



# 23<sup>rd</sup> National Award for Excellence in Energy Management 2022

Noida INF – SEZ

August 2022

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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.



# Facility Overview



- Nature of Property : SEZ Leased Multitenant
- Total Campus Area : 33 Acre
- Buildup Area of Cognizant : 224580 Sq.ft.
- Seating Capacity : 2096
- Average Head Count : 2520 (BAU)
- Building : Software Development Building & Combined Basement
- Incomer Power Supply : 33 KV
- Sanctioned Demand : 15000 KVA
- Transformer Capacity : 3\*1500 KVA, 1\*2000 KVA (Phase-2)
- Diesel Generator Capacity : 7\*1500 KVA
- UPS Capacity : 2\*175 KVA, 2\*40 KVA, 1\*30 KVA, 1\*20 KVA
- Chiller Capacity : 4\*500 TR
- Elevator : 16 No's
- Diesel Yard Storage Capacity : 120 KL
- STP Capacity " 2\*350 KLD
- Exclusive Medical Centre and Ambulance Services
- Certifications : OSHAS 18001:2007 Certified in 2018  
ISO 45001:2018 in 2020 and ISO 14001:2015 in 2021



**Modular UPS**  
Efficiency 94%



**Water Cooled Chiller**  
0.53 IKW/TR



**Transformer**  
Efficiency 97%



**STP Plant**  
2\*350 KLD



**Digital Water Meter**

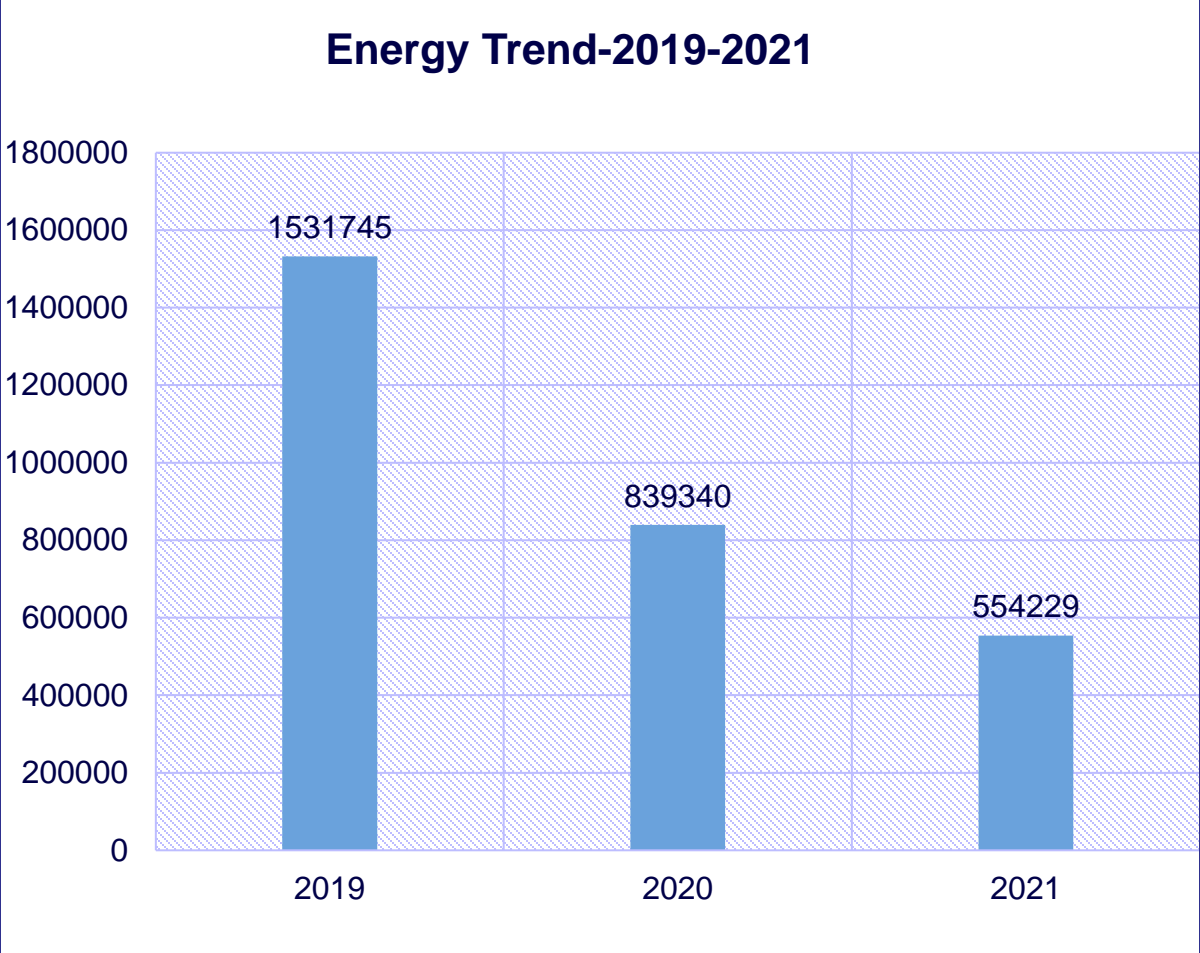


**Rainwater Sump Pump**



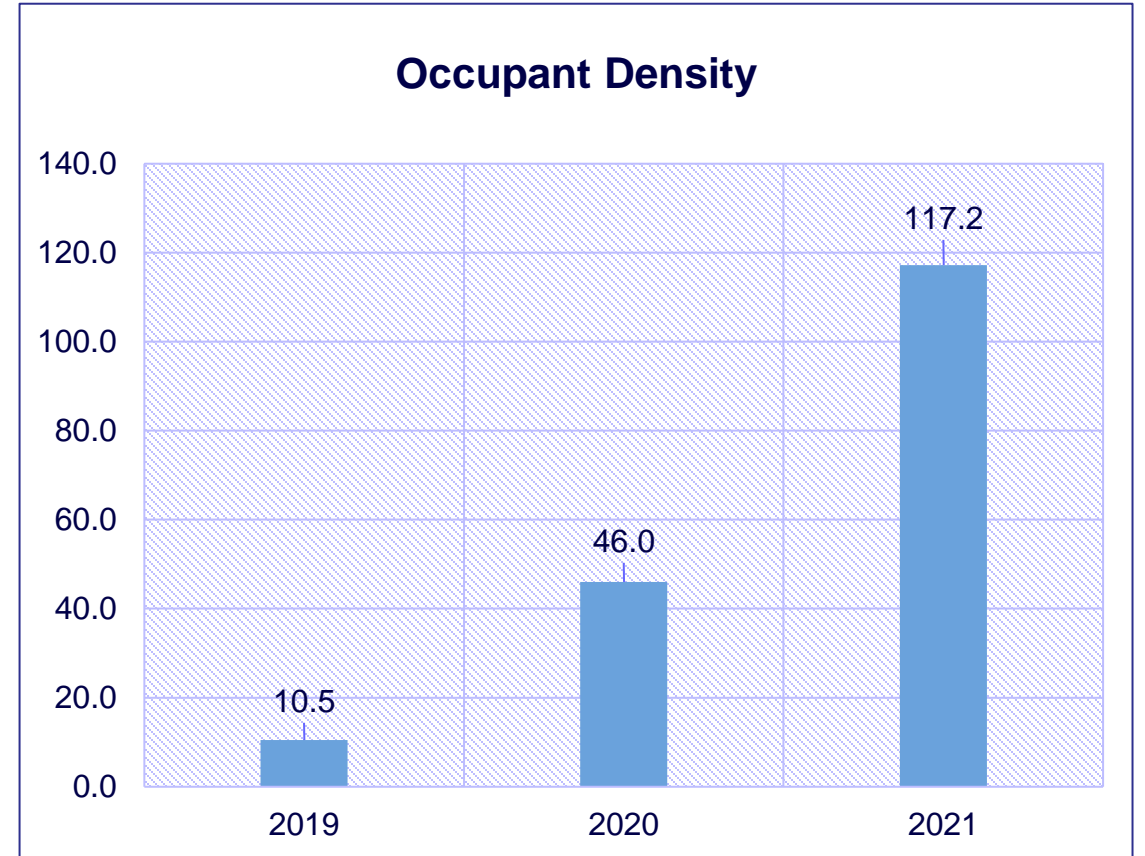
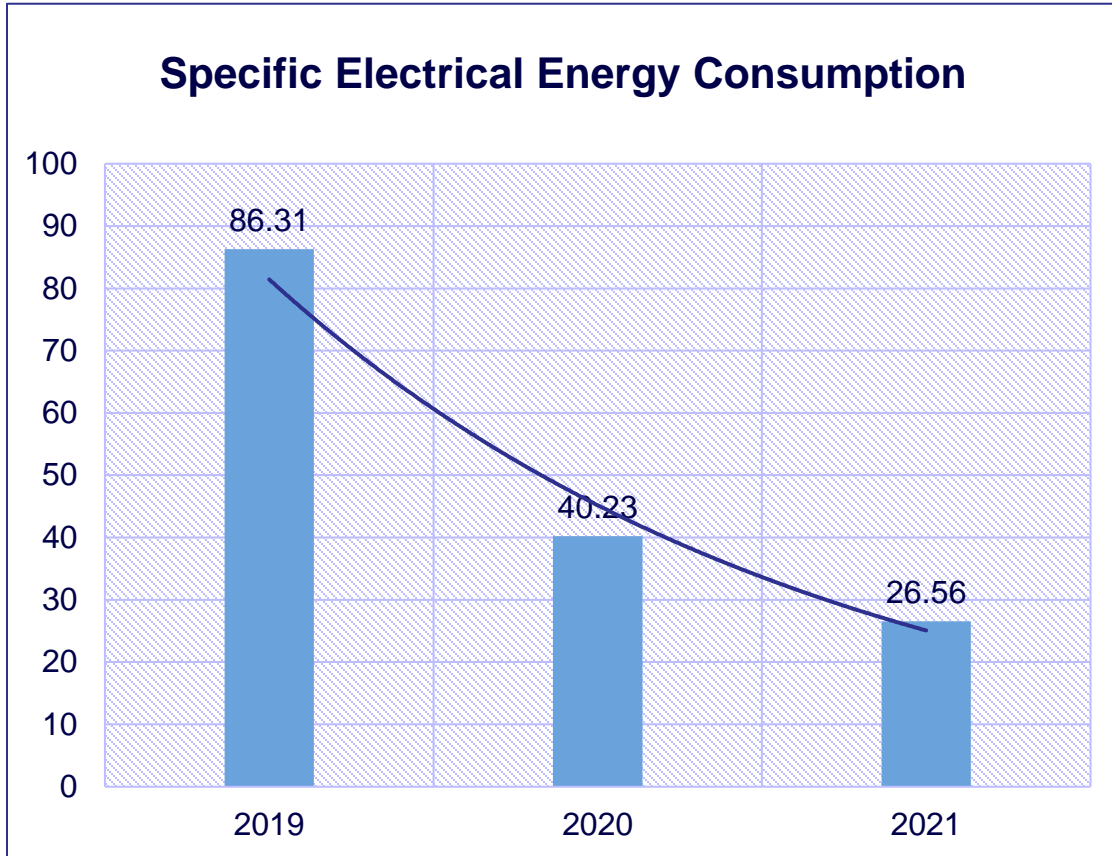
**Air Purification Unit**

