23rd National Award for Excellence in Energy Management 2022

MBP F2 & F3 - Bengaluru

August 2022

Contents

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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.

318,400
Employees worldwide

$18.5B
Total revenue

194
Fortune 500
May 2022

350
Forbes World's Best Employers for Diversity
April 2021

113
Fortune's World's Most Admired Companies
Feb 2022

567
Forbes Global 2000
May 2022

327
Forbes 2021 World's Best Employer list
Oct 2021

Facility Overview

Facility Details

- Two blocks - MBP F2 & MBP F3-Leased facilities
- MBP F2 inaugurated on 2009 MBP F3 inaugurated in 2013
- Built up area -1.5 million Sq .ft
- Seating Capacity: 16600
- Headcount: BAU-14914

Contracted Demand

- Contracted Demand – 5000 KVA
- Incomer Supply – 11KV / 415 V

Transformer Capacity

- Transformer Capacity
  4X2000KVA & 4X 2000 KVA
- Diesel Generator Capacity –
  6X1500 KVA & 6X 1500 KVA

Chiller Capacity

- Chiller Capacity
  2X 350 TR Water cooled
  3X 390 TR Air cooled
  2 X 500 TR Water cooled
  2X 250 TR Air cooled

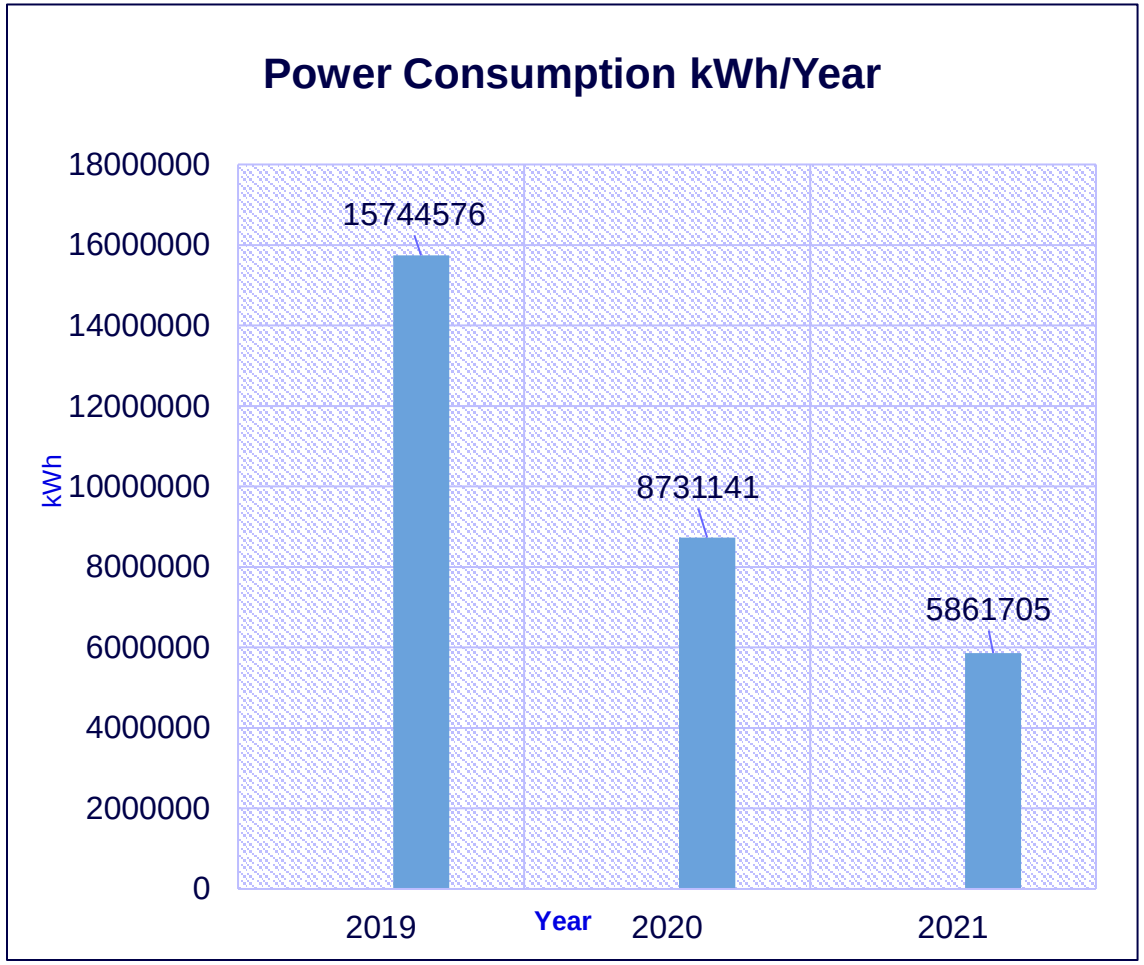
UPS Capacity

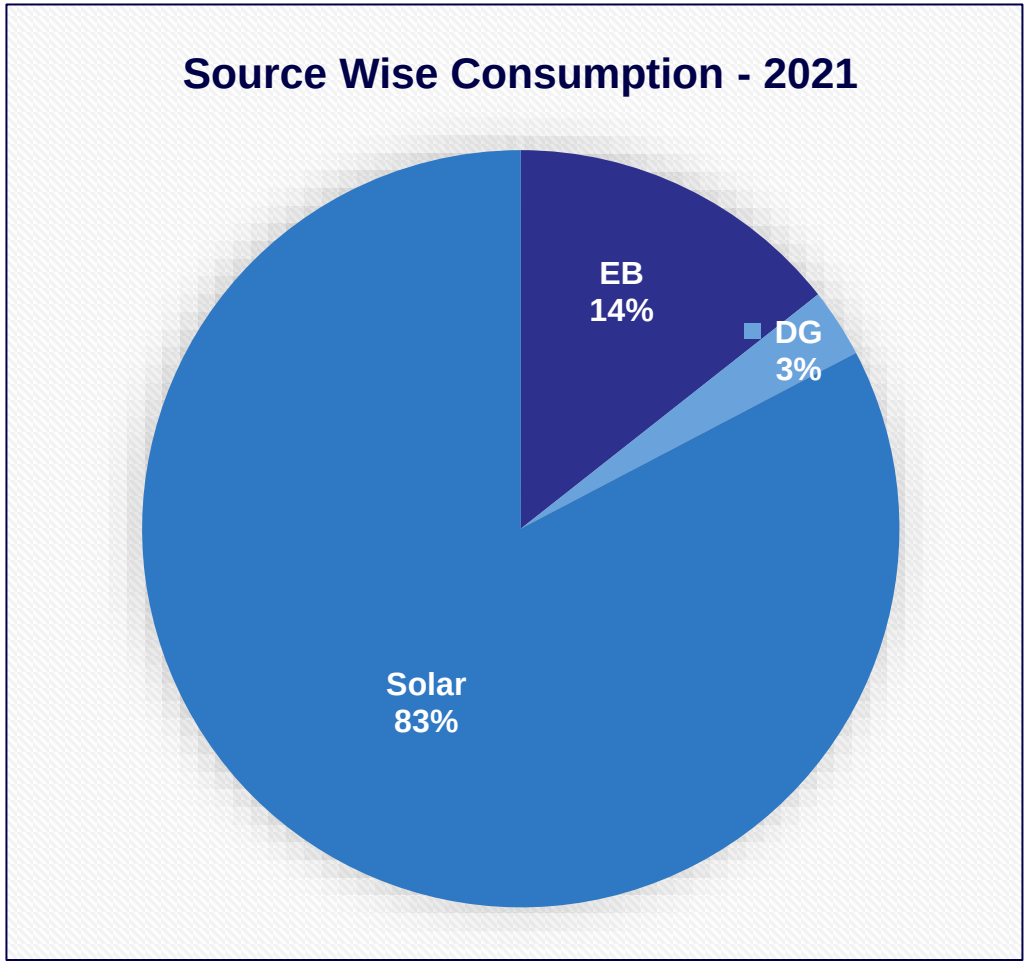
- UPS Capacity
- 2X 300 KVA & 2X 150 KVA
- 2X 500 KVA

