide, containing the main title.

INNOVATIVE PROJECTS

Innovation Projects Implemented

Innovative Ideas	Project Description	Benefits Achieved
Implementation of preventive maintenance schedules	Implementation of preventive maintenance schedules	0.29 Lakh units per annum Rs. 2.9 Lakh per annum
Temperature setting of 22 deg C to 26 deg C in AC	Temperature setting of 22 deg C to 26 deg C in AC	4.03 Lakh units per annum Rs. 40.32 Lakh per annum
Use of Bus-coupler	Bus-coupler has been provided for switching of loads between 1500kVA and 500kVA transformers	Rs. 8.15 Lakh per annum

Innovation Projects Implemented

- Bus coupler panel was energized for shifting loads between 1500kVA and 500kVA transformers during light load days i.e., weekends/holidays.
- No load losses of the transformer will be reduced and also increases the efficiency of the 1500kVA transformer.
- Approximate Energy Savings per annum – 1.20 Lakh Units per annum.
- Approximate Monetary Saving of Rs. 9.60 Lakhs per annum.



Renewable Energy Utilization (140 kWp)

Year	Technology	Type of Energy	Onsite/ Offsite	Installed capacity	Generation in kWh	% of overall electrical energy
2021-22	Solar PV	Electrical	Onsite	140 kWp	145440	9.26
2022-23	Solar PV	Electrical	Onsite	140 kWp	156195	10.2
2023-24	Solar PV	Electrical	Onsite	140 kWp	196960	12.8



The background of the slide features a light gray gradient with several realistic water droplets of various sizes scattered across the top and bottom edges. The droplets have highlights and shadows, giving them a three-dimensional appearance. A solid teal rectangular box is centered on the page, containing the title text in white.

Other Energy Conservation Measures

100% LED Lit Zonal HQ Building - First in Indian Railways



Natural Day Light Pipes



Solar Water Heater





Awards & Achievements

IGBC Green Rating - Gold

➤ Received IGBC Green Gold Rating.



Rail Nilayam-ISO 50001:2018

Certificate of Registration

This is to Certify that
Energy Management System of




RAIL NILAYAM

HYDERABAD DIVISION, SOUTH CENTRAL RAILWAY, SECUNDERABAD – 500071,
TELANGANA STATE, INDIA

has been assessed and found to conform to the requirements of
ISO 50001:2018
for the following scope :

PROVISION OF ELECTRICAL SUPPLY AND MAINTENANCE OF ENERGY RESOURCES FOR
RAIL NILAYAM SERVICE BUILDING

Certificate No	: 23EQKR06	Issuance Date	: 21/03/2023
Initial Registration Date	: 21/03/2023	Date of Expiry	: 20/03/2026
1st Surve. Due	: 21/02/2024	2nd Surve. Due	: 21/02/2025

   
Director

Magnitude Management Services Pvt. Ltd
B-55, Lower Ground Floor, Sector 02, Noida-201301, U.P., India
e-mail: info@mmscertification.com, website: www.mmscertification.com

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National Award for Excellence in Energy Management - 2023

Rail Nilayam has received Energy Efficient Unit Award.



National Award for Excellence in Energy Management - 2021

Rail Nilayam has received Energy Efficient Unit Award.



Confederation of Indian Industry

22nd National Award for Excellence in Energy Management 2021

This is to certify that

Rail Nilayam, Secunderabad

has been recognized as

"Energy Efficient Unit"

This acknowledgement is based on the evaluation by panel of judges at the "National Award for Excellence in Energy Management" held during 24 - 27 August 2021.

A blue ink signature of K S Venkatagiri.

K S Venkatagiri
Executive Director
CII - Godrej GBC

A blue ink signature of Ravichandran Purushothaman.

Ravichandran Purushothaman
Chairman, Energy Efficiency Council
CII - Godrej GBC

21st National Award for Excellence in Energy Management - 2020

Rail Nilayam has received Energy Efficient Unit Award.



20th National Award for Excellence in Energy Management - 2019

RailNilayam - Excellent Energy Efficient Unit



Net Zero Action Plan

- ❖ Installation Offsite SPV Plants to meet the demand
- ❖ Provision of Energy efficient Pumps
- ❖ Use of IoT Technology for Electrical Energy Monitoring and Controlling.
- ❖ Water conservation by implementing the water saving adaptors.
- ❖ Introduction of E-Vehicle and EV charging station for employees at office.

Energy Conservation future Plans and Targets



IOT based Energy Monitoring System



Low Carbon Cooling System



Power Quality Restorers



Smart Water Management and Pumping System

Learning from Previous Years CII Energy Awards

- ❖ Interaction with professional peers of other buildings & implemented new ideas.
- ❖ R&D buildings and IT buildings are different with regard to energy usage.
- ❖ GHG emission classification under Scope 01, Scope 02 & Scope 03.
- ❖ Clarity on EPI/SEC & Contribution to Nation Building.
- ❖ BMS system.

**THANK
YOU**

100% ECO

A 3D rendered graphic featuring the words 'THANK YOU' in large, bold, lime-green block letters. Below this, a thick, curved lime-green arrow points to the right. On the surface of the arrow, the text '100% ECO' is written in white, bold, sans-serif font. The entire graphic is set against a plain white background with soft shadows beneath the letters and arrow.