



23rd National Award for “Excellence in Energy Management 2022”

HYD - H04

August'2022

Agenda

- ✓ **Brief of the Organization**
- ✓ **Facility Overview**
- ✓ **Energy Consumption Overview for the Year 2019-2021**
- ✓ **Specific Energy Consumption in Last 3 years (2019-2021)**
- ✓ **Information on Internal, External, National & Global Benchmark**
- ✓ **Energy Saving Projects Implemented Details (2019-2021)**
- ✓ **List of Major Energy Conservation Project Planned in 2022**
- ✓ **Innovative Technologies Implemented**
- ✓ **Utilization of Renewable Energy Sources**
- ✓ **Waste Utilization & Management**
- ✓ **GHG Inventorisation**
- ✓ **Standardization of Best Practices**
- ✓ **Teamwork, Employee involvement & monitoring**
- ✓ **Awards & Certification**

Cognizant Overview

Cognizant (Nasdaq-100: CTSH) is one of the world's leading professional services companies that engineers modern businesses. We help our clients modernize technology, reimagine processes and transform experiences so they can stay ahead in our fast-changing world. Together, we're improving everyday life.

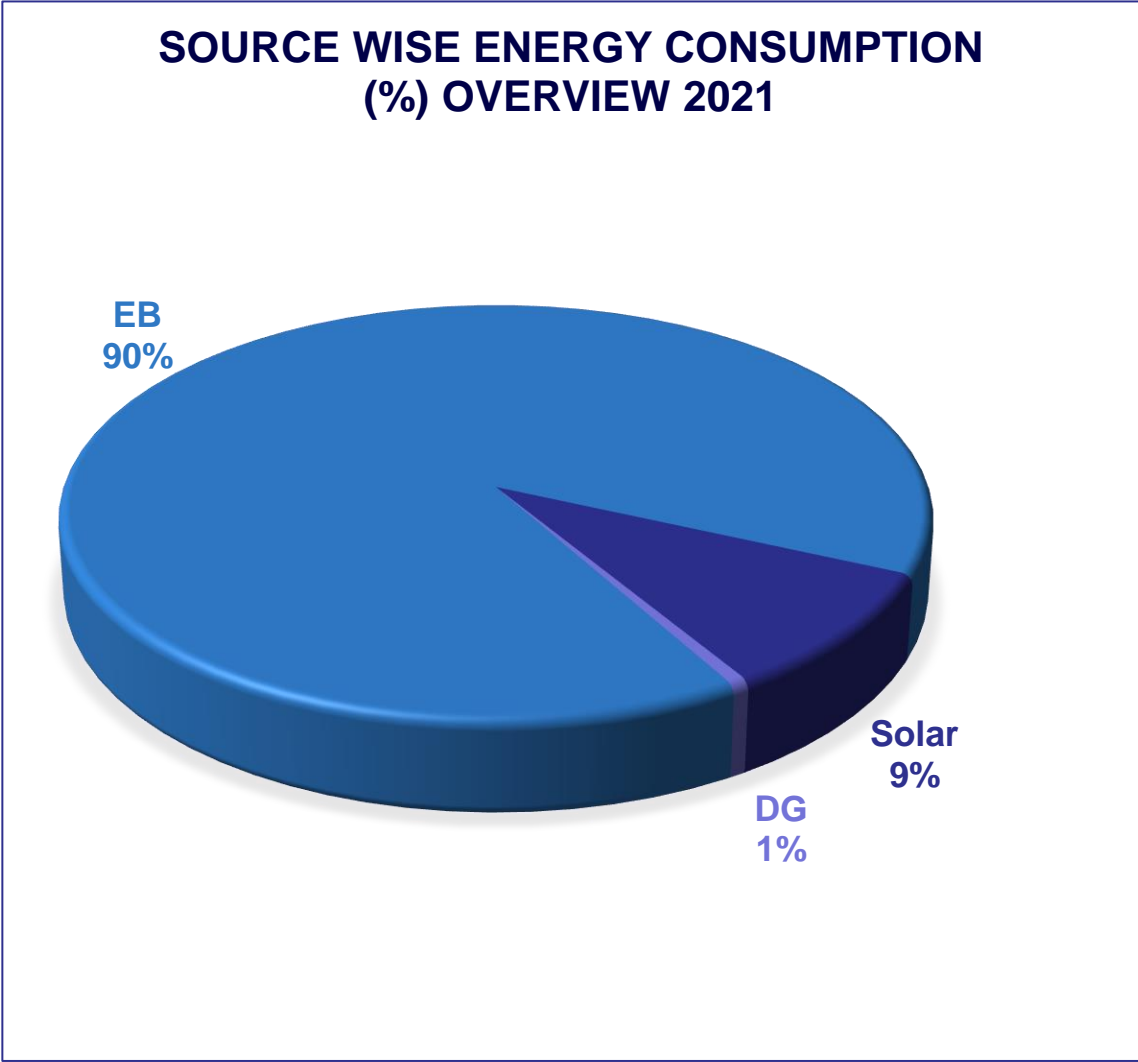
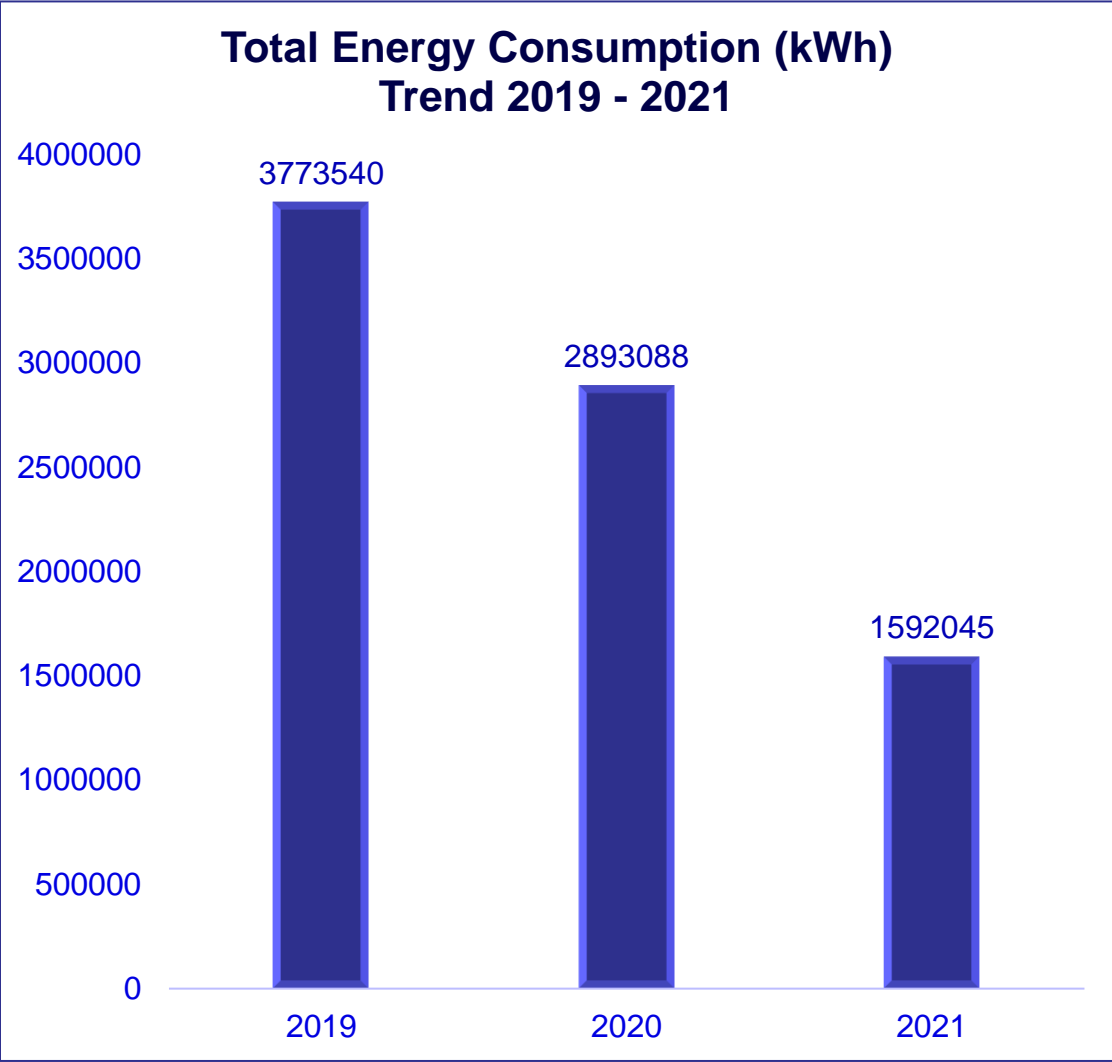