MBP F2

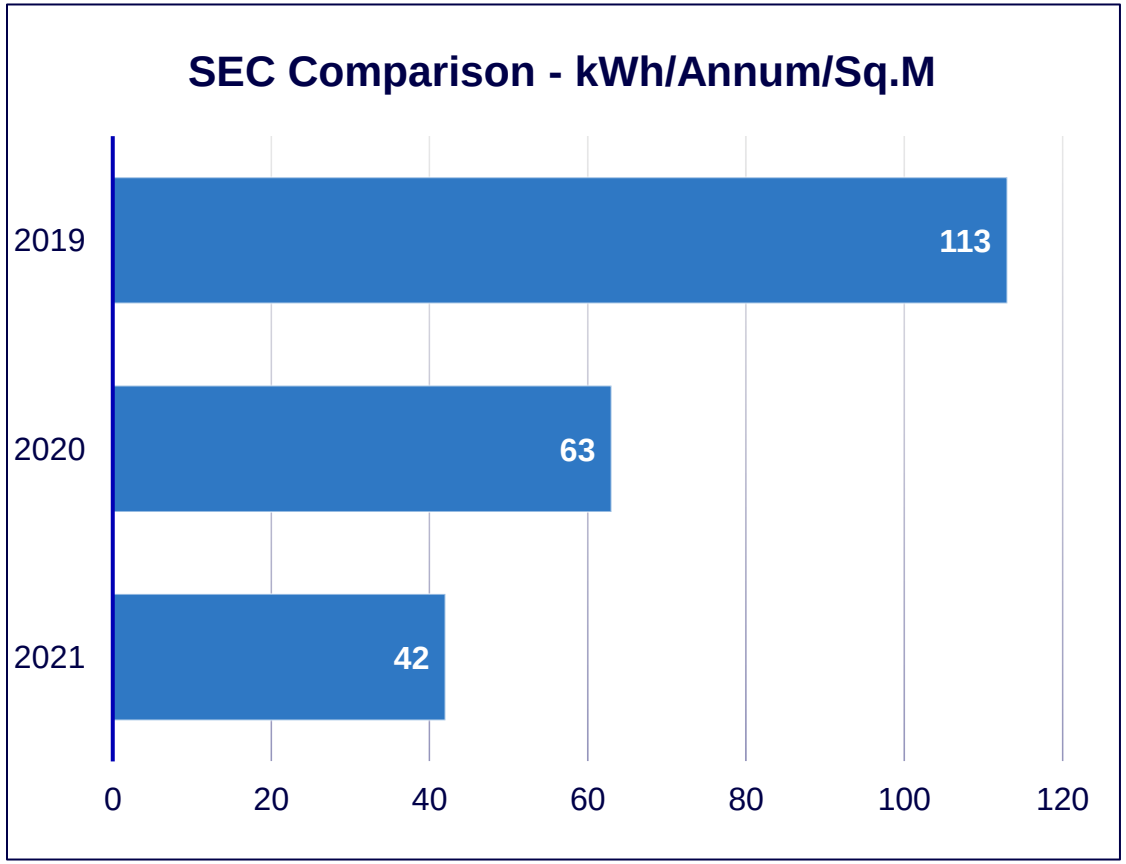
MBP F3

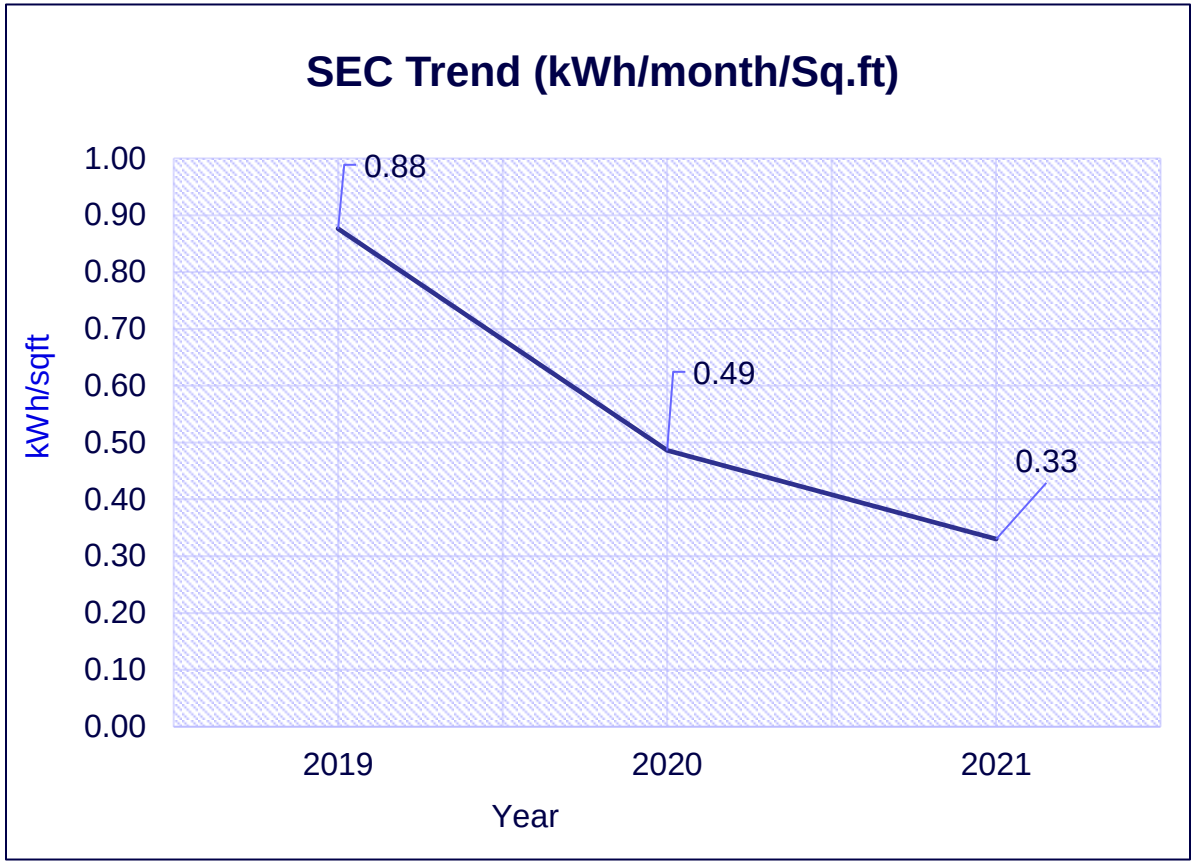
Energy Consumption Overview - 2019 to 2021





