25th National Award for Excellence

in Energy Management 2024

Bangalore- MBP

Sep 2024

Agenda

Cognizant overview

Cognizant is one of the world's leading professional services companies with a vision to become the preeminent technology services partner to the Global 2000 C-Suite.

Snapshot

In January 2024,we celebrated
30 years
of serving our clients.

approximately **3,47,700**
employees.**1,33,600**
women employees.

Operations in nearly **50**
countries.

Three strategic pillars

- Accelerate growth
- Become an employer of choice
- Simplify our operations

Four business segments

- Financial services
- Health services
- Products and resources
- Communications, media and technology

Facility overview

The Cognizant MBP facilities are leased facilities.

The operations commenced from 2013.

- MBP F3 - 2013
- MBP G3 - 2016

Building area:

- MBP F3 - 7.41 lakhs SFT with G+10 floors
- MBP G3 - 4.35 lakhs SFT with G+10 floors

Seat capacity: 13,602

- MBP F3 – 8,514
- MBP G3 – 5,088

These buildings have **IGBC Certification** for **LEED INDIA Gold.**

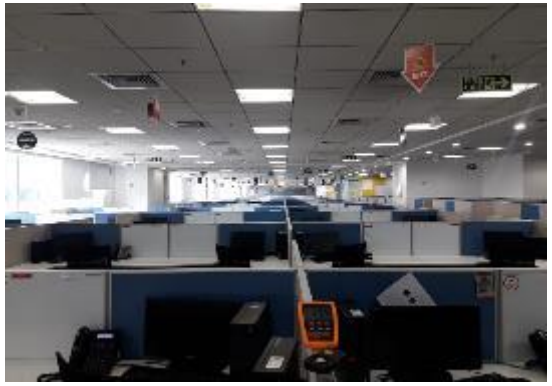
Utility overview

Descriptions	Specifications
Substation	• EB Demand : 4200 KVA • Transformer capacity : 4 X 2000 KVA and 2 X 1600 KVA
Diesel Generator	• Total Capacity : 12000 KVA • Capacity Break up : 6 X 1500 KVA and 2 X 1500KVA
UPS	• Total Capacity : 1480 KVA • Capacity Break up : 2 X 500 KVA and 2 X 240 KVA
Chillers	• Total Capacity : 3000 TR • Water cooled : 4 X 500 TR • Air cooled : 4 X 250 TR
Sewage Treatment Plant	• Total Capacity : 1000 KLD
High Speed Diesel (HSD)	• Total Capacity : 135 KL

* The G3 block has two wings and cognizant occupied in one wing as HSD,STP plats are common.

Architectural design of the building

100% - Modular UPS
(Efficiency - 99%)



100% LED lights
at workstations

100% LED lights at
pathways

VAV installed for workstation is 100%

100 % BMS and all equipment's operation with BMS

Double glazed façade glass- SHGC is 0.35

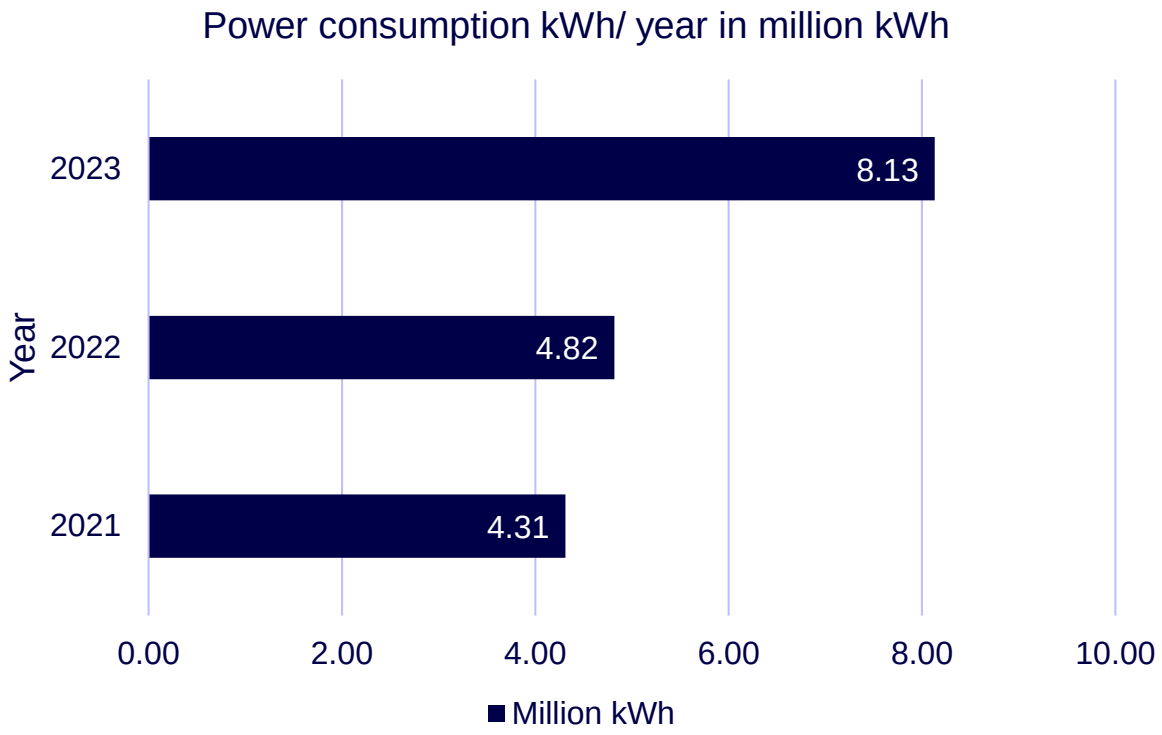
Hybrid chiller system operations (70% WCC and 30 % ACC) *