# Energy Consumption Overview



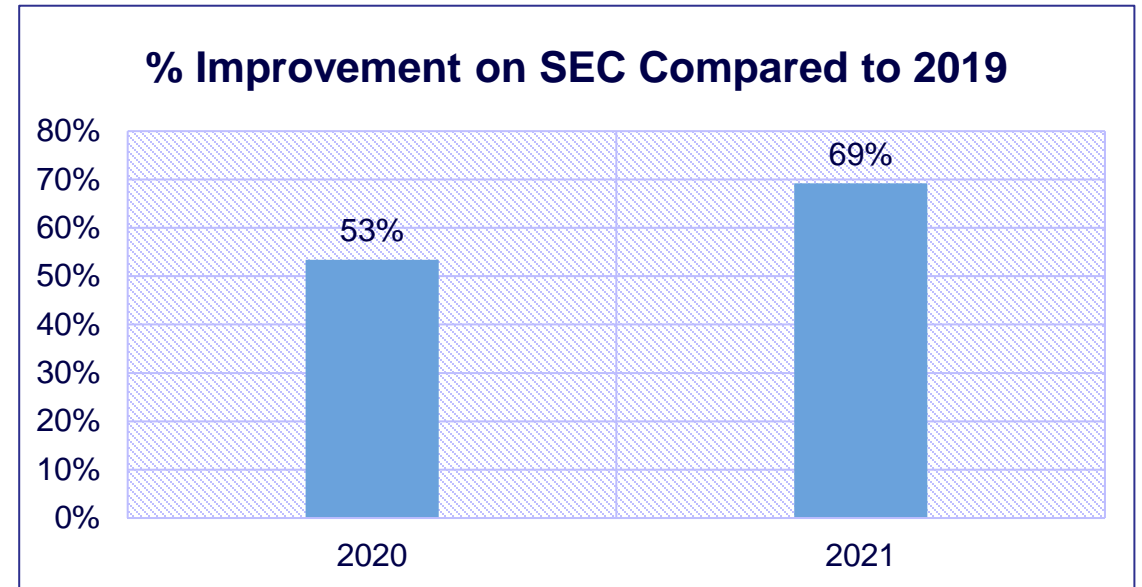
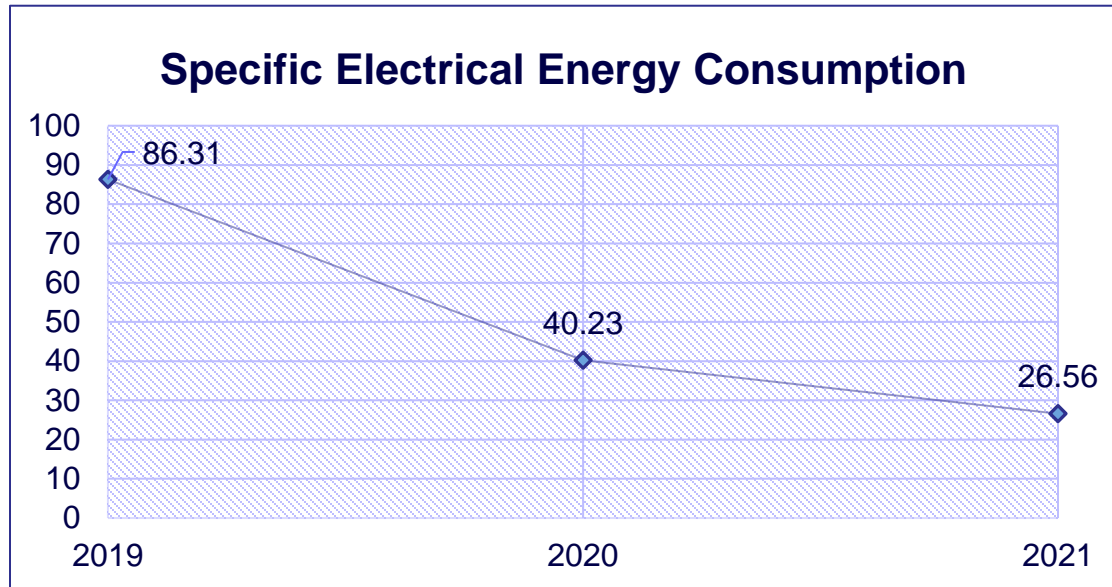
# Specific Energy Consumption Trend - 2019 to 2021