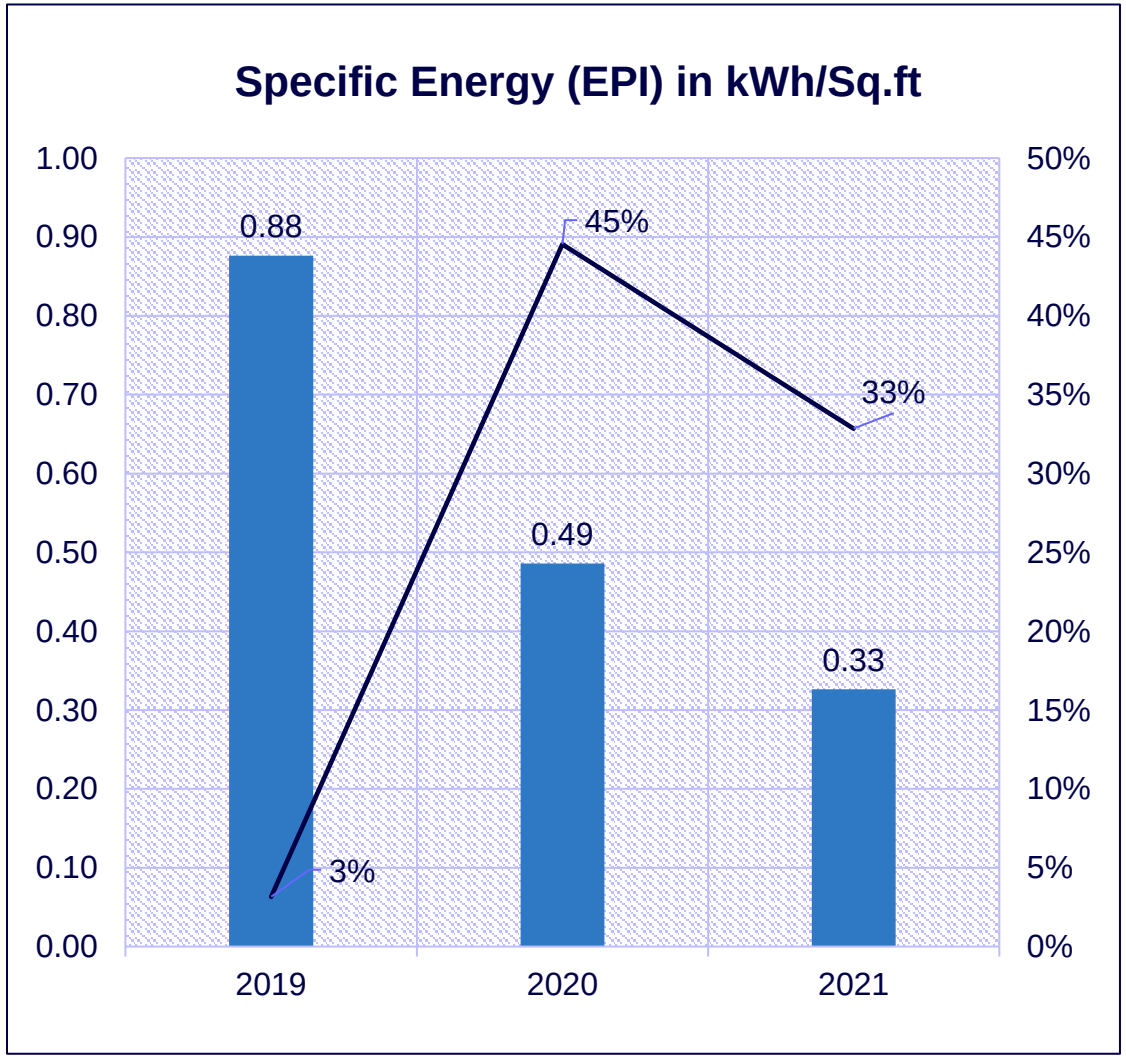
Specific Energy Consumption in Last 3 Years - 2019 to 2021





Inference : Specific energy consumption reduction 3% in 2019,45% in 2020 & 32% in 2021
Reason : In 2020 & 2021 facility was in non BAU operations

Major Initiatives - Causes for Reduction in Specific Energy



2019	• UPS room AHU supply air damper operation control – 0.31 L kWh / Annum • Provision of pull chord switch & lighting sensor – 2.6 L kWh / Annum • Configured auto open/close of 2-way AHU Valve –0.53 L kWh / Annum
2020	• Desktop power switching OFF activities – 0.59 L kWh / Annum • Workstation light retrofit activities (T5 to LED at F3) – 4.9 L kWh / Annum • Dedicated AC unit for dormitory – 0.15 L kWh / Annum
2021	• UPS consolidation activities: 3.78 L kWh/Annum • Lighting sensor for restricted critical room and cafe - Phase-1- 7154 kWh/Annum • Dedicated AC unit for dormitory-Phase-1-15188 kWh/Annum