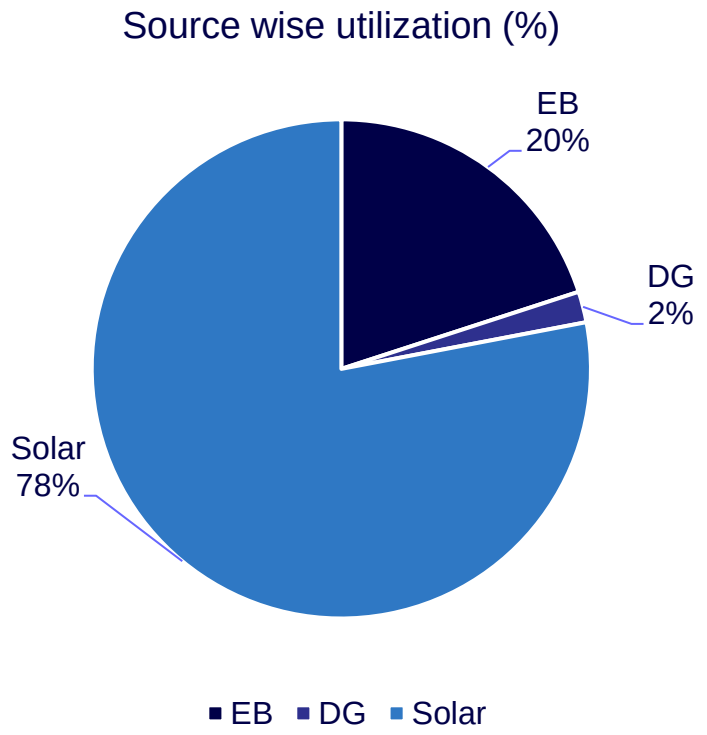
100% Modular UPS

100% LED in the campus

* The air-cooled chillers are operational during weekends and non-business hours due to minimal loads.

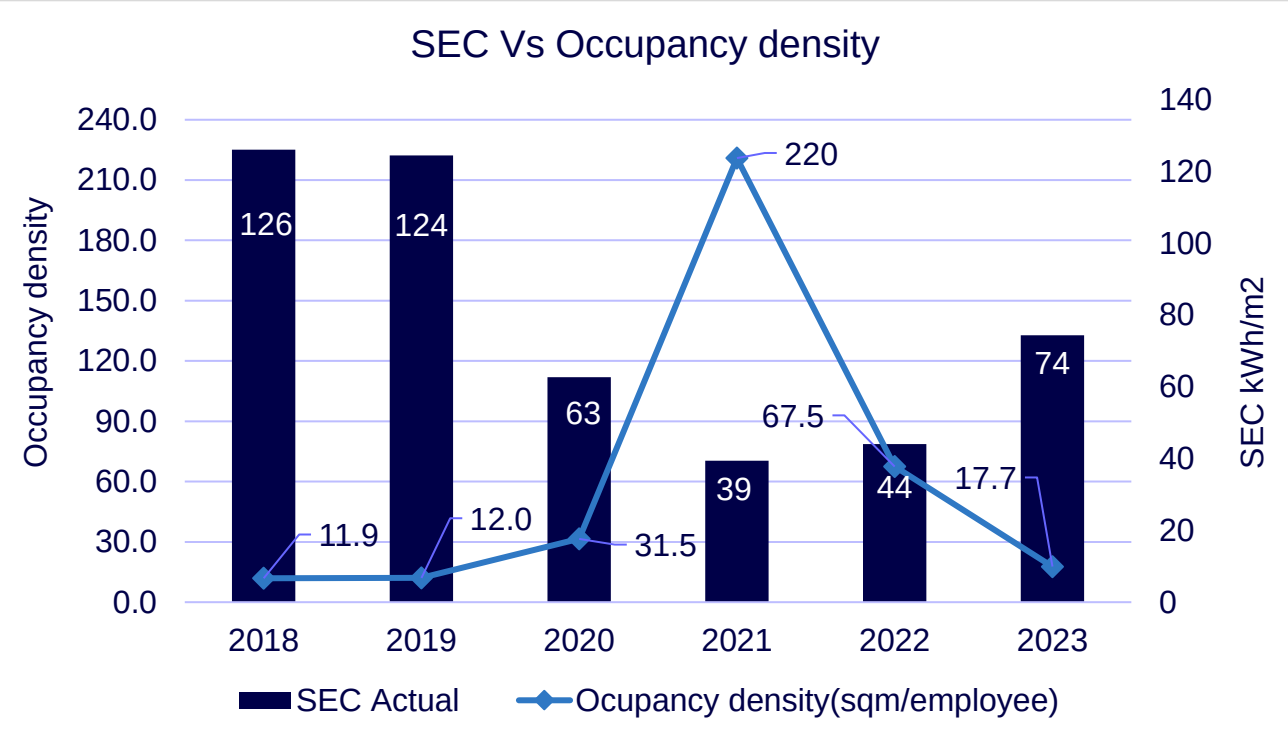
Energy consumption in the last three years - 2021 to 2023