Facility Overview

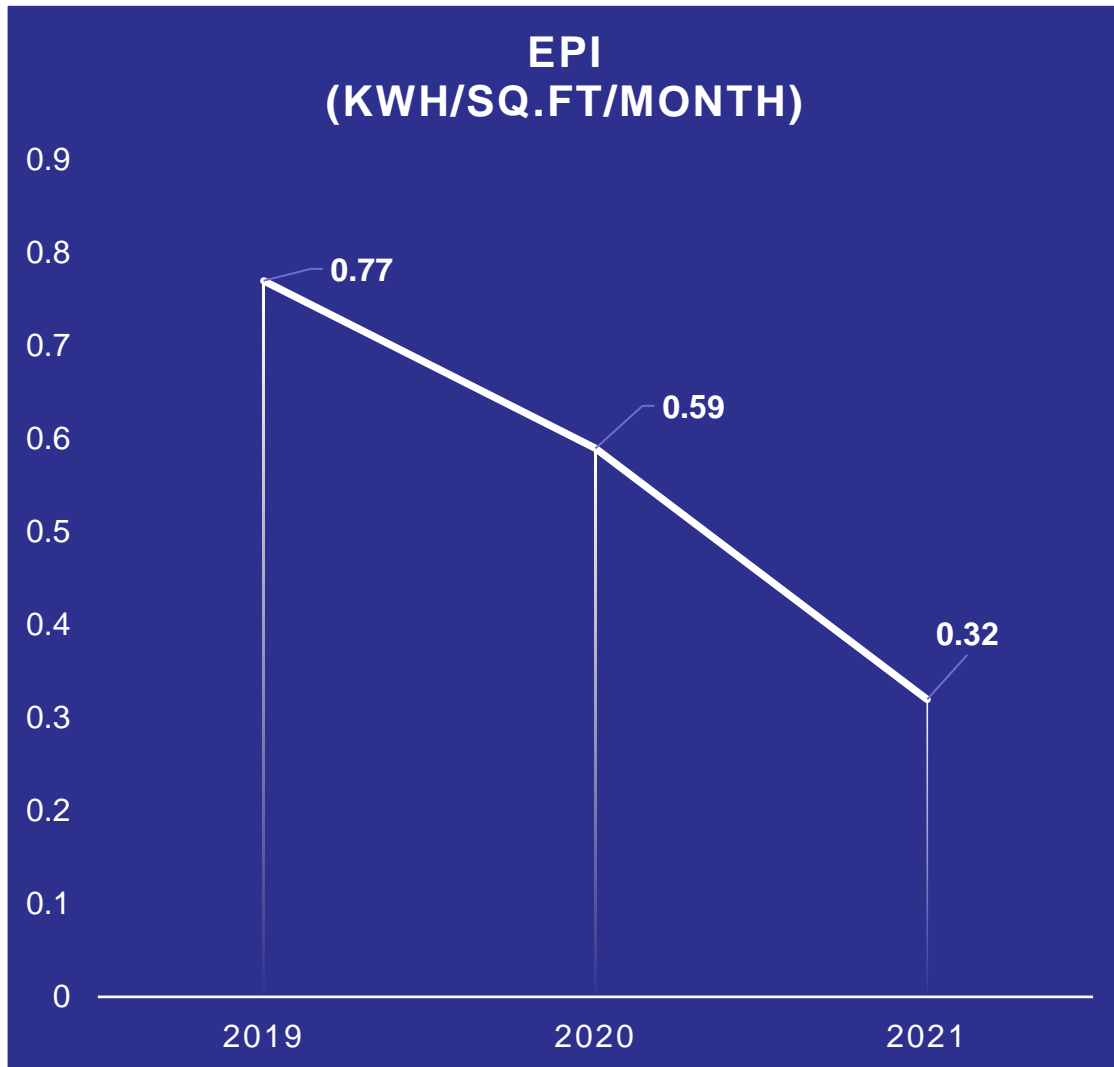
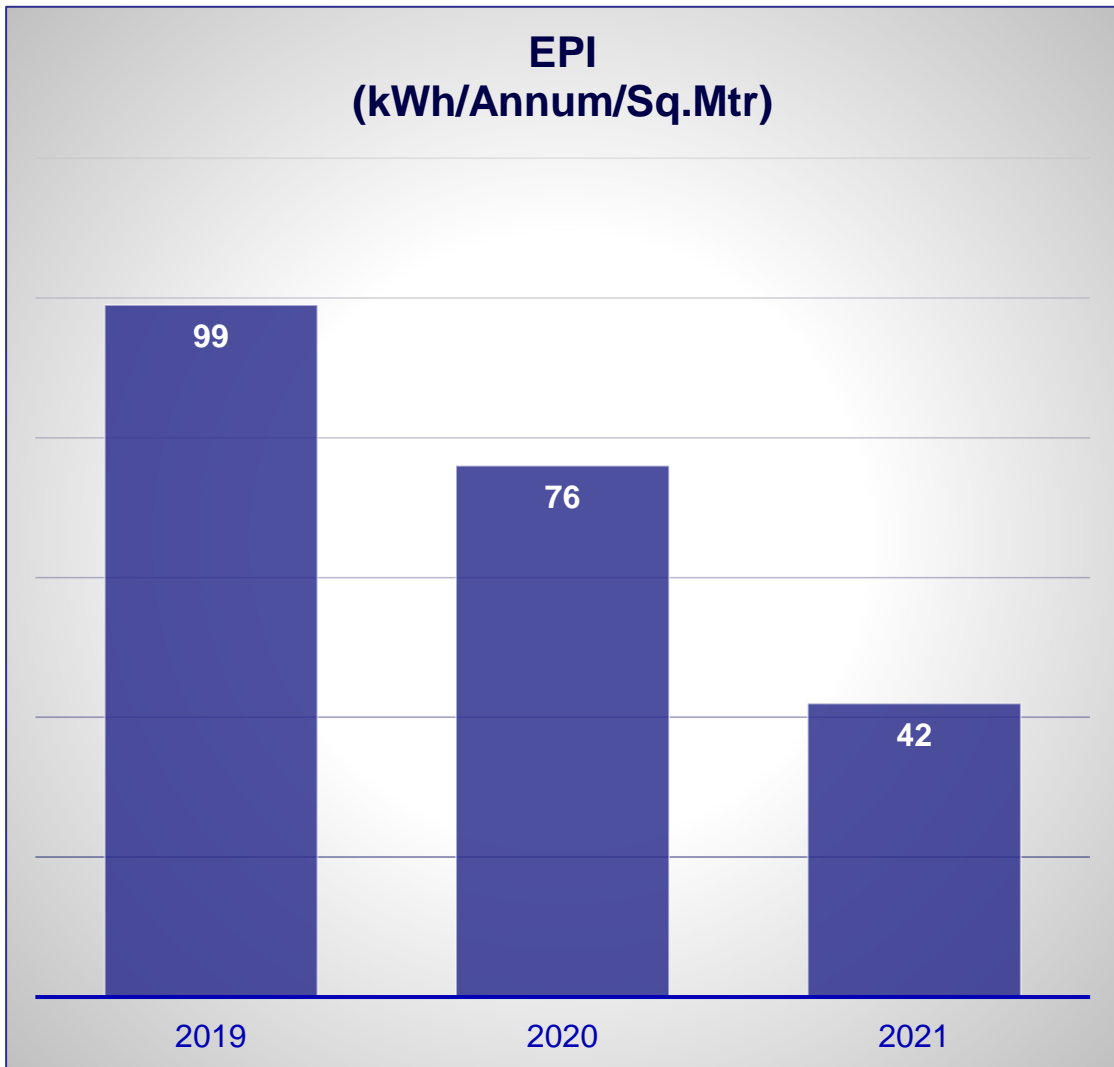
- ✓ Operations from 2017, Multi-Tenant Facility at Avance Business Hub, Phoenix Hitech City
- ✓ Occupied Built-up Area – 4,09,160 SFT
- ✓ Occupied Floors - 6 Business floors, which includes training rooms/board rooms/Cafeteria and Basement(B1,B2) for parking the vehicles
- ✓ Seating Capacity : 3724
- ✓ BAU Head Count : 3974 Associates & 310 CWR
- ✓ TSPDCL Sanctioned Demand – 1500 KVA
- ✓ TSPDCL Supply Voltage Level – 33 KV
- ✓ Transformers Aggregate Capacity – 5000 KVA
- ✓ Diesel Generator Aggregate Capacity – 4010 KVA
- ✓ Solar Aggregated Capacity – 0.2 MW
- ✓ Chiller Aggregate Capacity –1500TR
- ✓ UPS Aggregate Capacity –1310 KVA
- ✓ Exclusive Medical Center with Ambulance Service