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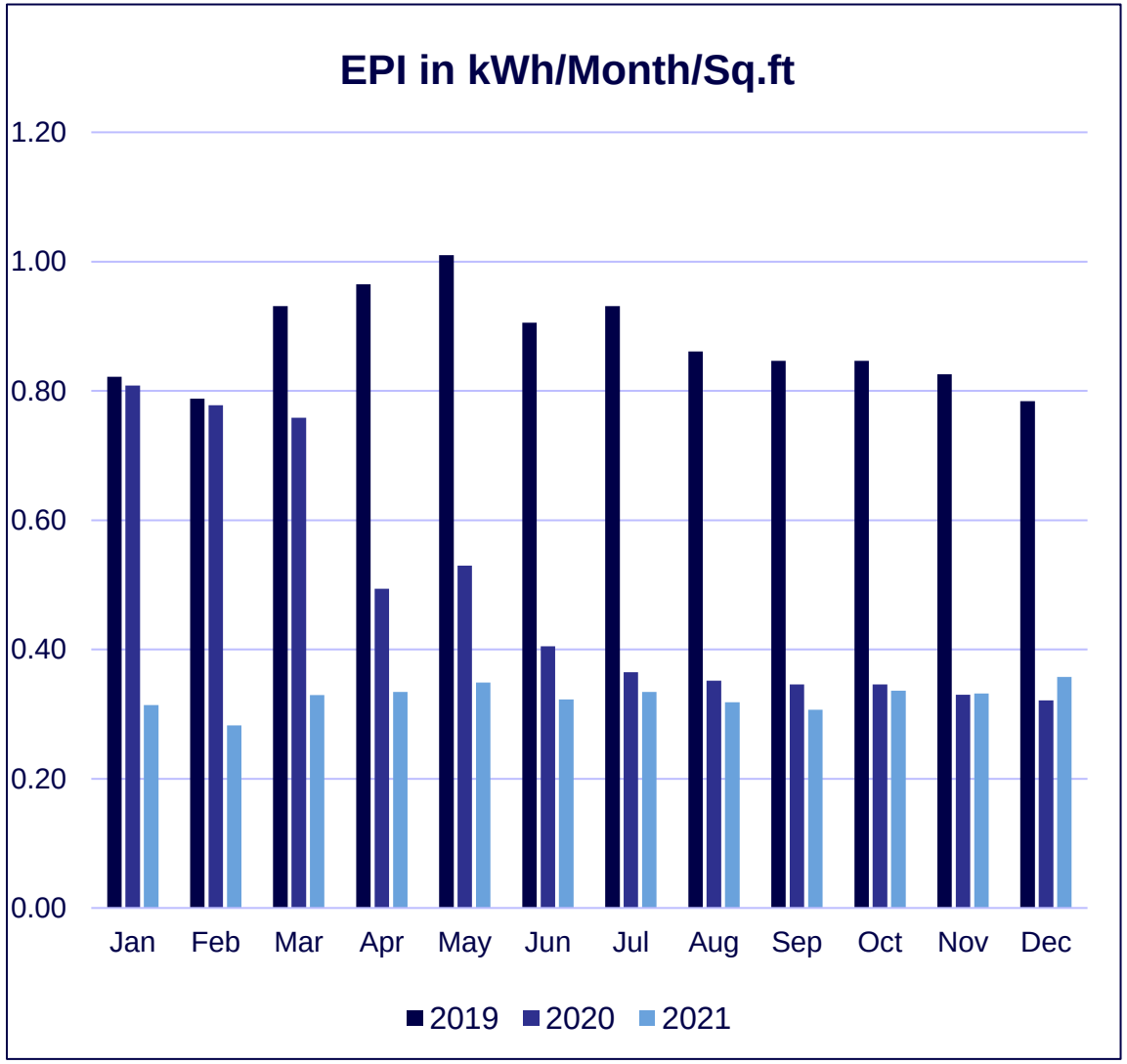
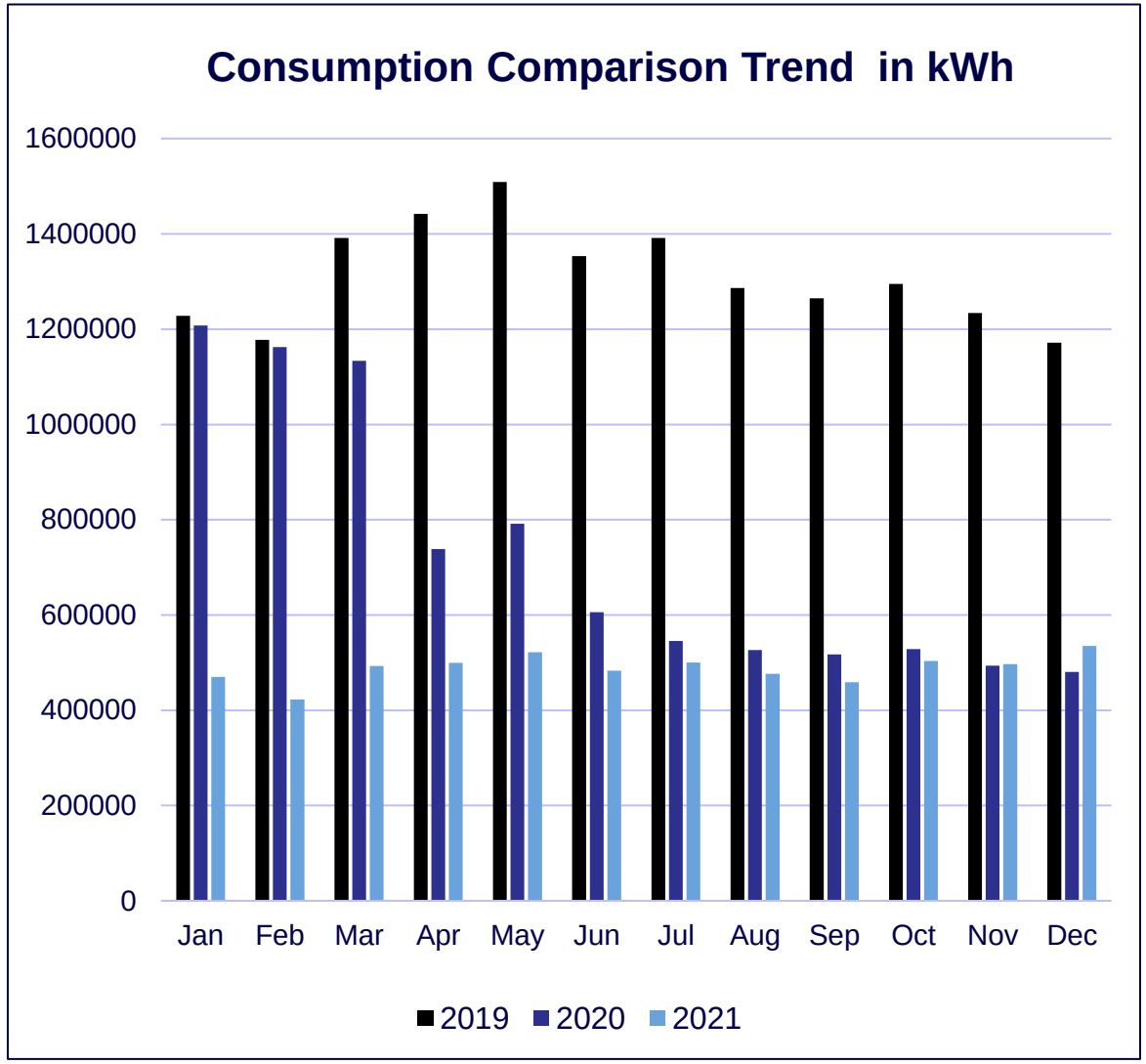
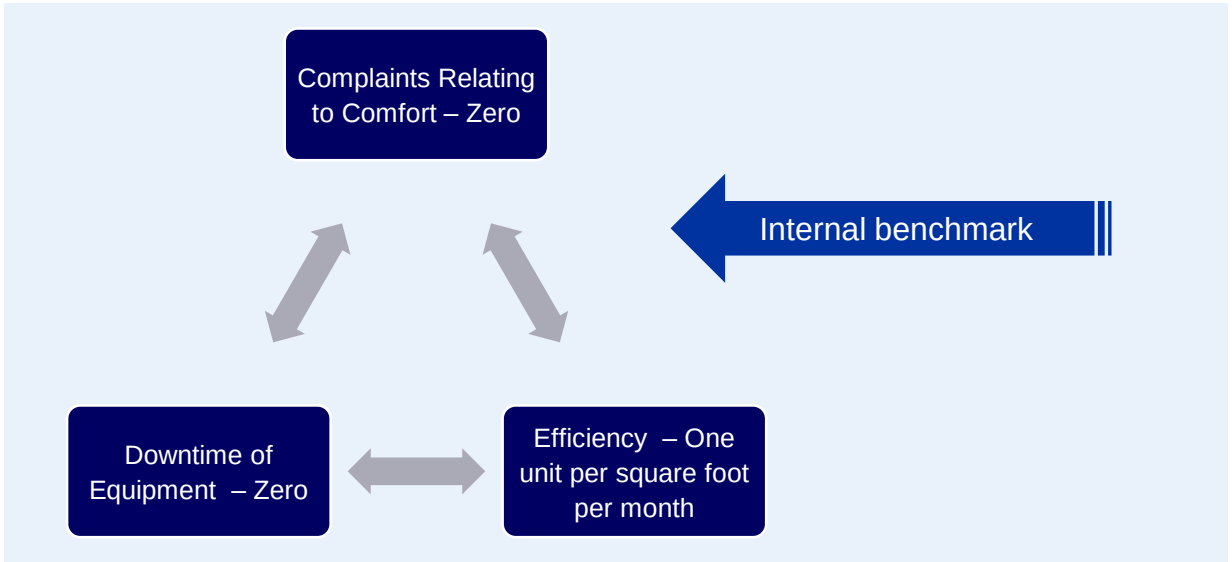
Month-wise Specific Energy (EPI) in kWh/Sq.ft and Consumption Trend