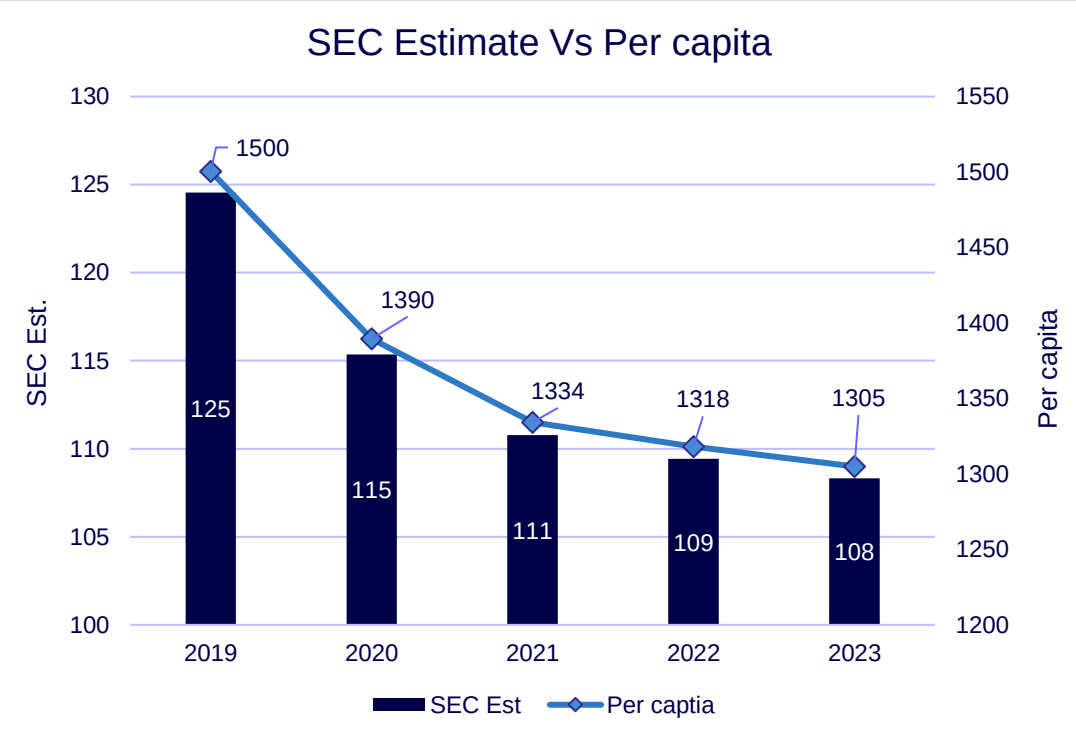




Inference:
The energy consumption increased in 2021 to 2023 around 53% due to increase in occupancy level. However, the energy consumption trend is much lesser as compared to normal business operations (Before Mar 2020).

Specific energy consumption (kWh/m2/Year) – 2019 to 2023





Inference:

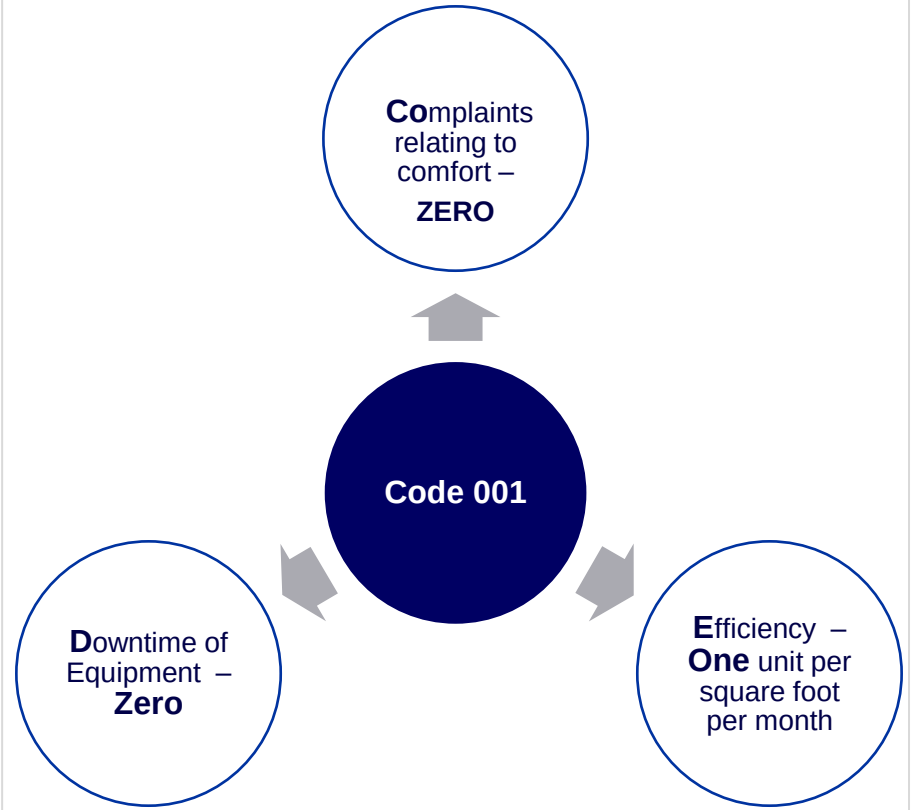
The SEC has shown an increasing trend from 2021 to 2023 as the occupancy is increasing, but it remains below the estimated SEC. The occupancy density was high in 2021 due to low occupancy caused by Work from Home (WFH).

National benchmark comparison

National Benchmark EPI in kWh / m^2/ Year			
Star Rating	**Warm and Humid**	**Composite**	**Temperate**
1 Star	200-175	190-165	187 - 163
2 Star	175-150	165-140	163 - 138
3 Star	150-125	140-115	138 - 114
4 Star	125-100	115-90	114 - 90
5 Star	Below 100	Below 90	Below 90

MBP facility EPI					
Description	2019	2020	2021	2022	2023
EPI: kWh/m2/year	124	63	39	44	74

Internal benchmark



Inference:

The facility is falling under 4 star rated category based on the SEC estimate of 108 kWh/m2/Year in FY 2023

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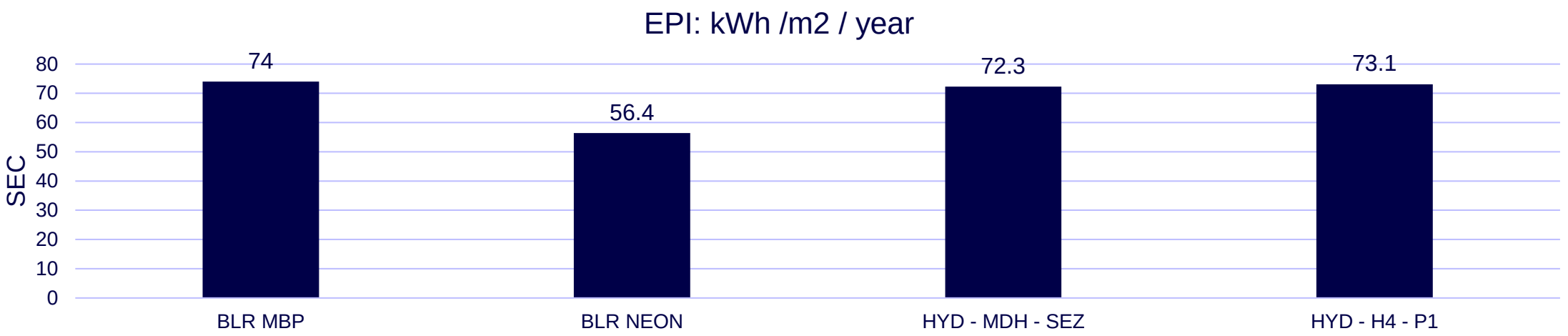
Cognizant internal benchmark comparison



Energy audit

To identify areas of improvement and prioritize energy-saving opportunities.

HVAC system retrofit

Retrofitting old DX AC units with more efficient systems like Variable Refrigerant Flow (VRF).