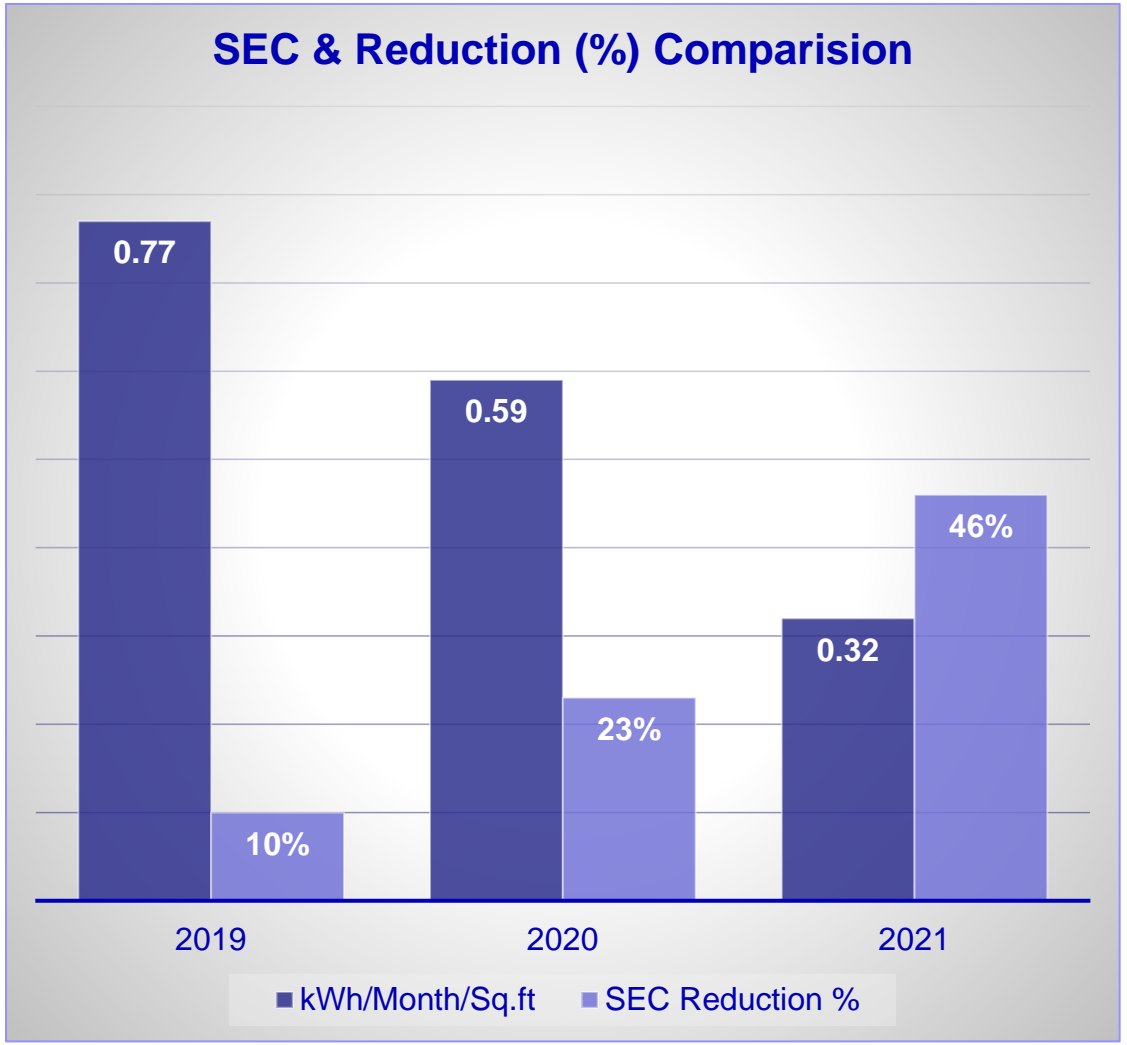
Energy Consumption Overview for year 2019 - 2021



Specific Energy Consumption Trend - 2019 to 2021

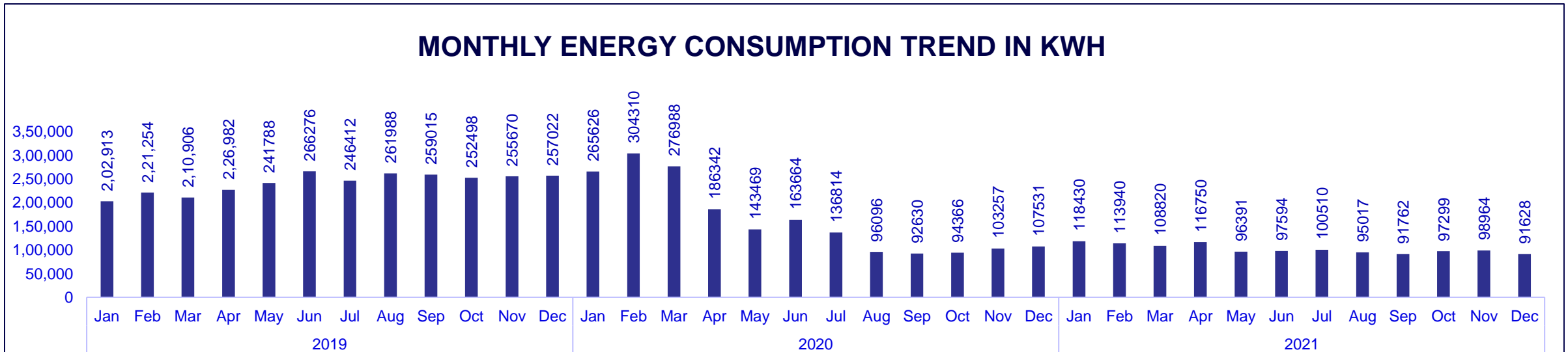
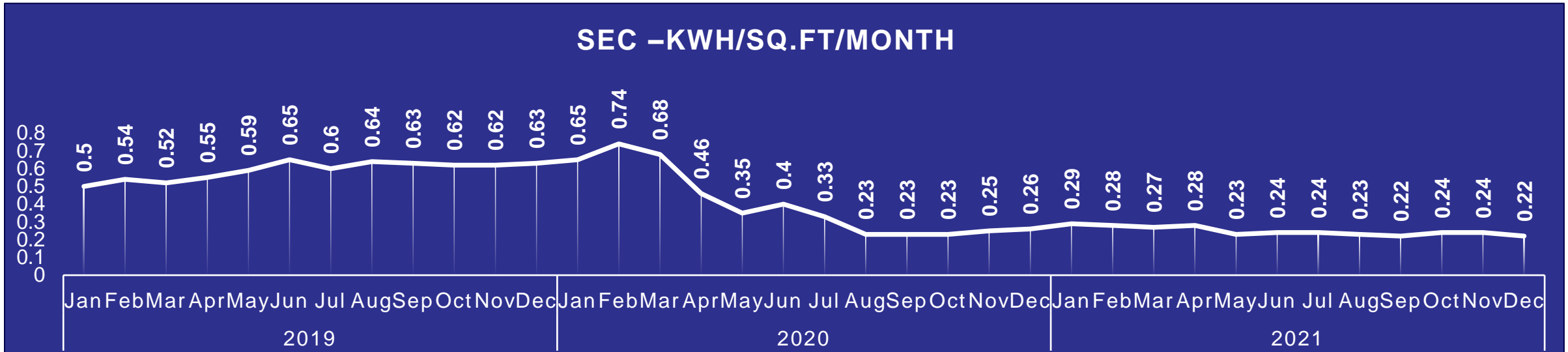


Specific Energy Consumption Trend Analysis - 2019 to 2021



- 2019**
 - ✓ Radiant cooling system installation
 - ✓ Auto Tube cleaning system installation for condenser
- 2020**
 - ✓ CPU & Monitor Unplugging
 - ✓ Timer Controller for Peripheral Lighting
 - ✓ Limit Switch for AHU Room & Fire Shaft Door
- 2021**
 - ✓ Operation control - VC devices switched off
 - ✓ Enabled ECO mode for the Modular UPS