1/3



# Specific Energy Consumption Trend - 2019 to 2021

2/3

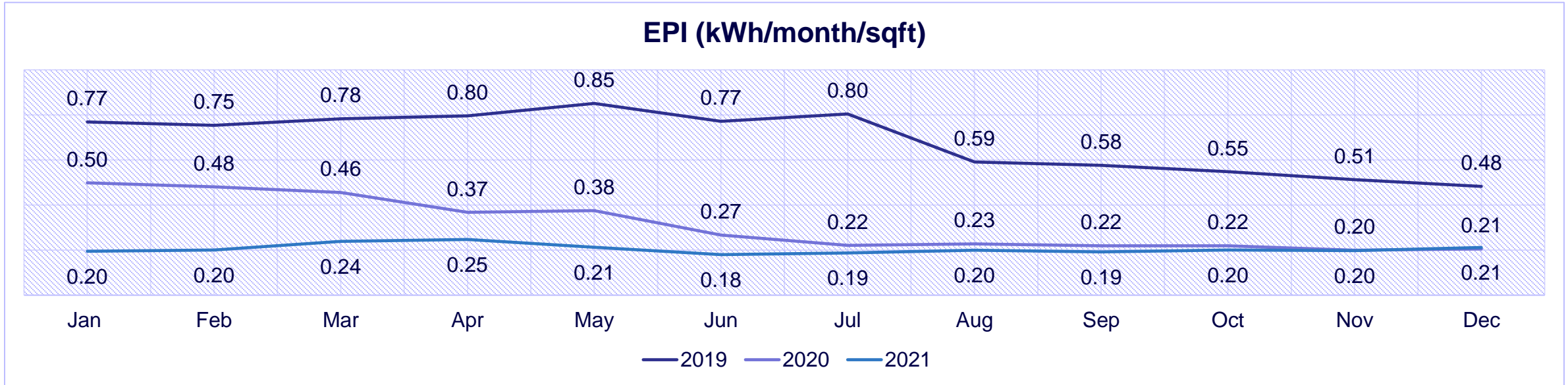


## Reasons for variations of SEC

- Optimization of DVRF operation in Critical Room & café
- HVAC Retrofit
- UPS Consolidation
- CFL replacement with LED
- Optimization of common area lighting
- Due to pandemic situation headcount has been reduced.
- Gradually reduction in headcount

# Specific Energy Consumption Trend - 2019 to 2021

3/3



## Reasons for variations of SEC

- From 2019 BAU year site operated at average of 0.6 kWh/month/sq.ft.
- Which further reduced in year 2020, trend reduced & followed pattern of year 2021 by operation control
- In year 2021 mostly site was operated under lean occupancy