Sensor-based operations

Sensor-based controls to optimize operations, like sensor-based kitchen exhaust systems can automatically adjust exhaust fan speeds based on cooking activity.

Major Encon project planned in FY 2024-25

Lighting sensor for pantries, café, meeting & conference room and cabins (1 out of 6 Phases, 4 phases already completed).

The AHU supply provisions for switch room to reduce the run hours of VRV AC unit

VC room light optimization without affecting the LUX.

GF café light optimization by installing different kind of lights fixtures. Research work already completed.

Provision of timer for the exhaust unit of restrooms and pantries.

Energy saving projects implemented in the last three years

Year	Energy saving projects	Investment (INR in million)	Electrical savings (Million kWh)	Savings (INR in million)	SEC
2021	05	03	0.50	06	6%
2022	2	1.3	0.15	1.83	2%
2023	4	1.2	0.12	1.5	3%

List of energy conservation projects

2021

- ✓ DX- AC unit integration with BMS.
- ✓ Dedicated AC unit for dormitory
- ✓ UPS consolidation activities
- ✓ Lighting sensor for restricted critical room and cafe –Phase-1 (1 out of 6 Phases).
- ✓ LED retrofit for workstations lights
- ✓ Replacement of Split AC unit which is based on R22 refrigerant with new energy efficiency unit

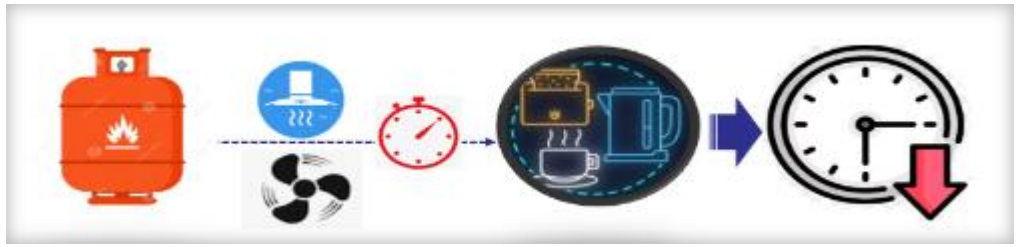
2022

- ✓ High wall mount Split AC unit retrofit activities-Phase-2.
- ✓ Lighting sensor for restricted ODC and Switch room -Phase-2 and Phase-3 project (1 out of 6 Phases).

2023

- ✓ Lighting sensor for pantries, café, meeting & conference room and cabins (1 out of 6 Phases, 3 phases already completed).
- ✓ The AHU supply provisions for switch room to reduce the run hours of VRV AC unit
- ✓ Sigma hall AC unit temp sensor relocation and integration to the BMS
- ✓ Café Fresh air unit and kitchen exhaust unit integration to BMS and provision of day timer

Innovative project: Linking LPG flow and ventilation with auto operations for optimal performance



Benefits

Energy saved : **7,700** kWh/ annum
Cost energy savings: **97,000** INR/ annum
Opex savings : **2,30,000 INR**

Environmental Benefits

Carbon emission reduction : **6.3 ton**

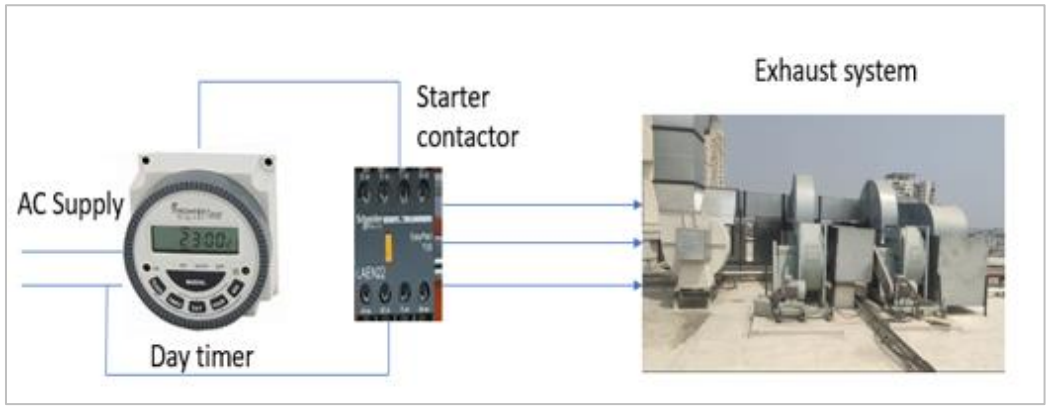
Equivalent trees planted : **91**

Idea description	• Linking LPG flow and ventilation for optimal performance. • Optimal performance: Achieving the highest level of efficiency, reliability and functionality in the automated control and operation of exhaust systems.
Key features	• This project was completed with an in-house team, resulting in low costs and high benefits. • It was initially implemented within the organization as a pilot initiative.
Option considered	• Auto operation and linking LPG Flow with ventilation systems • The plan involves scheduling each exhaust unit and fresh air unit by installing timers. Additionally, an indication panel has been installed in the BMS/ demo room to enable parallel monitoring and improve oversight. • The interlinking of the two fresh air units and three kitchen exhaust systems will be facilitated through the use of an LPG auto shut-off valve.