Specific Energy Consumption Overview - 2019 to 2021

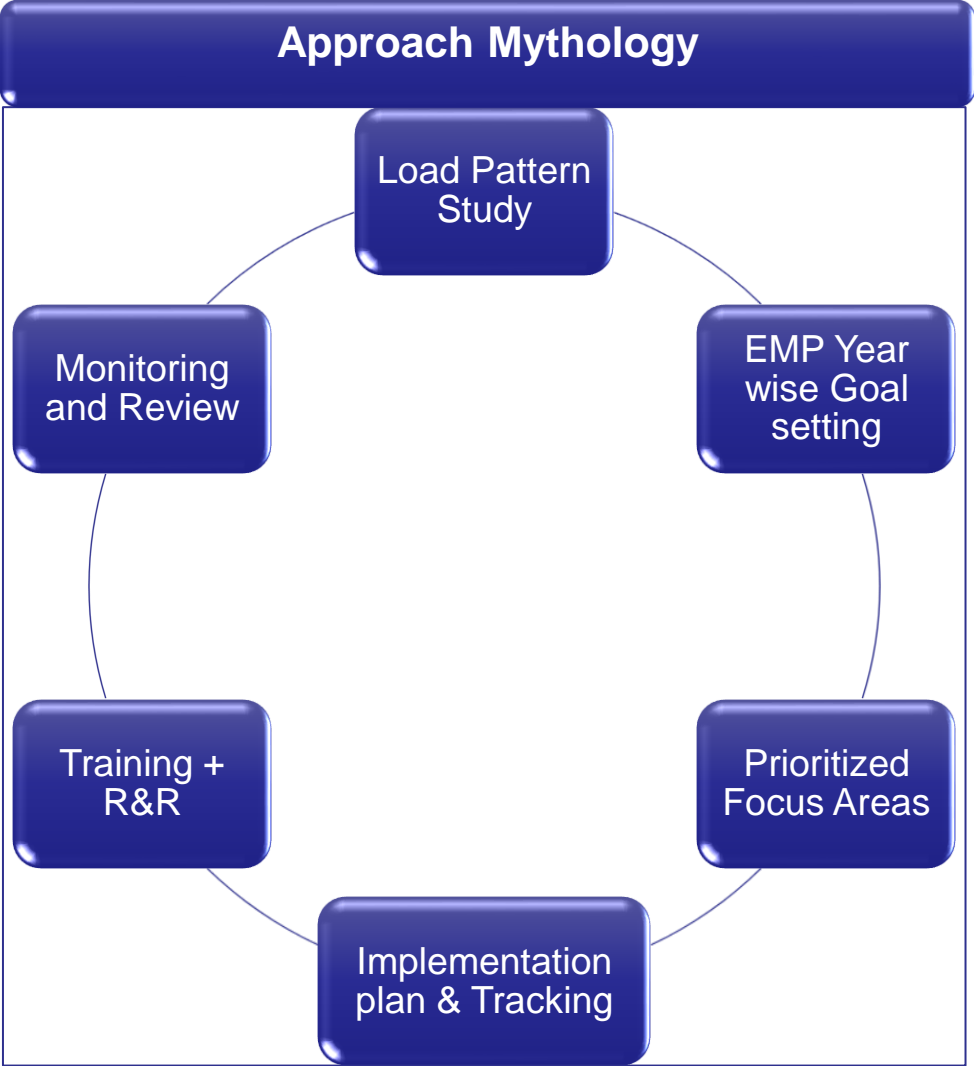


Comparison of SEC with Internal & National Benchmark

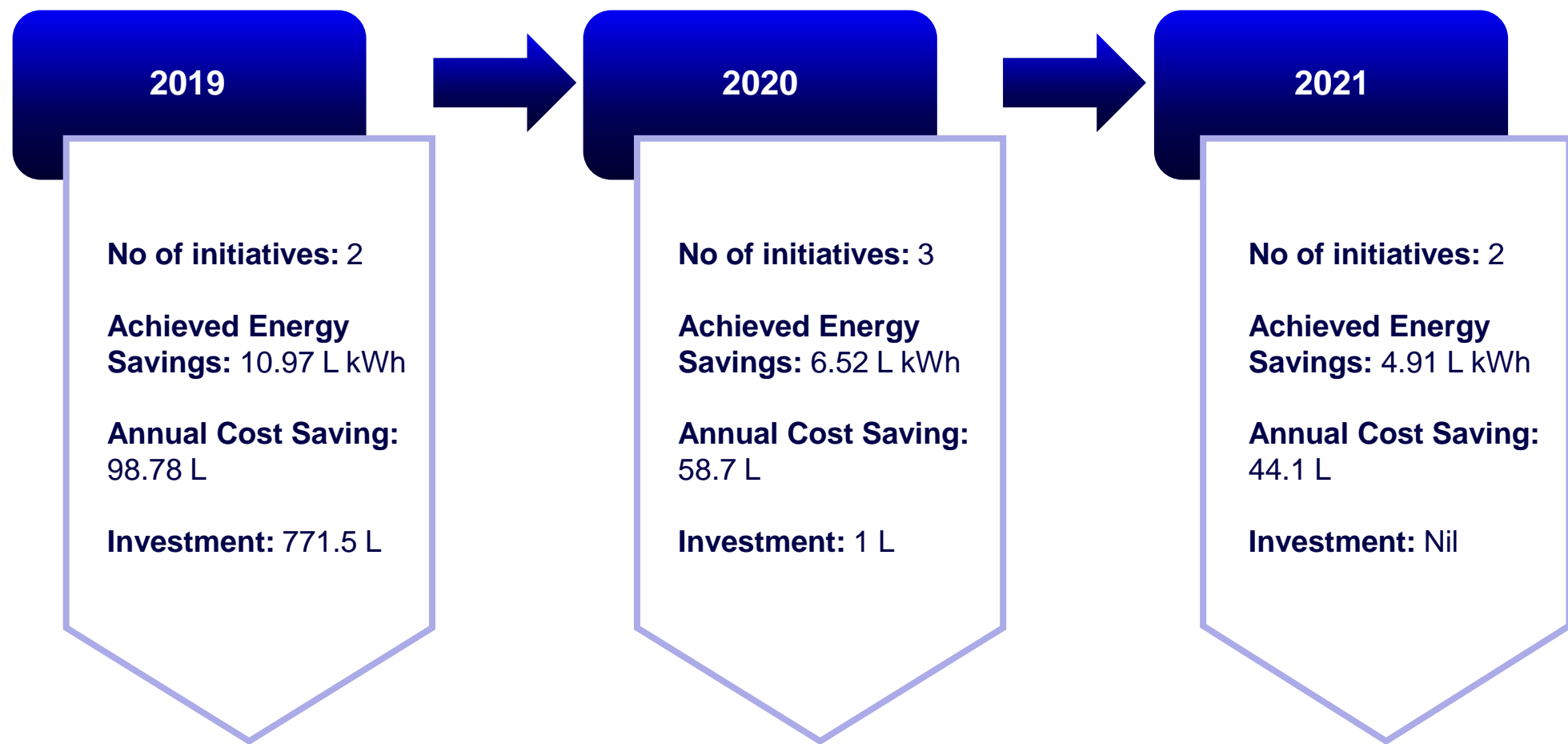
BEE - National Benchmark EPI in kWh/Sq. M/Year			
Star Rating	Warm and Humid	Composite	Hot and Dry
1 Star	200-175	190-165	180-155
2 Star	175-150	165-140	155-130
3 Star	150-125	140-115	130-105
4 Star	125-100	115-90	105-80
5 Star	Below 100	Below 90	Below 80

Internal MT Facilities Benchmark in kWh/Sq. M/Year

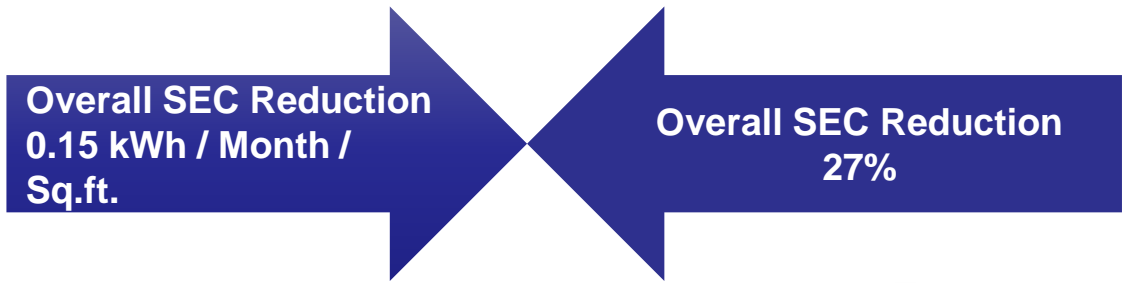
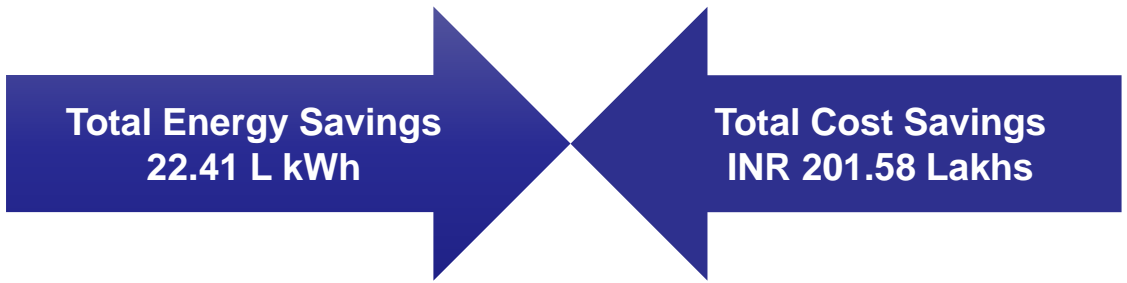
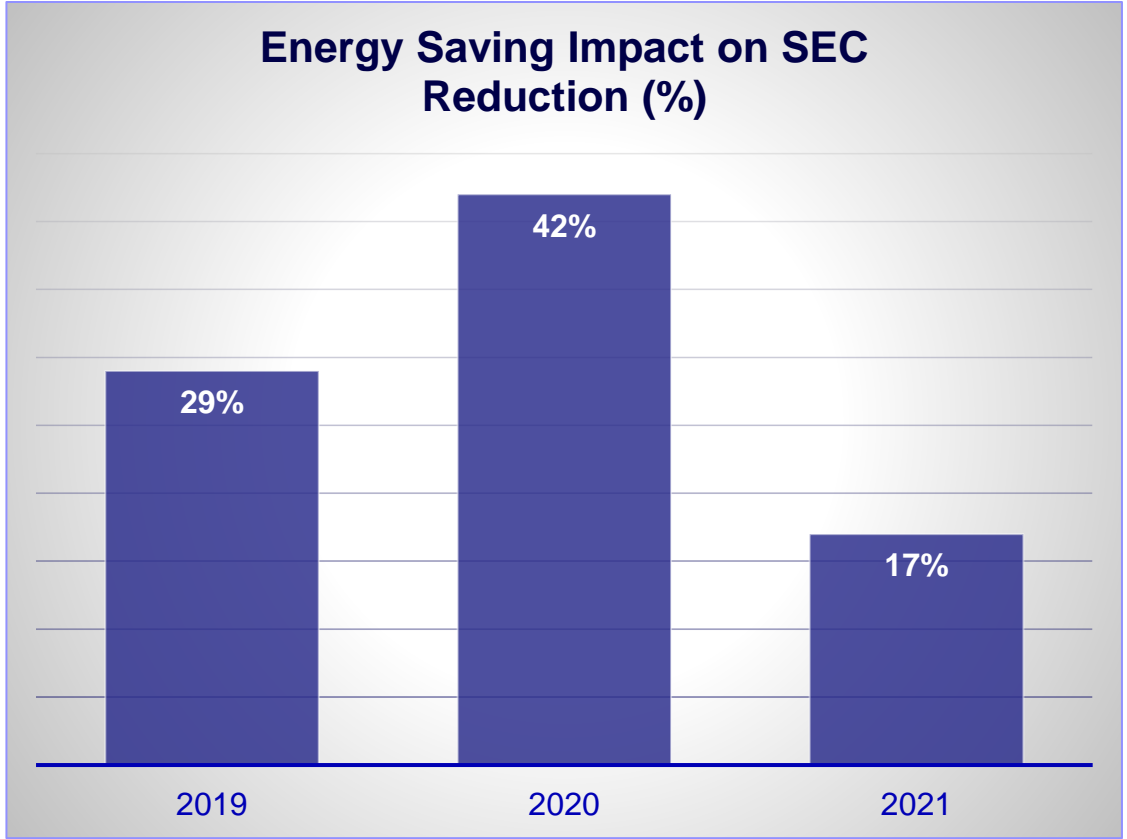
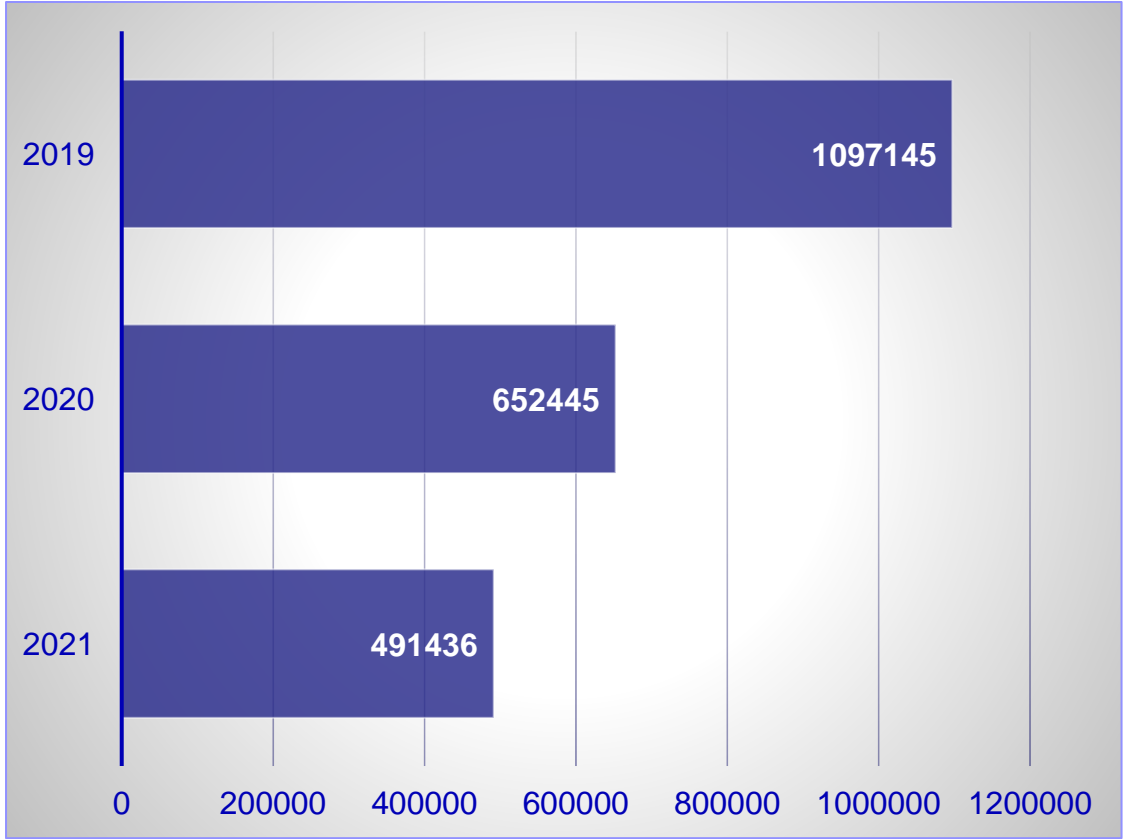
Facility Name	EPI
BLR - MBP - G3	31.42
Hyd-RahejaPark	34.60
MUM - Kensington - SEZ	40.95
BLR-MBP-UnitII-SEZ-F3	42.07