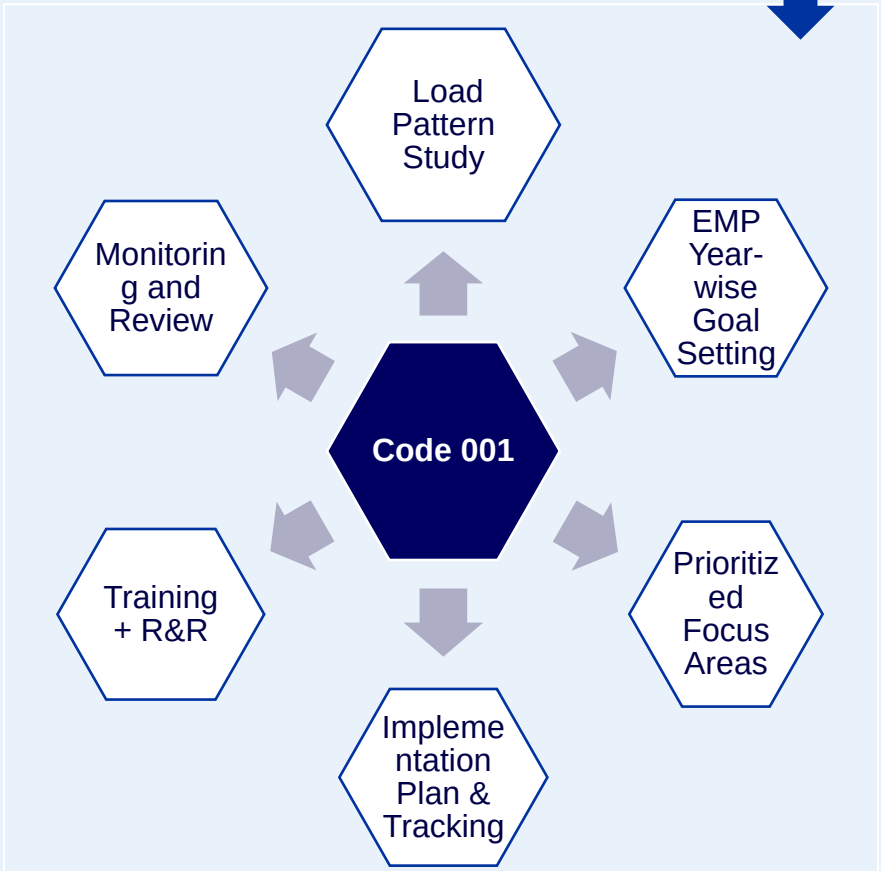


Comparison of SEC With Internal & National Benchmarks

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**



Approach Methodology



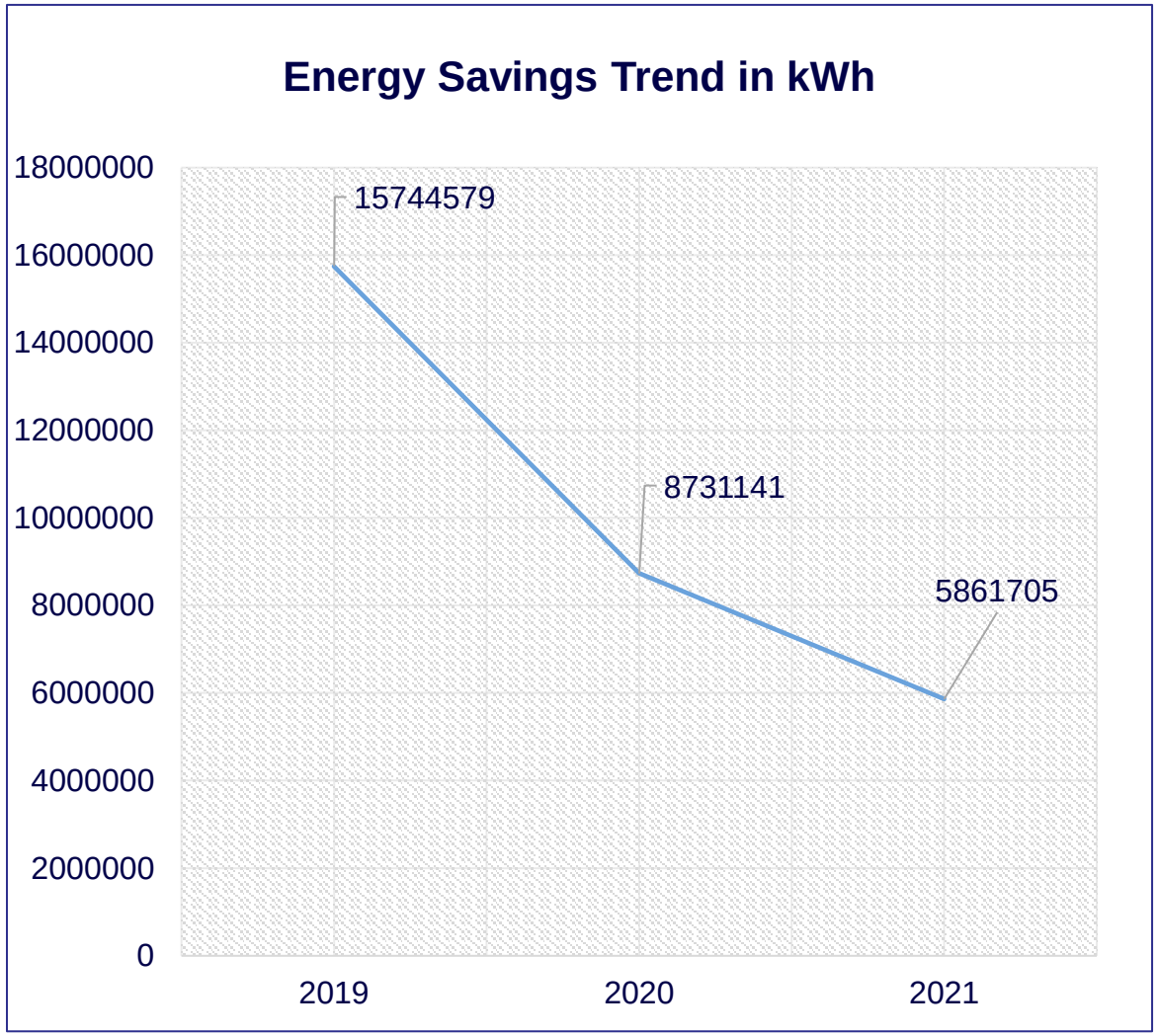
Major Encon Project Planned in FY 2022-23

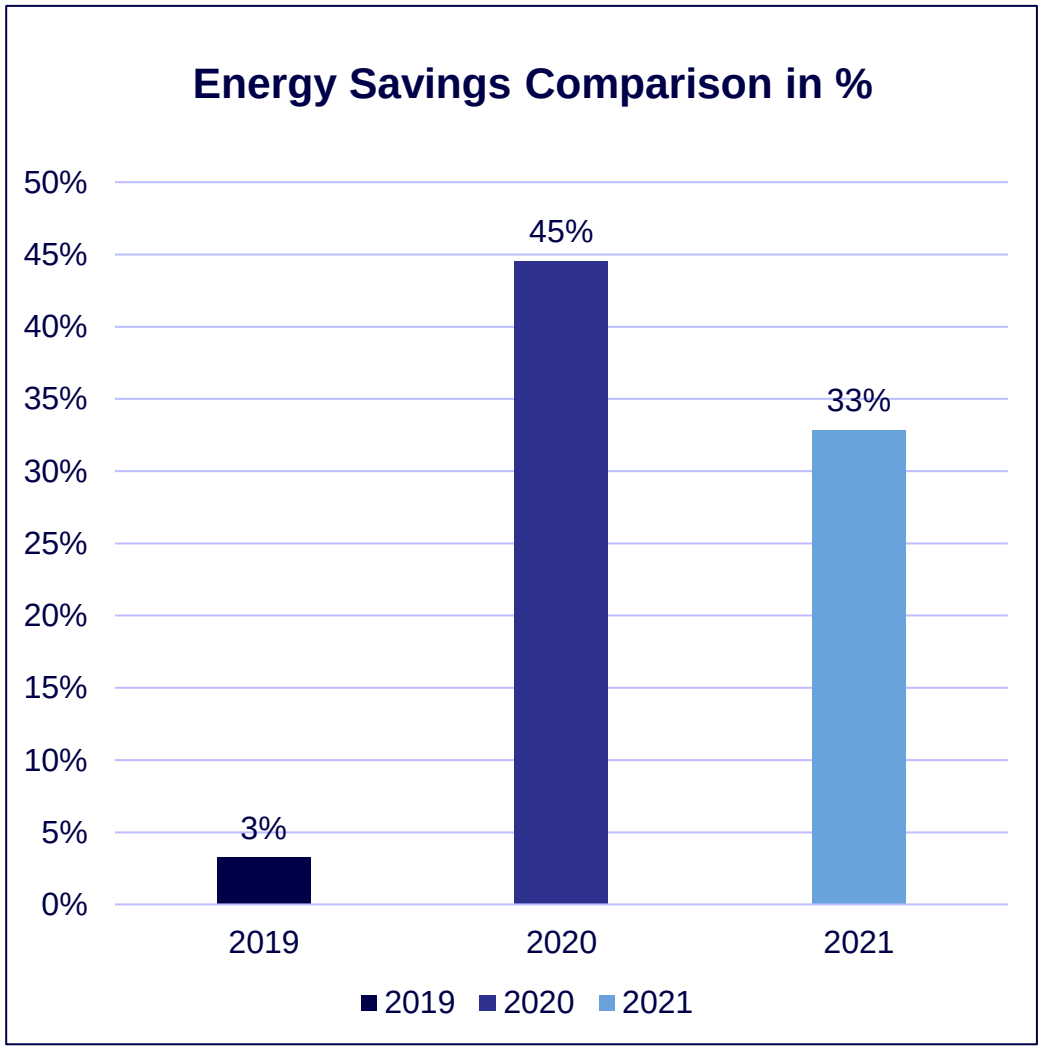
VRV AC Unit integration to the BMS (Critical room AC)	**Savings 0.27 L kWh/Annum**
High wall mount Split AC unit retrofit activities-Phase-2	**Savings 1.04 L kWh/Annum**
Lighting sensor for restricted ODC and cafe -Phase-2 projects	**Savings 0.01 L kWh/Annum**
Dedicated AC unit for dormitories & Mom's lounge-Phase -2 projects	**Savings 0.48 L kWh/Annum**
Dedicated AC for UPS room to avoid running chiller during nonbusiness hours	**Savings 1.02 L kWh/Annum**