Innovative project: Executions

1

Automation



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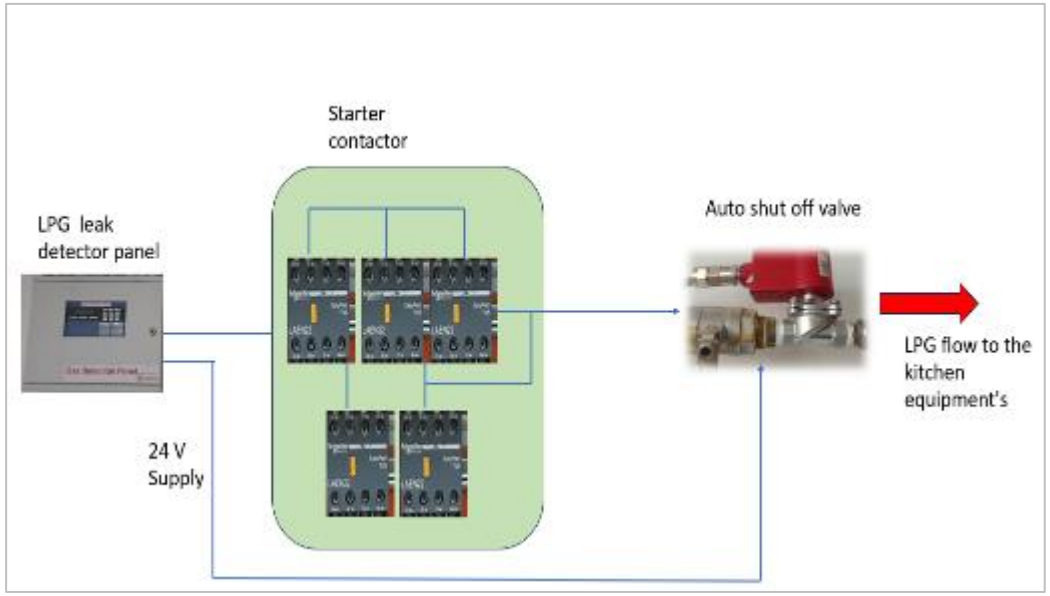
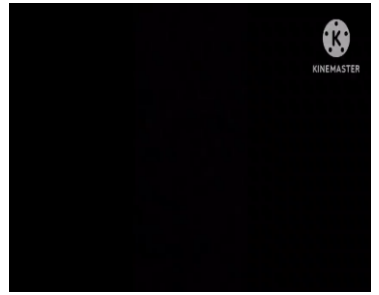


Demo Video



Utilization of renewable energy sources

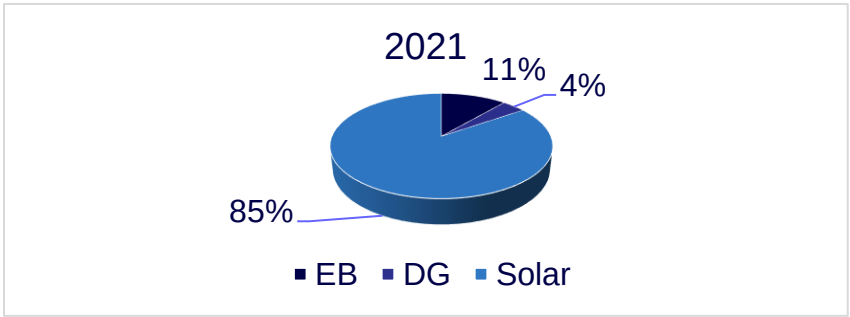
Technology
Electrical

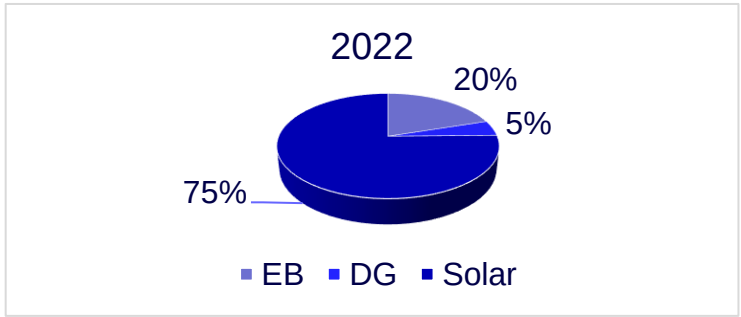
Type of energy
Solar

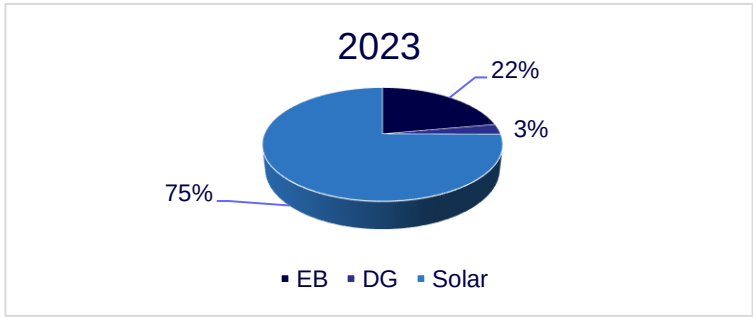
Onsite/ offsite
Offsite

Installed capacity
100 MW

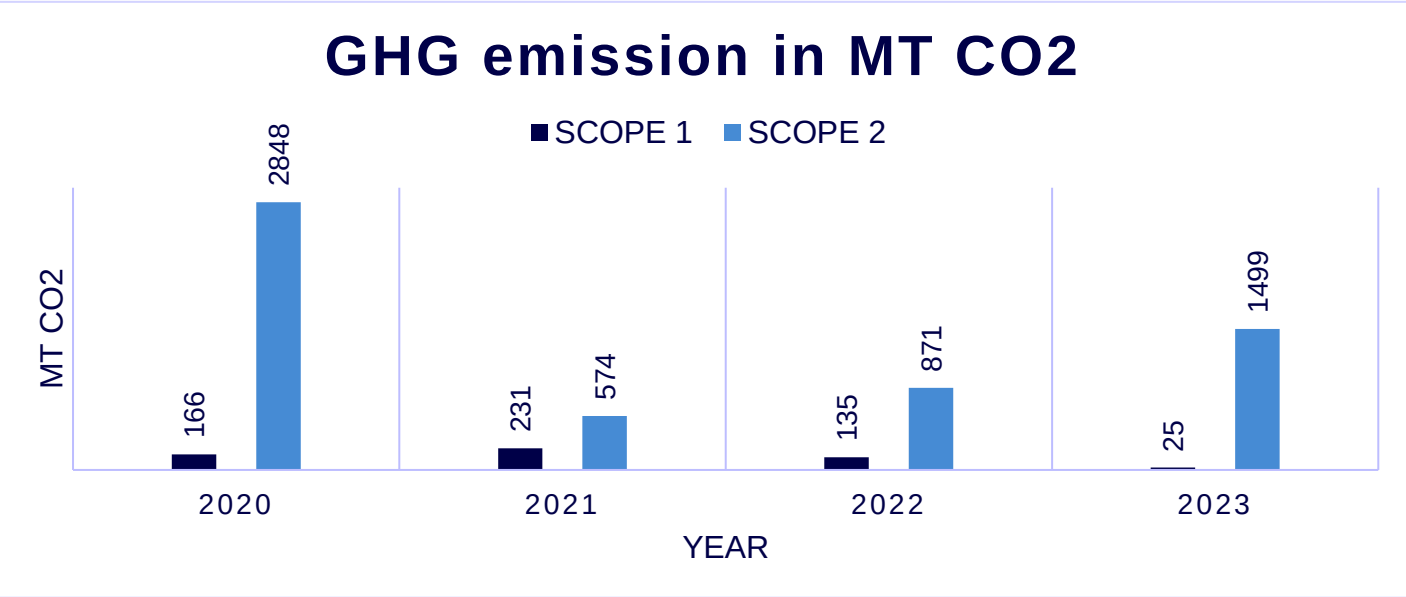
Utilization of renewable energy sources (kWh)		
Year	**Solar**	**Solar energy**
2021	36,49,901	Utilization vs EB - 85%
2022	36,27,608	Utilization vs EB - 75%
2023	61,03,212	Utilization vs EB - 75%