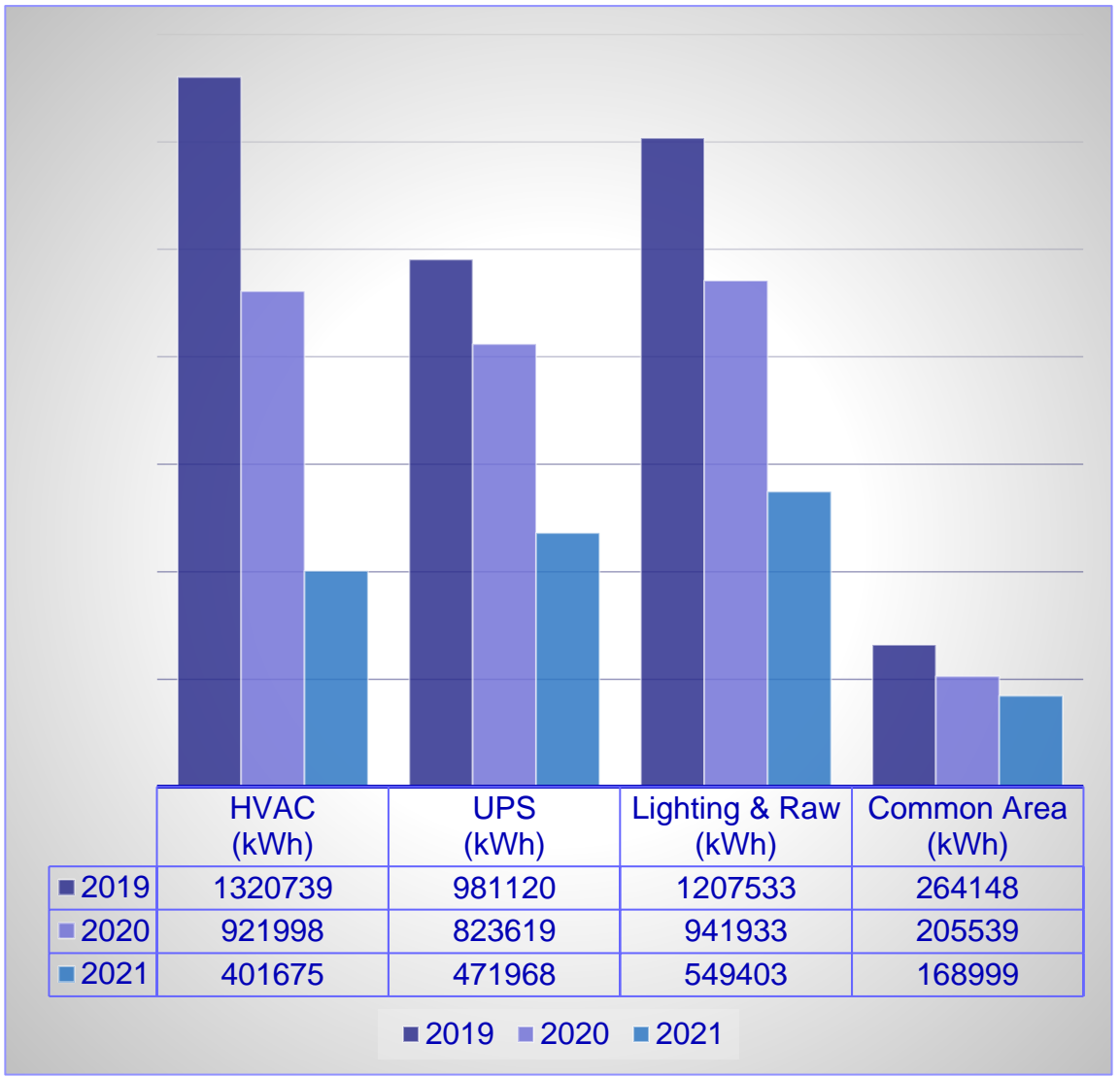
Energy Saving Projects Implemented Summary in 2019 to 2021



Energy Savings Projects Implemented List – 2019 To 2021



Energy Savings Projects Implemented & reduced Utility Energy in 2019 To 2021




HVAC

- 919064 kWh
- 70%



UPS

- 509152 kWh
- 52%



Lighting & Raw Power

- 658130 kWh
- 55%



Common Area

- 95148 kWh
- 36%

List of Energy Savings Projects Planned – 2022

Year	Initiative Category	Initiative Description	Investment for Initiative (INR)	Energy Savings (kWh)	Energy Cost (INR)	Pay Back Period (Months)
2022	UPS System	Consolidation of Modular UPS System 1150kVA to 950kVA (Capacity of 17.4% Reduction)	10,00,000	1,52,424	13,71,816	8
2022	Operational control in lighting	Motion Sensor Installation in Restroom.	60,000	16,000	1,51,632	2