Energy Saving Projects Implemented in Last 3 Years

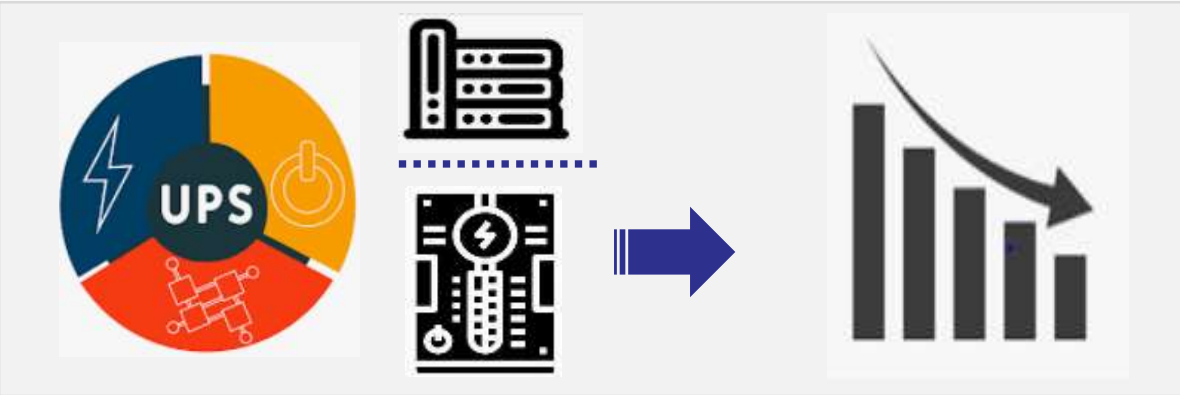
Year 2019	Year 2020	Year 2021
• Energy saving projects **7** • Electrical savings in kWh **5.25 L** • Cost savings **₹47.3 L** • Investments **₹5.5 L** • Return on investment: **2 month**	• Energy saving projects **7** • Electrical savings in kWh **24.4 L** • Cost savings **₹225 L** • Investments **₹91.7 L** • Return on investment: **2 month**	• Energy saving projects **6** • Electrical savings in kWh **5 L** • Cost savings **₹57.66 L** • Investments **₹30 L** • Return on investment: **6 month**

Energy Savings Trend (2019 to 2021)





Innovative Project : UPS Consolidation Activities 1/3



Idea description	• Consolidation, capacity optimizations and Retrofit of UPS • UPS Consolidation - Estimate the required UPS capacity of existing UPS systems and identify opportunities to optimize the capacity in order to reduce energy consumption and cost..
Option Considered	• UPS capacity optimization based on the load study and future addition loads, and subsequent commissioning/decommissioning. • Retrofit of UPS (Conventional to Modular) by using the decommissioned UPS

Benefit

- UPS capacity optimized:2980 KVA to 2280 KVA = 700 KVA
- Energy saved : 5.10 L kWh/annum
- Energy cost saved : ₹56.10 L/annum
- Cost saved : ₹200 L (energy + operational + capex)

- Batteries optimized: 1192 to 840 = 352 No's
- Battery waste generation reduced every 3 years

Environmental Benefit

Carbon emission saved

Energy **402 ton**

Batteries **0.33 ton**

Equivalent trees planted **5967**

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Innovative Project : Automation of AHU Supply Air Damper for Avoid 2/3 Energy Losses

Background

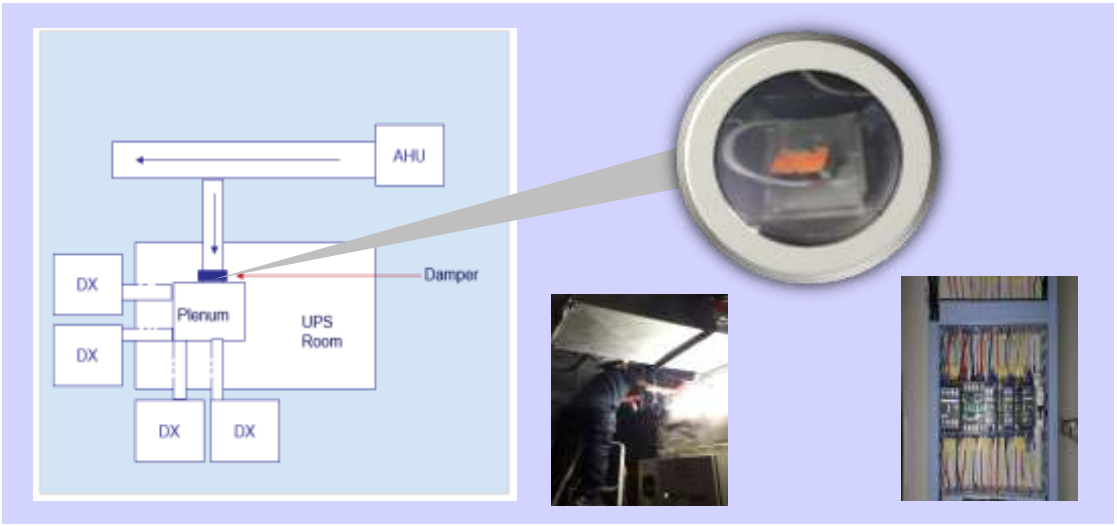
Observed that three duct able AC units were not sufficient to cool UPS room during nonbusiness hours, weekends, and holidays

Identification

There are N+N+1 AC supports, a common plenum for both an AHU and duct able AC unit, and the damper on the supply air duct of the AHU does not close after the DX AC unit is turned on, Due to this loss in the DX unit supply air and energy loss

Option Considered

Post identification and brainstorming session, option explored as auto operation of the AHU side damper while AHU operation by using the AHU starter panel & DDC panel.



Benefit

- Energy savings/annum : **3,1824 kWh**
- Investment : **Zero**
- Cost savings/annum : **31,8240 INR**

Innovative Project : Chiller Secondary Pump Synchronization 3/3

Background

The chiller pumps are not operating auto mode even though VFD are installed, leading to energy losses.