GHG emission and indoor air quality



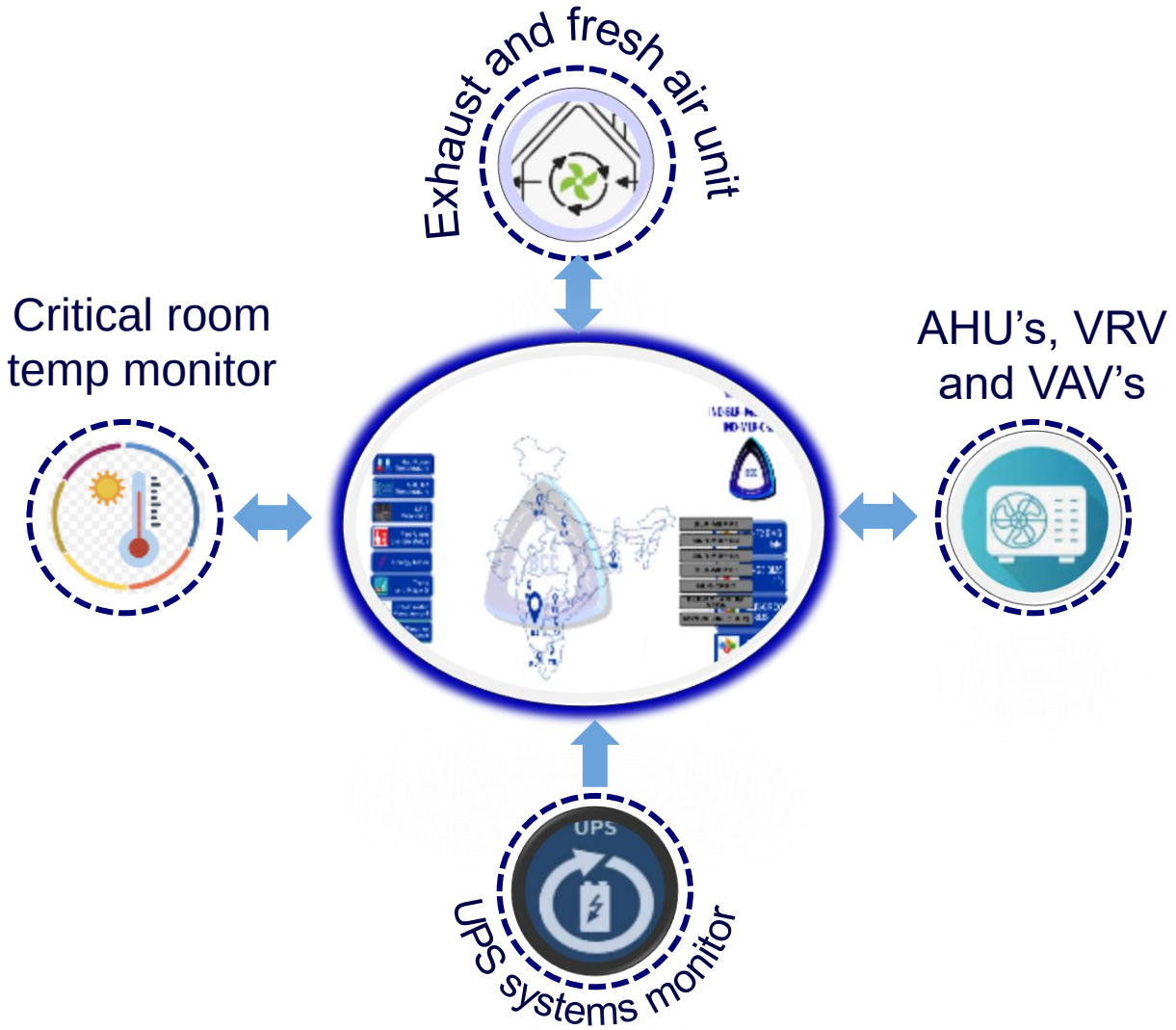
GHG reduction target and action plan

Sourcing of RE 100% in 2026:
In April 2022, we announced our objective to source 100% of our energy needs for our offices and facilities from renewable sources, by the end of 2026.

- Energy efficient project implementation.
- The phasing out of R22 refrigerant.
- Energy efficient project implementation – VRV AC unit, EC fan and CT retrofit.

Test parameters	Units	Result	Permissible limit	Remarks
Carbon dioxide (Co2)	ppm	718	< 1000	1. Testing through NABL laboratory. 2. Frequency of sampling is quarterly for workstations.
Total fungal count	Cfu/m3	<1	Max 500	
Total bacterial count	Cfu/m3	58	Max 500	