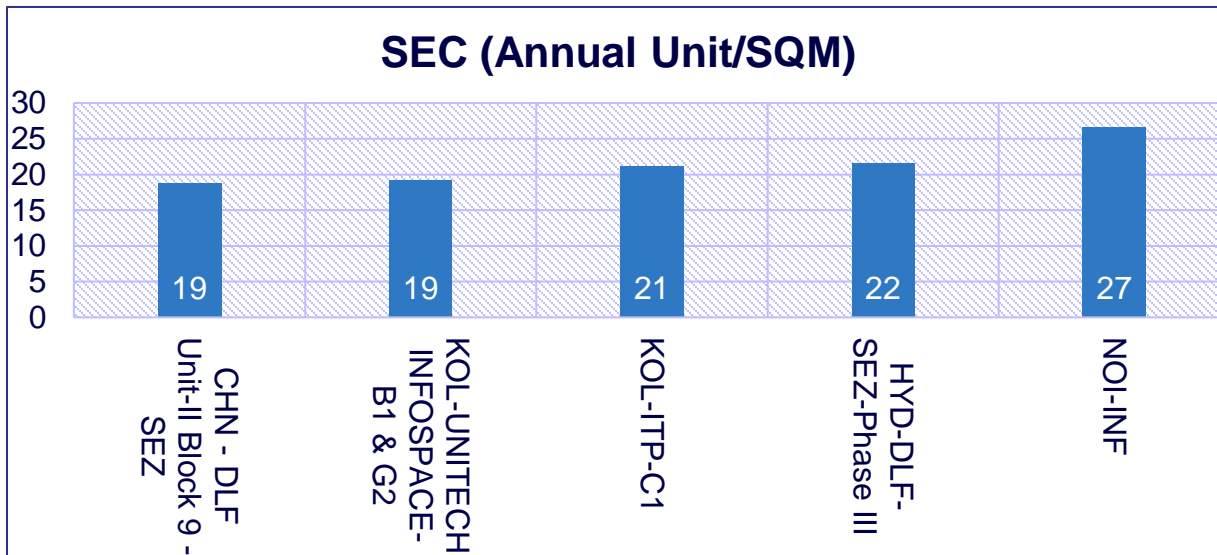


# Information on Competitors, National and Global benchmark

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
<b>5 Star</b>	<b>Below 100</b>	<b>Below 90</b>	<b>Below 80</b>

- Noida under composite climate zone
- For year 2021 as per national Bench mark our facility under

5-star category  
☆☆☆☆☆



We have achieved 26.56 SEC in 2021 & working towards to reach at level of our internal competitor by implementing several energy projects as follows.

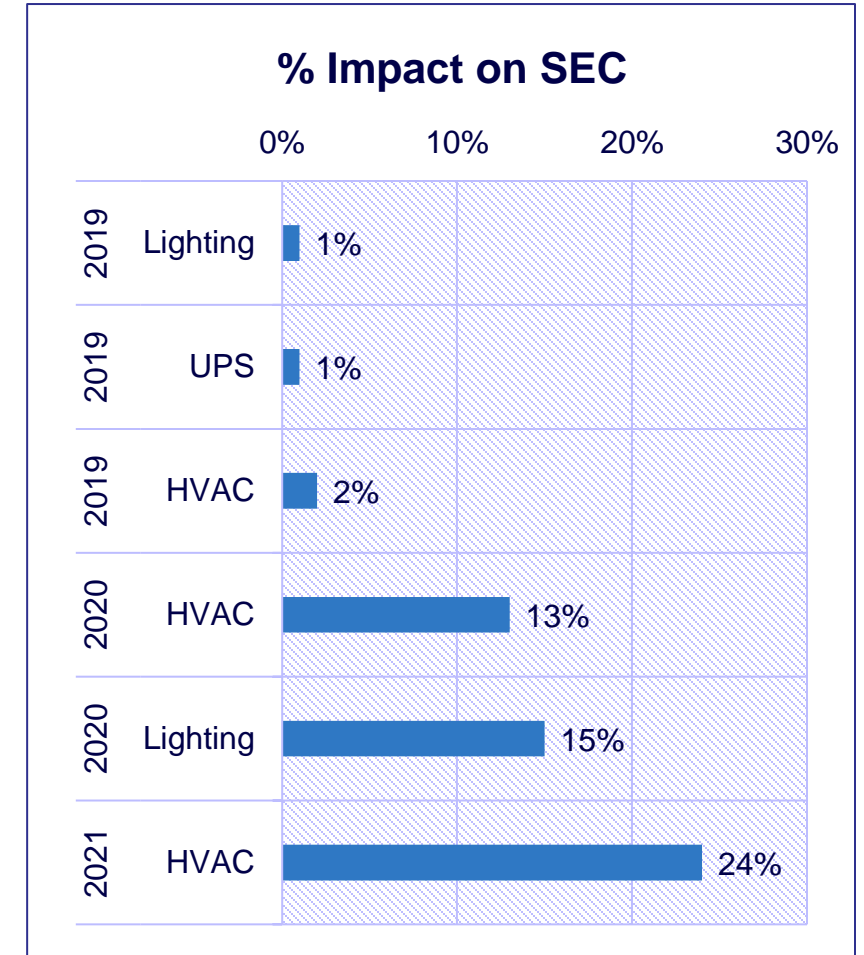
- Reuse of HVAC Units & Consolidation of HVAC system
- 100% LED Retrofit
- 100% Modular UPS & UPS load consolidation