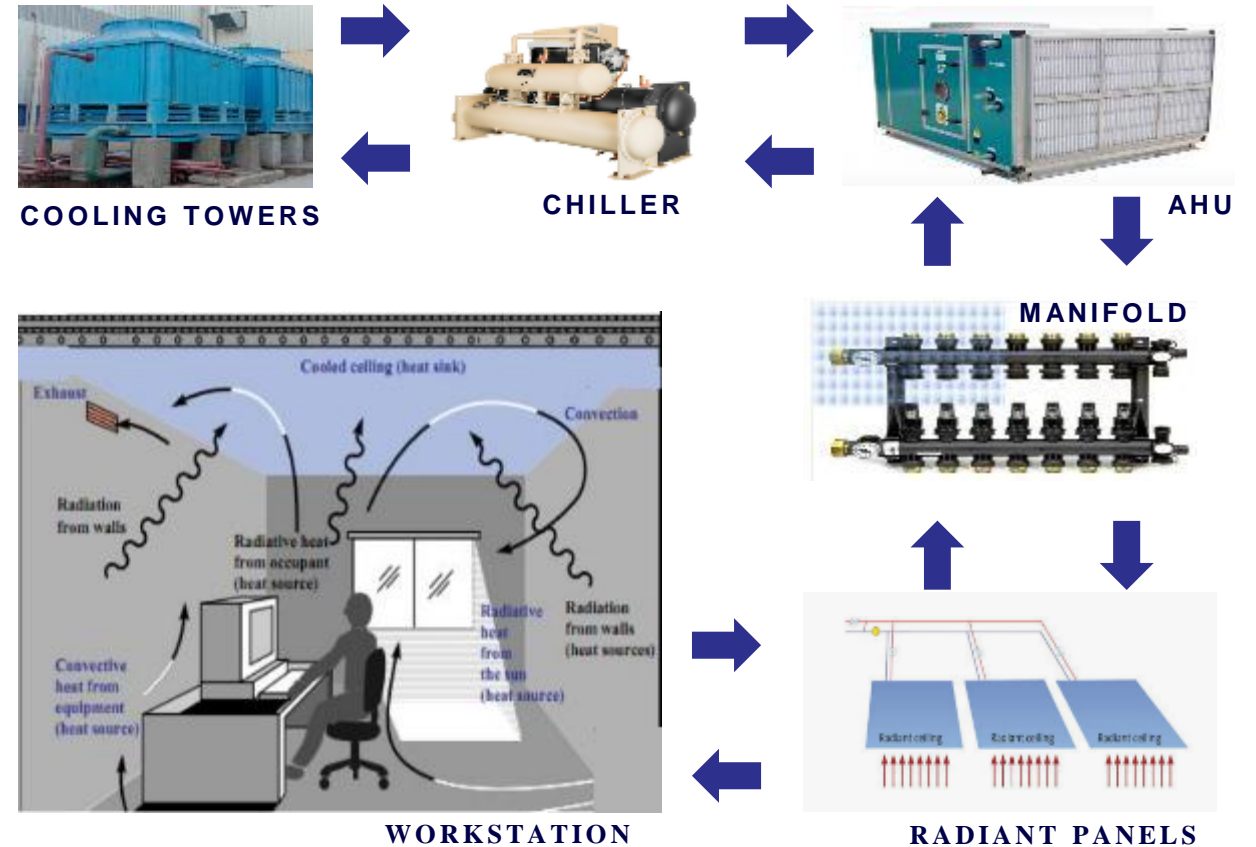
IP 1 - Radiant Cooling System (Ceiling Type)

Overview of Radiant Cooling System

- ✓ Energy Consumption of Conventional Chiller system is 1kW for 1000sq.ft. (542.5kW)
- ✓ Energy Consumption of Radiant Cooling system is 1kW for 1500Sq.ft. (361.7kW)
- ✓ Air Requirement of Radiant cooling system is 50% lower than the Conventional HVAC System.
- ✓ Direct AHU Motor power reduction of 50%
- ✓ Overall Energy consumption reduction 181kW (33% Savings).

Benefits

- ✓ Reduced operating cost
- ✓ Improved Energy Efficiency
- ✓ Increased Comfort.
- ✓ Better Air Quality



Annual Energy Savings kWh
564,186

Annual Cost Saving
INR 5,077,678

Investment Cost
INR 74,000,000

Payback in 14
years

IP 2 - Auto Tube cleaning system installation for condenser



Energy savings of up to 30%



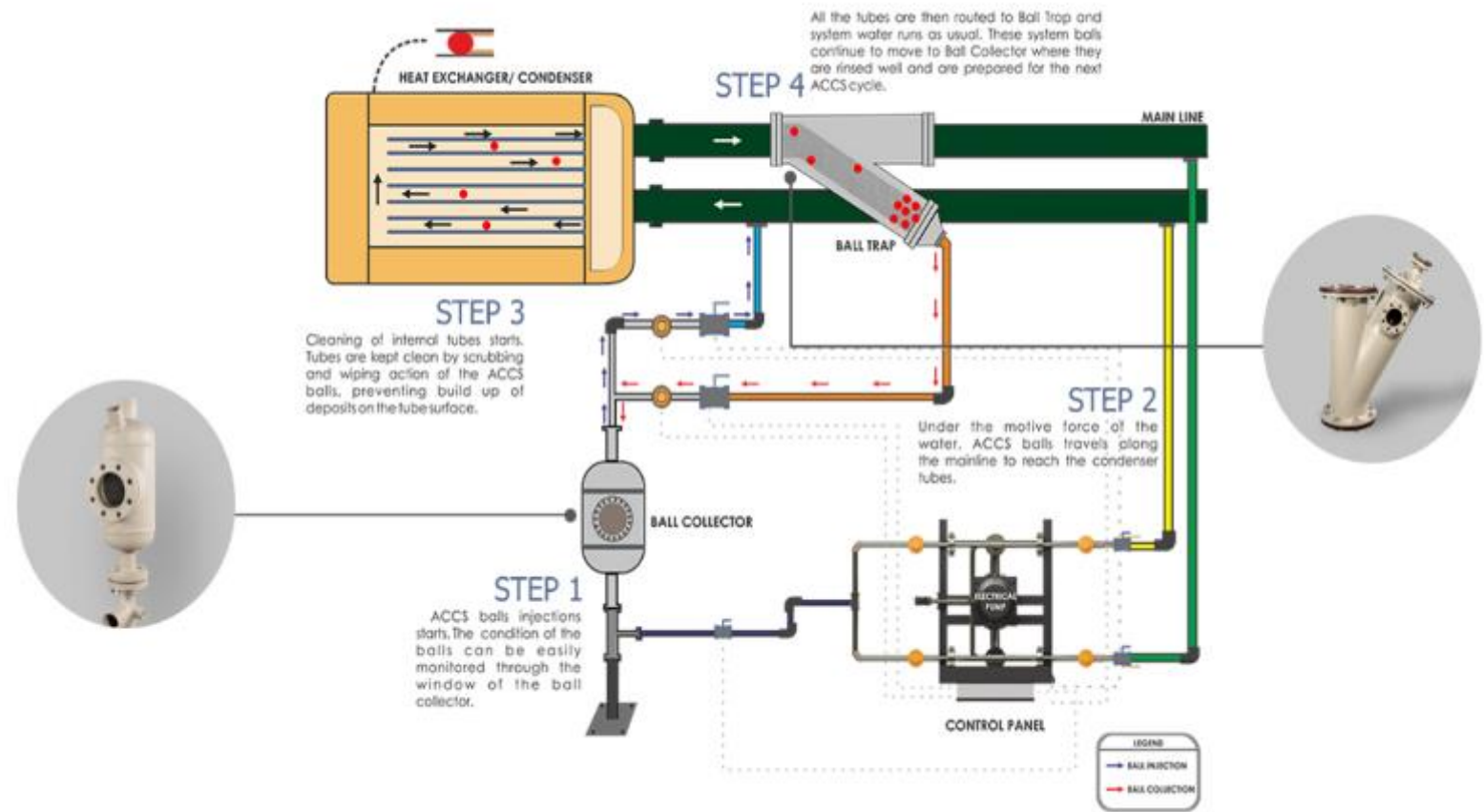
Elimination of costly downtime



Extended Equipment life-cycle



Optimized heat transfer performance



Annual Energy Savings kWh
435,240

Annual Cost Saving
INR 3,917,160

Investment Cost
INR 1,800,000

Payback in 6
Months

IP 3 - Enabling ECO Mode for UPS



- Total number of Modular UPS 2*475kVA, 2*100kVA & 1*50kVA (Each Module is 25 kW*48 Nos)
- During BAU Average loading of each UPS is 40% & Non BAU average Loading of each UPS is 10%
- Total number of Module's live 48 (BAU)
- ECO mode enabled : 35 No's (Non BAU)
- Optimization of stand by power Consumption is 52.5kW (1.5kW per Module)
- Annual Energy Saving is 4.6 L kWh