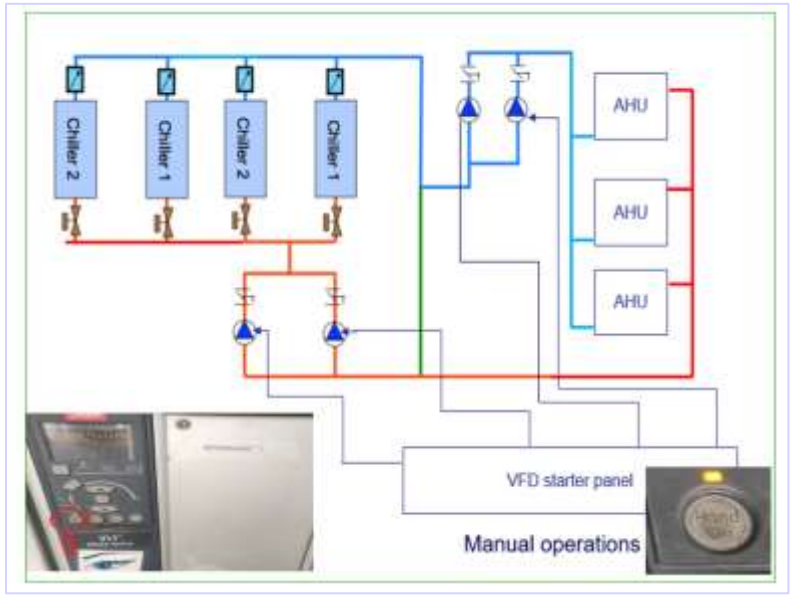
Identification

A VFD panel does not have pressure inputs, and pumps are manually turned on and off by the operator

Solution

Installing the DP sensor and connecting it to the VFD panel.

Before



Annual Saving

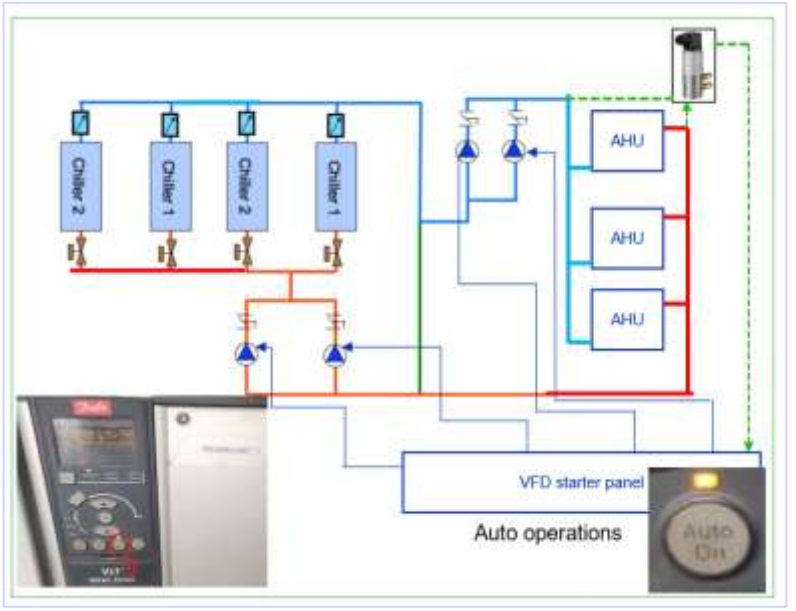
Energy Savings: 3.84 L kWh

Cost Savings : 38.4 L

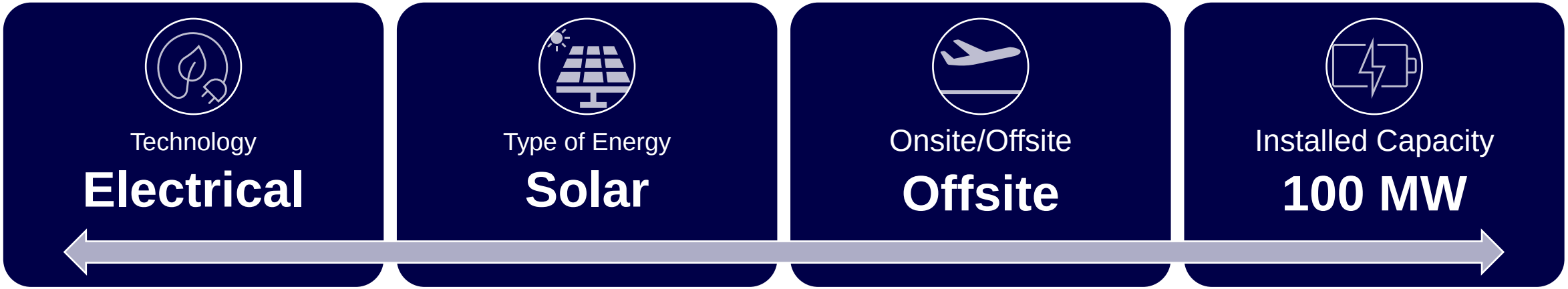
Investment : 3 L

ROI : 15 month

After



Utilization of Renewable Energy Sources



Utilization of Renewable Energy Sources (kWh)				
	EB	DG	Solar	Solar Energy
2019	3203214	1833932	10707433	Utilization vs EB - 77%
2020	870807	347258	4576406	Utilization vs EB - 86%
2021	842772	172104	4846829	Utilization vs EB - 85%

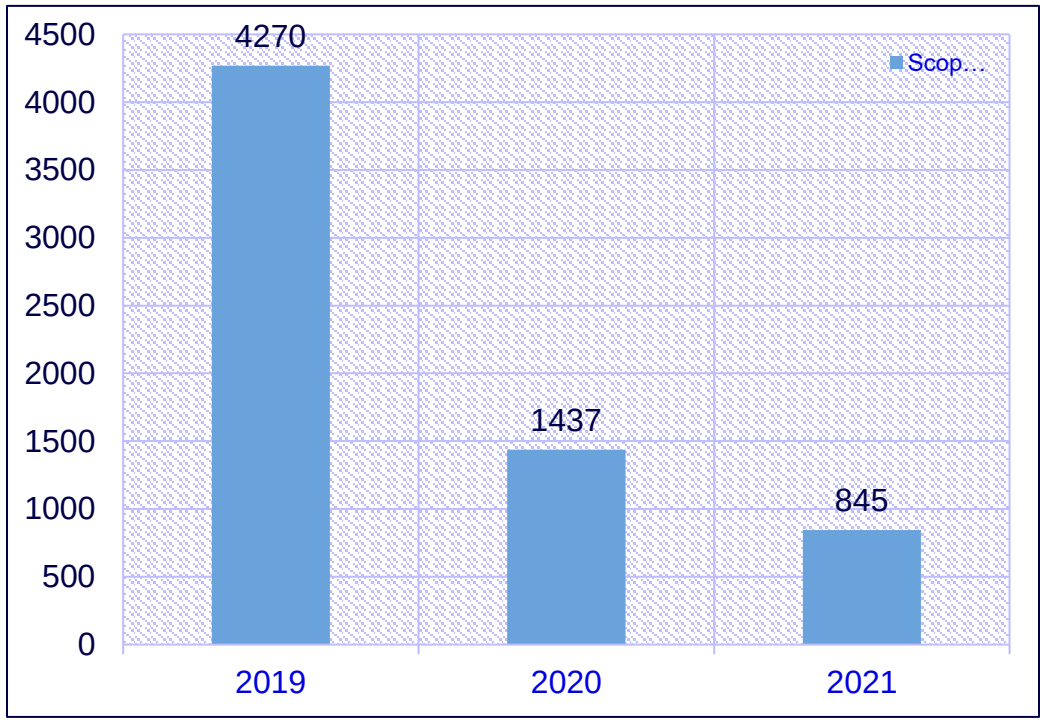
Waste Management

E- waste	Hazardous Waste	Non-Hazardous Waste
• CFL • Tube • Lamps • IT Waste	• Waste Oil • Battery waste	• Paper • Food • Plastic • Metal