## List of Major Encon project planned in FY 2022-23

Title of Project	Annual Electrical Saving (KWH/ Year)	Saving in INR	Investment in INR	ROI ( In Month)	Comment
LED Retrofit	38332.8	711205.2	402600	7	LED Retrofit of 3rd to 5th Floor
HVAC Consolidation	54720	569709	853342	17	Segregation of over-rated HVAC system & installation in new critical room
HVAC Retrofit	122755.2	1065290	1219480	13	Utilization of VRF system in café in night hours Reduction of AHU Run hours

# List of Energy Savings projects

Year	Initiative Category	No of Energy saving projects	Investments (INR)	Electrical savings (kWh)	Savings (INR)
2019	Lighting	2	114,027	10,279	115,841
2019	UPS	1	1,025,458	8,668	956,665
2019	HVAC	1	0	26,333	296,771
2020	HVAC	2	3,696,879	96,297	1,162,305
2020	Lighting	2	843,502	110,970	1,339,408
2021	HVAC	1	766,337	108,504	1,399,702



# Innovative Project Implemented Details

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## CSU Installation in UG Café

### Brief Description on why Innovation

- There is cafeteria at UG Floor Noida Tower-10 which is approx. 2,500 SQFT
- Café was later converted into re-creation area since the day new bigger size café built up at 3rd floor
- This café was having separate cassette type carrier make AC unit 2\*8.5 TR which is 6+ years old
- Multiple ways of Energy and cost impact to CTS such as :-
  - CAM charges being paid to builder for super area which is inclusive of this café but not using AC provided by builder
  - Energy being consumed towards running AC in this café in addition to the run hours of floor AHU
  - Inefficient HVAC system of the facility

### Trigger for implementing the project

- Cassette type AC Unit's were proposed to replace with optimized capacity of new CSU (Ceiling suspended units)
- New CSUs connected with chilled water line
- Multiple saving in terms of energy/Opex and contribution towards environmental sustainability such as :-
  - Saving of energy 31284 kWh/ Per Year
  - CAM charges being paid to builder will be utilized. Saving of AMC charges INR- 41,492/-
  - Saving of R&M cost which is incurring due to age of the units and corrosion in the environment
  - Saving of carbon emission 53,983 per year. Saving of trees 2,571 per year

Name of the Project	Select Project category	Replicability	Impact on SEC	Year of Implementation	Annual Savings INR	Investment INR
CSU Installation in UG cafeteria	B	Yes	24%	2021	1,399,702	766,337

# Innovative Project Implemented Details

## UPS Consolidation

### Brief Description on why Innovation

The UPS were under loaded are Under loaded specifically at Noida Building-9 as 2x75 KVA, 2x40 KVA & 1x15 KVA UPS installed for single floor which is 30,584 sqft. Incurring high financial losses due to Power Consumption, AMC, Periodic Spare replacements. Impact on EP