BMS & certification



Monitoring system in BMS

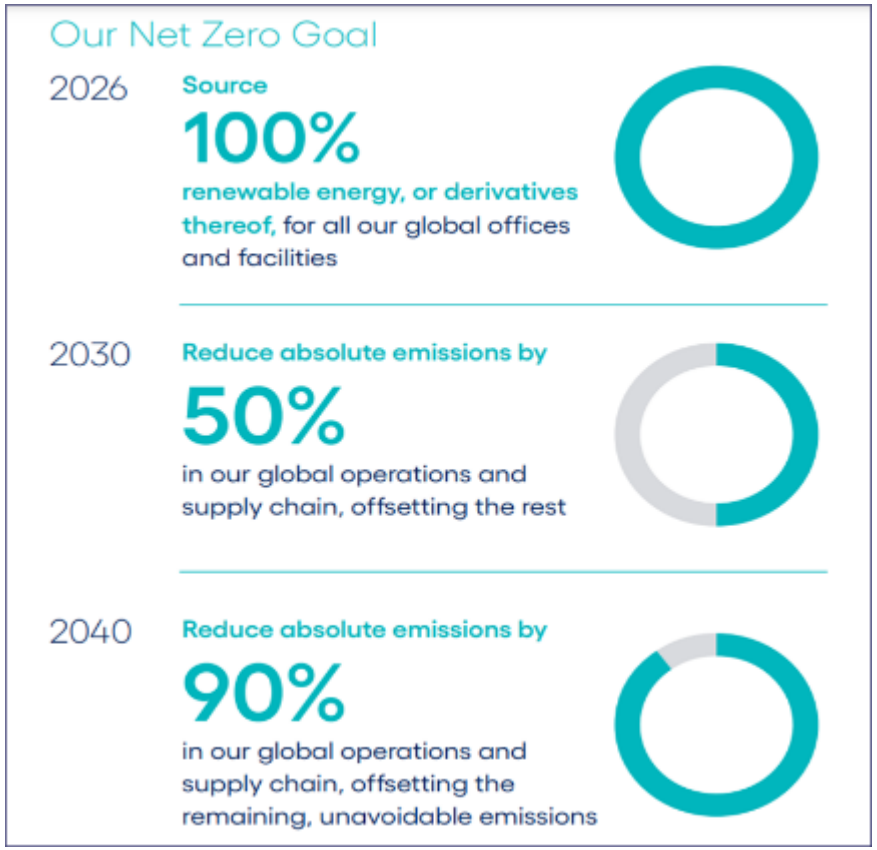
HVAC system: The monitoring and control of Air Handling Units (AHUs), Variable Refrigerant Volume (VRV) systems and Variable Air Volume (VAV) systems BMS, facility operators can efficiently regulate and adjust parameters such as temperature, airflow and ventilation to ensure comfort, energy efficiency and compliance with desired setpoints.

UPS systems: Monitoring of the UPS systems 24/7.

Critical room temperature: The effective monitoring of the temperature of the critical rooms like Hub room, MSR, Infra capsule.

Kitchen exhaust and fresh air system: Monitoring, scheduling and controlling of the ventilation systems.

Net Zero Goal and action plan



- In 2021, we announced our **Net Zero Goal**, a science-based approach to eliminate or offset our GHG emissions in line with the Paris Agreement.
- Net Zero Goal (compared to our 2019 emissions baseline).
  - 2030 – Reduce absolute emissions by 50% in our global operations and supply chain, offsetting the rest.
  - 2040 – Reduce absolute emissions by 90% in our global operations and supply chain, offsetting the remaining, unavoidable emissions.
- In April 2022, we announced our objective to source 100% of our energy needs for our offices and facilities from renewable sources, solar and wind, by the end of 2026.
- We plan to achieve our Net Zero Goal through six main levers: Renewable energy, green buildings, travel reduction, green IT and data centers, supply chain engagement and carbon offsets.

Waste & Water Management

Waste Management

E- Waste

Hazardous waste

Non-Hazardous waste

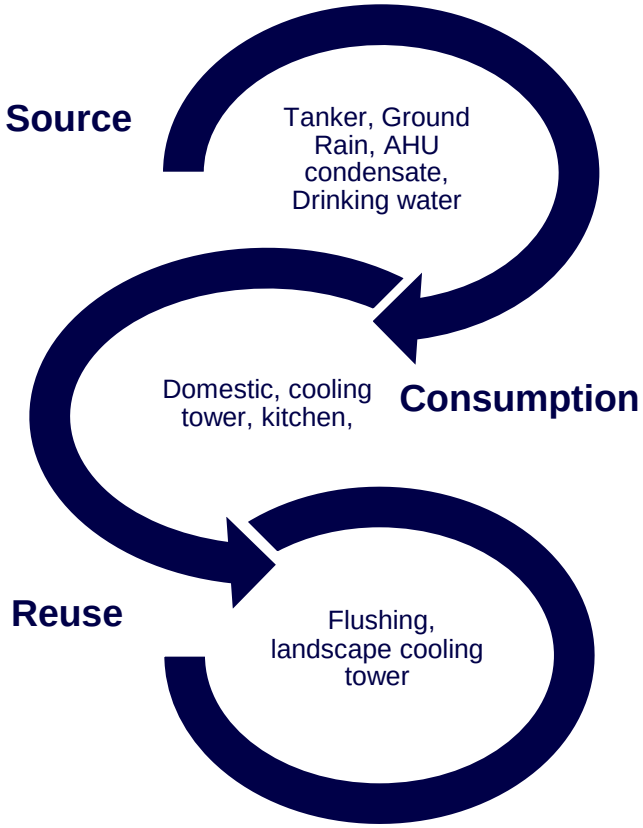
Disposal Method

Collected and stored in designated area. Disposing to authorized vendor

Food waste

Processed through OWC and utilized as manure

Water Management



Water utilization %
Fresh water : 61%
Treated water : 39%

Certification


LEED Zero

Embassy Manyata - F3 Block Palm

BANGALORE, INDIA

has fulfilled the requirements of LEED Zero Water certification, as verified by Green Business Certification Inc.

LEED Zero, developed by the U.S. Green Building Council, is a complement to LEED that verifies the achievement of net zero goals and signals market leadership.

LEED Zero Water

FEBRUARY 2024


LEED Zero

Embassy Manyata - G3 Block Teak

BANGALORE, INDIA

has fulfilled the requirements of LEED Zero Water certification, as verified by Green Business Certification Inc.