Disposal Method

• Segregating the waste • Disposing to KSPCB authorized vendor	• Collected and stored in designated area • Disposing to KSPCB authorized vendor	• Food waste is collected in the facility converted as manure by using OWC by builder • Paper, plastic and metal waste is disposed to cognizant registered vendor

GHG Inventorization & Indoor Air Quality



GHG Reduction Target & Action Plan

100% green energy utilization 2026

Net zero green house gas emission by 2030

Energy efficient project implementation

Test parameters	Units	Result	Permissible limit	Remarks
Carbon Dioxide (Co2)	ppm	400	< 1000	1. Testing through NABL Laboratory 2. Frequency of sampling is quarterly for workstations
Total Fungal Count	Cfu/m3	0	500	
Total Bacterial Count	Cfu/m3	115	500	

Standardization of Best Practices

Air-conditioning

Workplace Temperature policy standardized:
24 °C to 26 °C

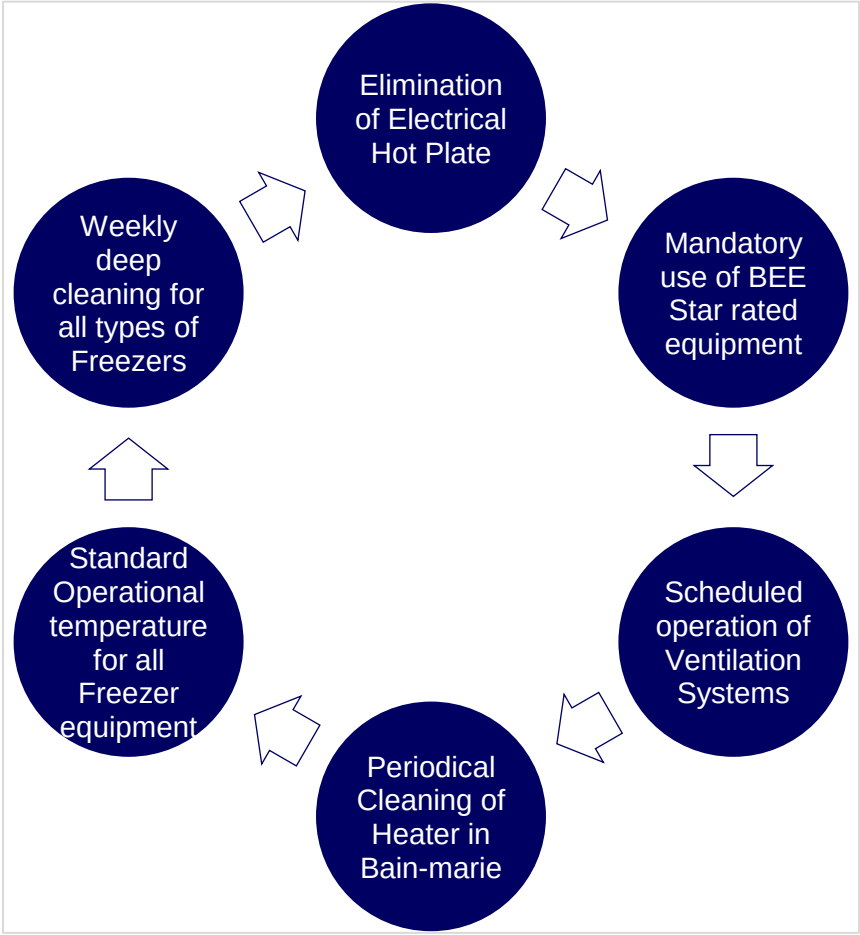
Maintaining UPS/Battery room Temperature b/n
25 °C to 26 °C

Hub room temperature-maintained b/n
24 °C to 26 °C

Personnel Computer

1. Conventional CPU replacement with compact CPU
2. Created awareness to Associates to Switch off the monitor when they leave from office
3. PC to Laptop

Kitchen/ Pantry

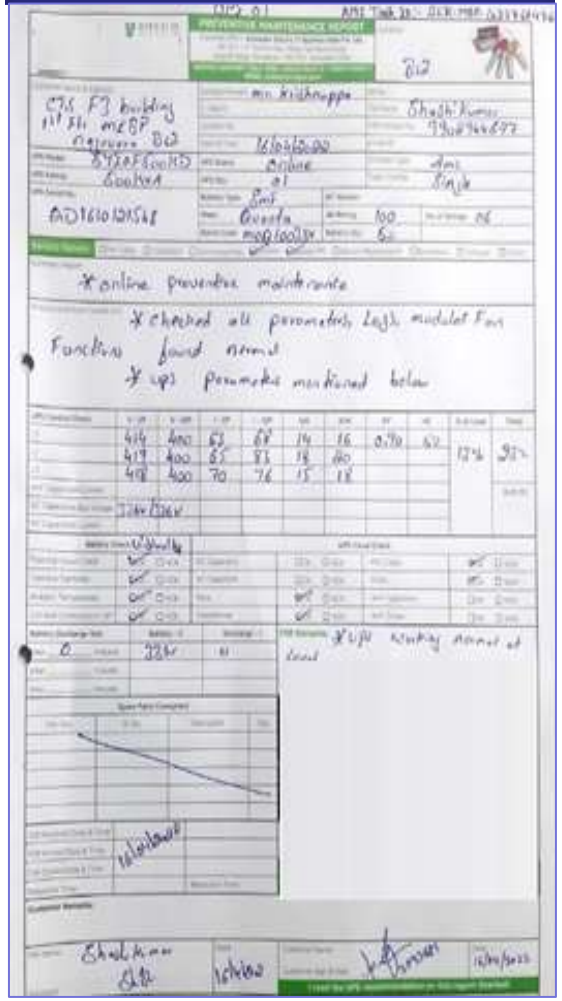


Teamwork, Employee Involvement & Monitoring

Monitoring system in BMS

UPS Monitoring in BMS

Periodic Equipment Service



Equipment Monitoring

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Teamwork, Employee Involvement & Monitoring 2/2

Demo Room for Training

Kaizen by Plant Team

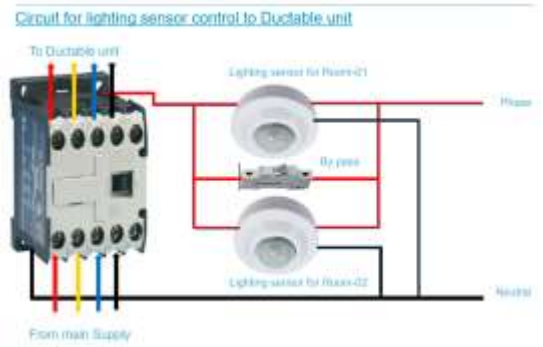
Pullcord Switch for light by in-house team

Timer for bain-marie and exhaust fan by In-house team

Remote Controlled equipment for HVAC ducts

Motion Sensors for ODC and switch room lighting control

Auto operation of AC unit via motion sensors



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IGBC Certification


CII
Confederation of Indian Industry

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
Chairman, LEED India

Dr Prem C Jain
Chairman, IGBC

S Raghupathy
Executive Director, CII-Godrej GBC

Awards

Energy efficient unit Awards 2021

EHS Excellence Awards 2019 (4 Star)

EHS Excellence Awards 2019 (Digitalization)

23rd National Award for Excellence in Energy Management 2022

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