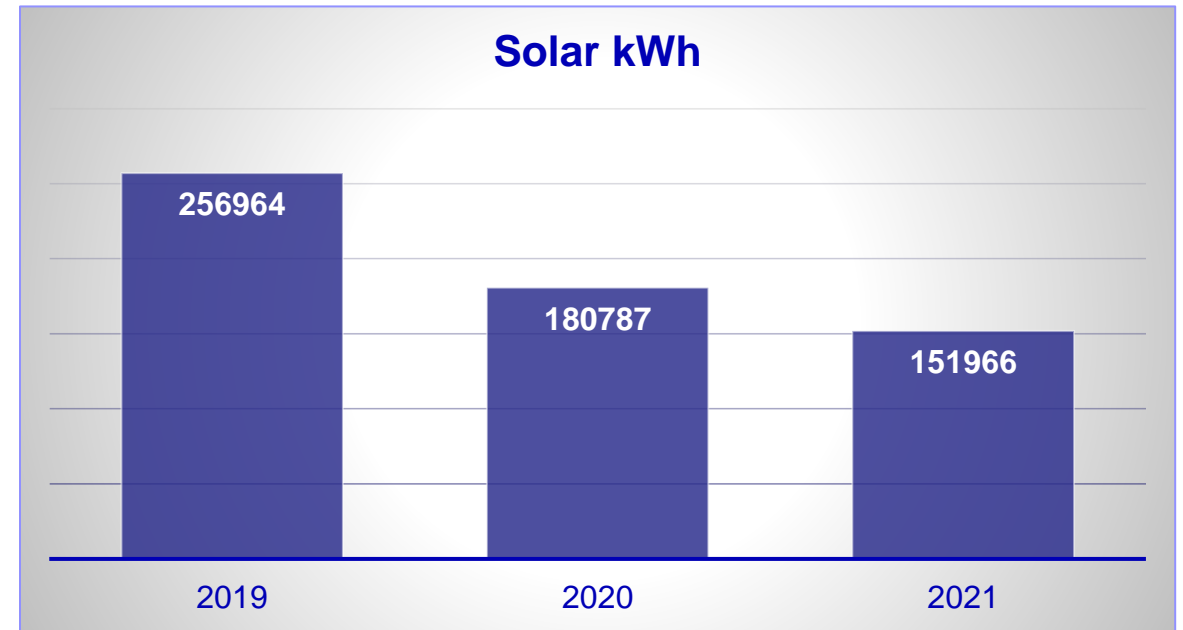
Annual Energy Savings kWh
4,59,900

Annual Cost Saving INR
4,139,100

Investment Cost
NIL

Payback
Immediate

Utilization of Renewable Energy Sources – 2019 to 2021



Technology (Electrical)	Type of Energy	Onsite/Offsite	Installed Capacity (MW)	Solar Energy Utilization (million kWh)	% of Overall renewable energy
Electrical	Solar	Onsite	0.2	0.16	6.38%

Inline rooftop Solar plant for chiller plant



1) Installed 200kW solar plant in open terrace as the 1st move towards the renewable energy. The yield from the solar energy is used directly for operating the Chiller plant. Since solar yield also in daytime and it was directly connected with chiller plant by considering the peak load of the system in the campus.

2) Effective Renewable energy generation and Utilization since it is inline with chiller plant

Waste Utilization and Management

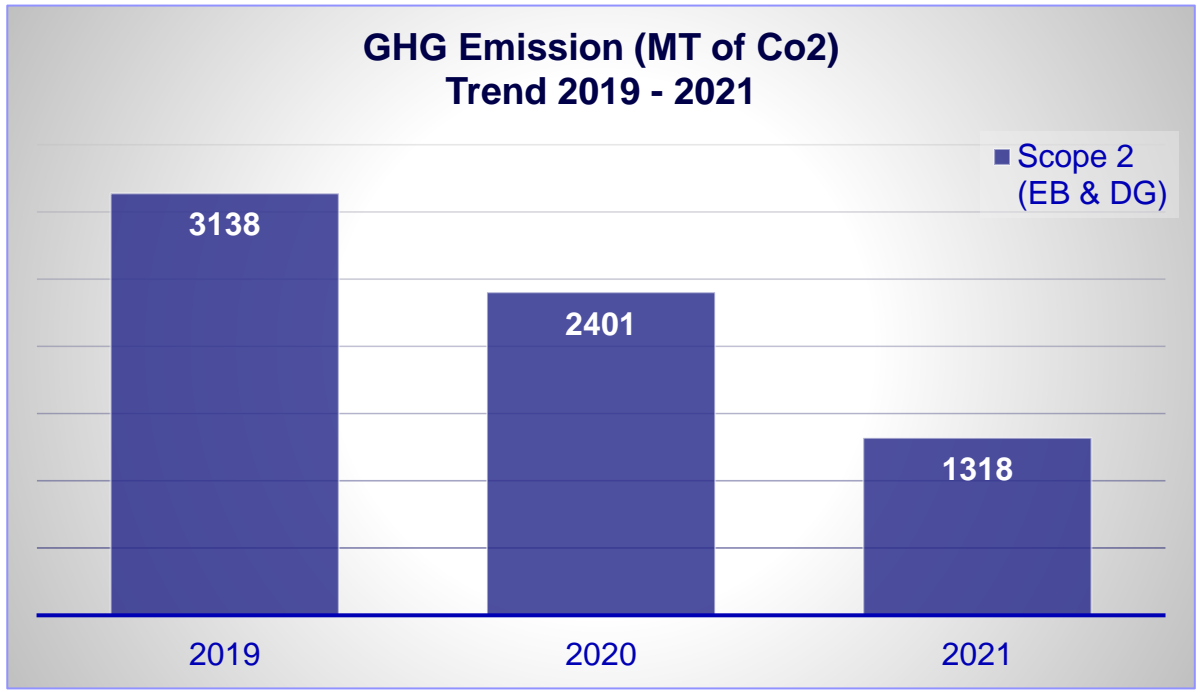
Sl. No	Type Of Waste Generated	Disposal Method	Action Taken for Reduction of Waste
1	Hazardous Waste	Used and waste oil disposed to TSPCB authorized recycler	Battery waste –Extension of battery warranty (3 to 3.5 years)
2	Non-Hazardous Waste	Carton & Paper waste disposed to authorized recycler Ms. ITC Ltd. & Got 10 Rams	Paper waste – 1) Limitation of printer access 2) E-Fit tool implemented, and manual check list optimized 3) Paper cups usages eliminated 100%
3	E Waste	Disposed to TSPCB authorized recycler	E – Waste – CFL to LED (Lifetime enhancement)



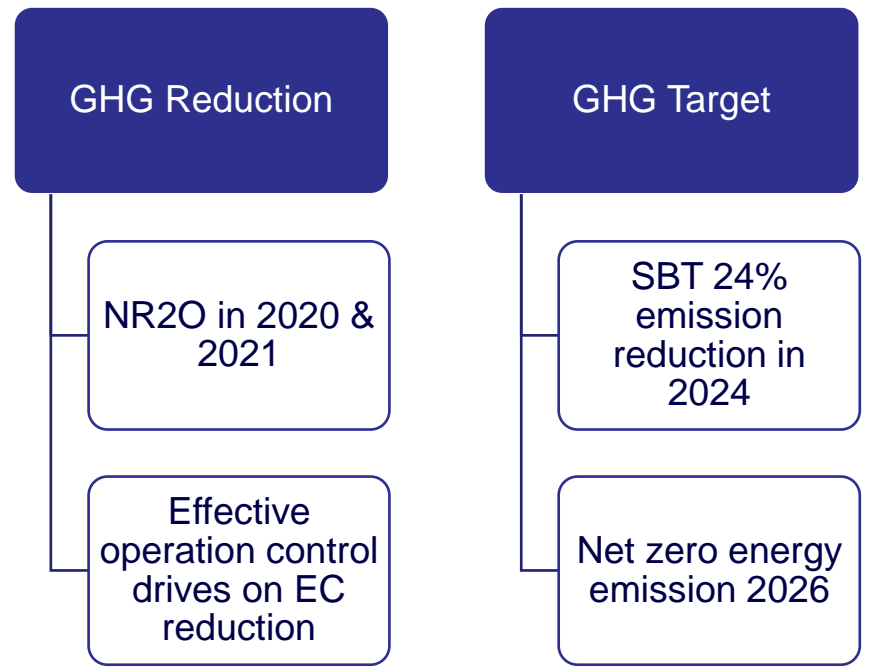
Digitalized technology for all operations is implemented to reduce papers, files, etc.

- ✓ Food coupons / billing replaced by Hunger box applications
- ✓ Aborted using paper cups and plastic bottles in the facility by initiating BYOM Concept
- ✓ All disposable cutleries(plastic) are replaced with wooden cutleries (Bio-degradable)
- ✓ Compliance tools review mechanism by Delite, EY, DSR / Resilio, e-fit portal is implemented

GHG Inventorisation – 2019 To 2021



GHG Reduction Target Plan



Indoor Air Quality (BAU)

Test Parameters	Units	Result	Permissible limit	Remarks
Carbon Dioxide (CO2)	Mg/m3	560	1000	✓ Testing through NABL Laboratory ✓ Random sampling will be done Monthly once for workstations
Total Fungal Count	Cfu/m3	Not Detected	500	
Total Bacterial Count	Cfu/m3	120	500	

Standardization of Best Practices

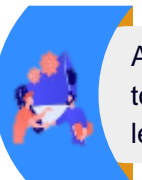
Personnel Computer



Sleep mode enabled for all computers



Replace Conventional CPU with compact CPU



Awareness created to associates to switch off the monitor while leaving the workplace



PC to Laptop (95% Associates)