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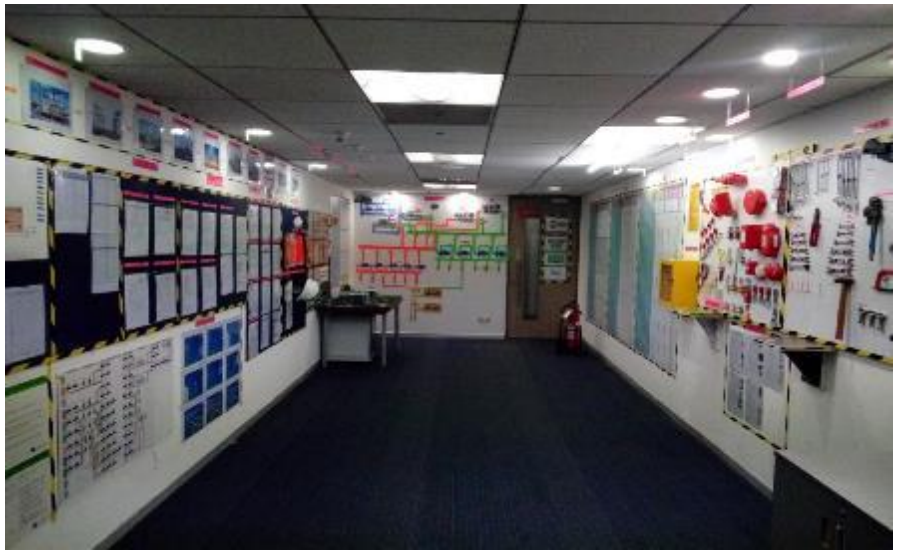
LEED Zero Water

FEBRUARY 2024

Best practice



Demo Room for Training

The demo room created in our buildings, where we have all critical systems details like SLD, power distribution, transmission line, Sop's which will give overview knowledge for existing and newcomers to understand the system.

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Best Practices

PIR Sensors

PIR sensors have been installed in restricted areas, the cafeteria, the switch room, and the workstations where the lights are continuously on. These sensors automatically switch off the lights when there is no occupancy

Timer installation

Timer for bain-marie and exhaust fan by In-house team, to control the running hours as we required which contribute to reduction in energy consumptions

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Earth hour celebrations

Battery operated inspection truck

Remote controlled equipment which operate inside the duct and visualize the mechanism defects and duct joints for any leakages.

Green projects

Continuously driving for projects which gives energy reductions (like UPS consolidation LED retrofit etc..) as a result reduced demand of 800 KVA.

Weekend load reduction

Switching OFF the unwanted lights, equipment's which are manually operation and auto scheduled AC if no occupancy.

Reward & Recognition

The reward and recognition of engineering team to motivate the ground team for energy savings idea and performance

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IGBC certification

CII
Confederation of Indian Industry

Indian Green Building Council

Indian Green Building Council (IGBC)

hereby certifies that

Block F3 (Palm) - Manyata Embassy Business Park

Bangalore

has successfully achieved the Green Building Standards required for the following level of certification under the IGBC's Leadership in Energy and Environment Design (LEED) India Green Building Rating System

IGBC's LEED India for Core & Shell Gold

September 2015

C N Raghavendran	Dr Prem C Jain	S Raghupathy
Chairman, LEED India	Chairman, IGBC	Executive Director, CII-Godrej GBC

LEED certifications

Awards

Energy efficient unit awards 2021

Energy efficient unit awards 2022

EHS Excellence awards 2019 (4 star)

EHS Excellence awards 2019 (Digitalization)

Major achievements

Benefits…….

<u>UPS consolidation:</u>

- Capacity reduction: 700 KVA
- Energy saved:5.10 L kWh/annum
- Batteries qty optimized: 1192 to 840 = 352 No's

<u>LED retrofit:</u>

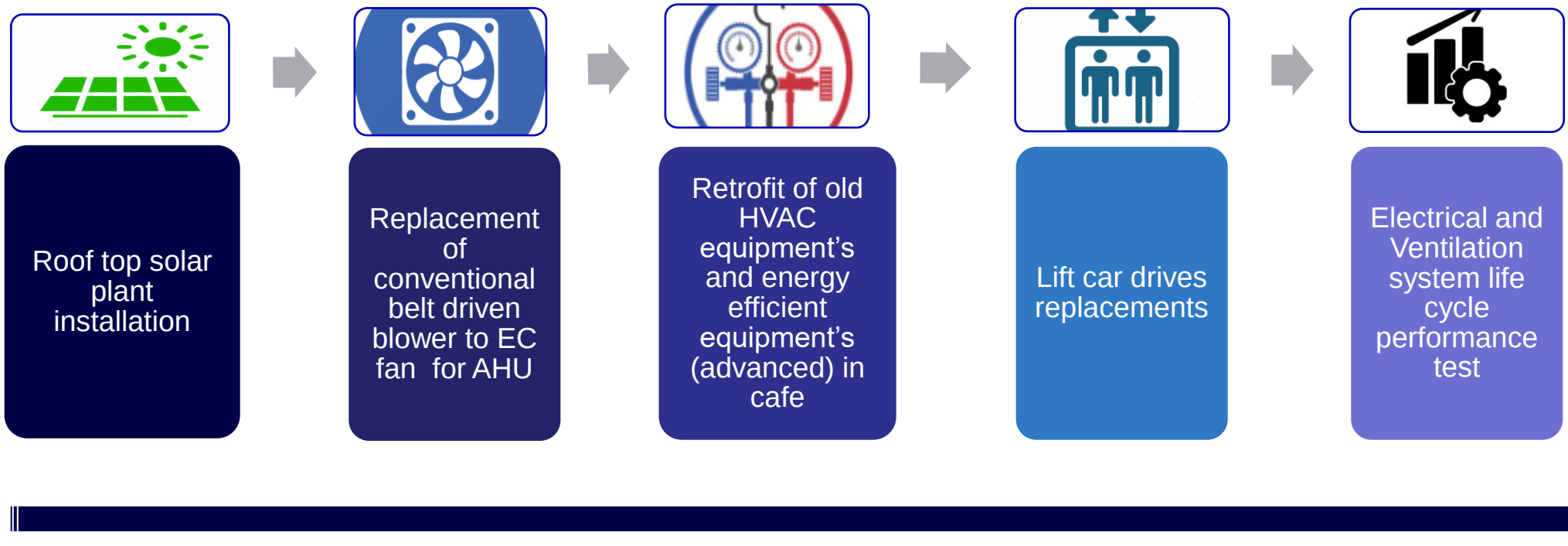
- Capacity reduction: 191 KW
- Energy saved : 3.5 L kWh/annum

<u>MD reduction:</u>

- Reduction: 800 KVA
- Annual cost savings INR.2.5 Million

…….

Way forward



Thank you

Kaushik Kumar - Associate Director

Krishnappa Kulal - Energy Manager