Air-conditioning

Workplace Temperature policy standardized
24 ° C to 26 ° C

Workplace Temperature policy standardized
24 ° C to 26 ° C

Hub room temperature maintained
24 ° C to 26 ° C

Kitchen/Pantry

Elimination of electrical hot plate

Mandatory use of BEE star rated equipment

Scheduled operation of Ventilation System

Periodical cleaning of heater in Bain-marie

Standard operation temperature for all freezer equipment

Weekly deep cleaning for all types of Freezers

Measuring, Monitoring Device & Tool

Building Segment Consumption

FLOOR	METER NAME	MAH (KWH)	MWH (KWH)	METER NAME	MAH (KWH)	MWH (KWH)
FLOOR-0	RP-RM-1	768.464660	8.127752	RP-RM-2	3.418413	0.009999
LEVEL-1	RP-RM-1	1,72,2860	0.070420	RP-RM-2	358.079492	2.724078
LEVEL-2	RP-RM-1	40.882480	0.334137	RP-RM-2	27.867770	6.238355
LEVEL-3	RP-RM-1	30.893410	0.253578	RP-RM-2	350.550690	3.483363
LEVEL-4	RP-RM-1	14.343480	0.133514	RP-RM-2	17.647580	6.148366
LEVEL-5	RP-RM-1	20.352120	0.164181	RP-RM-2	8.599174	0.088425
LEVEL-6	RP-RM-1	55.777180	0.513281	RP-RM-2	481.183720	4.078178

FMS Tool-Daily Monitoring

Report - Daily Report

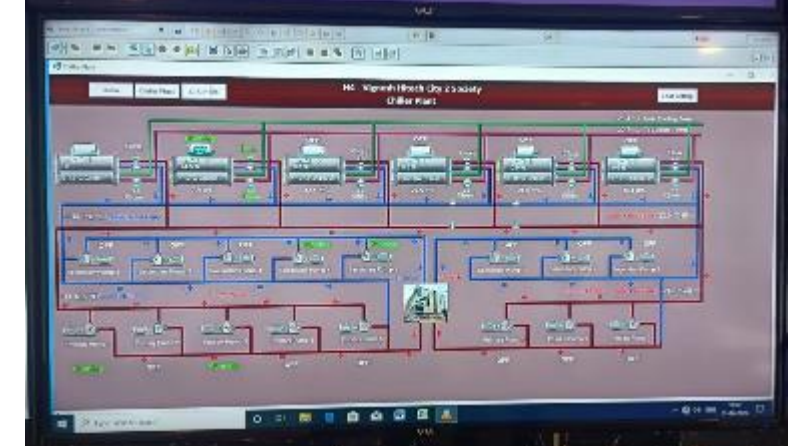
Report Date: 09/01/2022

Status: Pending with Reviewer

Minimum Temperature of the Day (Degree Celsius): 18 | Maximum Temperature (Degree Celsius): 27 | Cooling Degree Days: 4

- Consumption Details
- Consumption Billing
- Consumption Alert
- Energy Billing - Transformer
- Energy Billing - PD
- Energy Billing - Other

Chiller Parameters Monitoring



FMS Tool - Monthly Consumption Monitoring

Monthly Report

Filter by Energy Management

Floor: Energy Management | City/Facility: H4 - Vignesh Hitech City 2 Society | Month-Year: 2022-01 | Consumption Target (kWh/M): 17000

- Energy Billing
- Energy Billing - PD
- Consumption Details
- Energy Billing
- Consumption Alert
- Energy Billing - Transformer
- Energy Billing - PD
- Energy Billing - Other

FMS Tool - Monthly Target Monitoring

Power Consumption (kWh) - July 2022 (kWh)

MPWH	TPWH	VPWH	WPWH	EPWH	SPWH	RPWH
17000	4000	4000	17000	4000	4000	17000

Note: Consumption details for the month of July. The target value is 17000kWh.

Total consumption target for July 2022 is 17000kWh.

Sphera Tool

Direct Energy Dashboard

Energy Consumption Metrics:

- Temperature: 22°C
- CO2 Emissions: 1000 kg
- Energy Usage: 1000 kWh
- Water Usage: 1000 liters

Category	Value	Unit	Target
Energy	1000	kWh	1000
Water	1000	L	1000
CO2	1000	kg	1000

Initiative by Plant Team

Timer Controller for Peripheral Lighting



Enabling Energy Saver Mode in Modular UPS



Desktop Power off Activities



Limit Switch for AHU Room & Fire Shaft Door



CII EHS Excellence Award 2021



Certifications – ISO 45001:2018 & 14001:2015



MANAGEMENT SYSTEM CERTIFICATE


Certificate no.: 10003404785.MSC-IND-IND Initial certification date: 27 February 2020 (Based on CE15AD-18001) Valid: 06 April 2020 – 05 April 2023

This is to certify that the management system of
Cognizant Technology Solutions India Private Limited
Techno Complex, 5/535 Old Mahabalipuram Road Okkiyam, Thorapakkam, Chennai - 600 097, Tamil Nadu, India
and the sites as mentioned in the appendix accompanying this certificate
has been found to conform to the Occupational Health and Safety Management System standard:
ISO 45001:2018

This certificate is valid for the following scope:
Providing business solutions leveraging information technology and IT enabled services

Place and date:
Barendrecht, 16 March 2022

For the issuing office:
DNV - Business Assurance
Zuidweg 1, 2994 LB Barendrecht, Netherlands



Eric Kuik
Management Representative



Lack of fulfillment of conditions as set out in the Certification Agreement may render this Certificate invalid.
ACCREDITED UNIT: DNV Business Assurance B.V., Zuidweg 1, 2994 LB, Barendrecht, Netherlands - TEL: +31(0)102022888 - www.dnv.com/certification



MANAGEMENT SYSTEM CERTIFICATE

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has been found to conform to the Environmental Management System standard:
ISO 14001:2015

This certificate is valid for the following scope:
Providing business solutions leveraging information technology and IT enabled services

Place and date:
Chennai, 21 December 2021

For the issuing office:
DNV - Business Assurance
ROKSA, No. 15, GST Road, Alandur, Chennai - 600 016, India

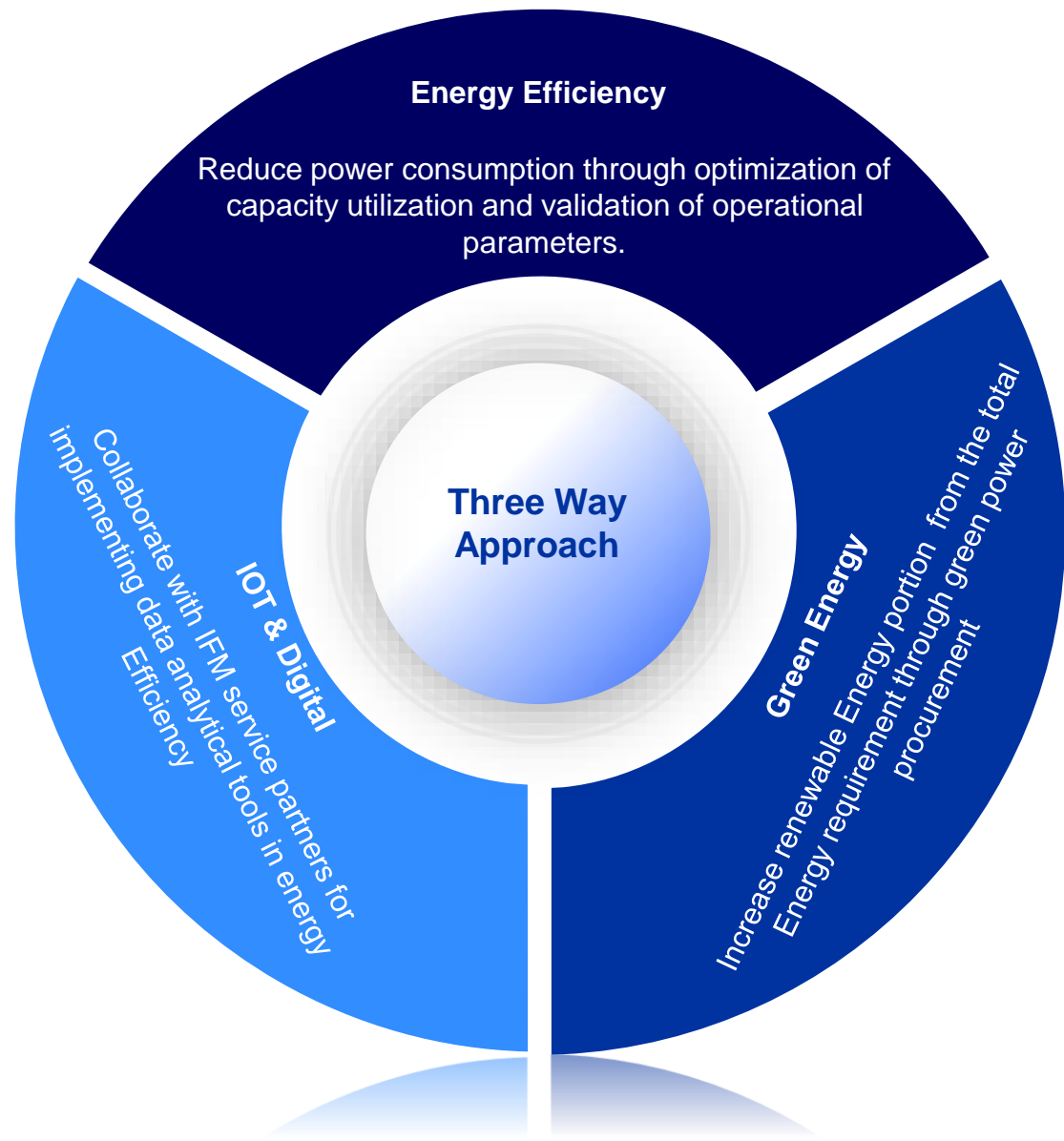


Sivadasan Madhyath
Management Representative



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Way Forward for Next Three Years



Thank you