### Trigger for implementing the project

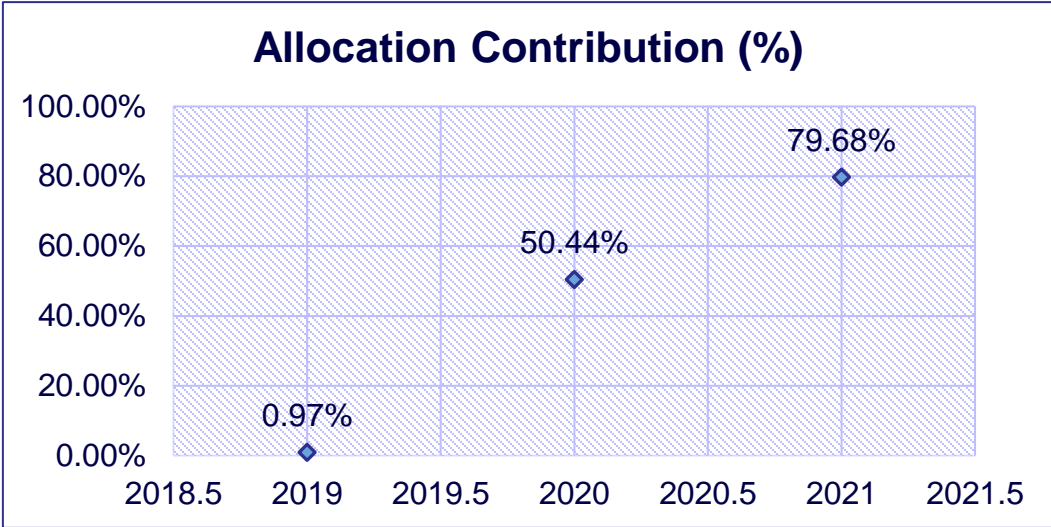
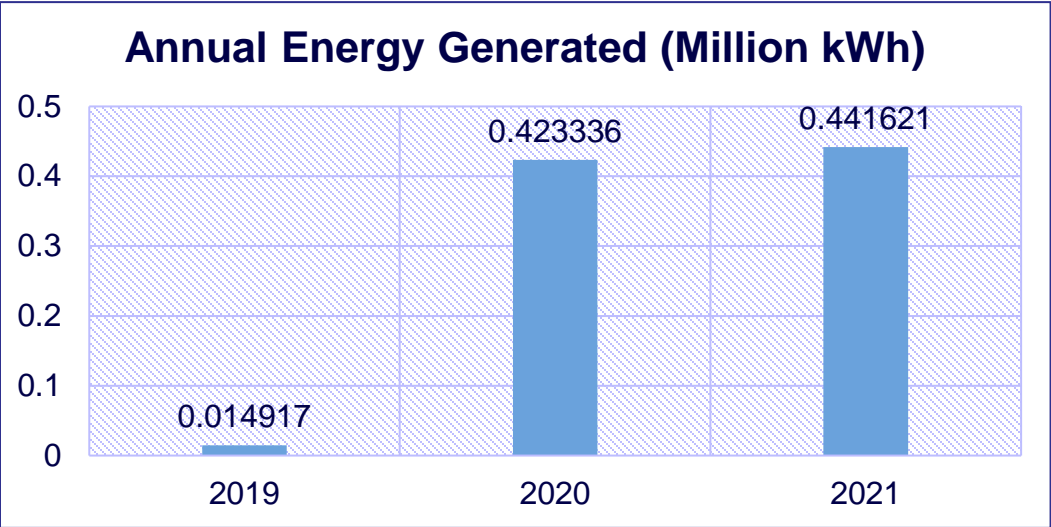
- Efficiency of Building-9 UPS will be increased and all load which are available on 2\*75 KVA will be shifted to 2\*40 KVA which will turn overall saving 8727KWh per Annum.
- Battery cost will be saved (INR- 3,93,792/-)
- 4730Kg of Carbon Footprint saving can be achieved per Annum.
- The fixed losses of UPS like No Load Losses, Proportional Losses and Square Law Losses and variable Low Load losses can be minimized significantly which is on and average 7.5%
- EPI reduced

Name of the Project	Select Project category	Replicability	Impact on SEC	Year of Implementation	Annual Savings INR	Investment INR
UPS Consolidation	B	Yes	1%	2019	956,665	1,025,458

# Utilization of Renewable Energy Sources

Year	Type of Energy	Installed Capacity (MW)	Annual Energy Generated (Million kWh)	Allocation Contribution (%)
2019	Solar (PV) - Onsite Gen.	0.315	0.014917	0.97
2020	Solar (PV) - Onsite Gen.	0.315	0.423336	50.44
2021	Solar (PV) - Onsite Gen.	0.315	0.441621	79.68

- Renewable energy sources are installed by Building Management Team.
- Installed capacity of solar plant in 315 KW.
- It is being used in lift, common area lights etc.



# Waste Utilization and Management

S. No	Type Of Waste Generated	Disposal Method	Action Taken for Reduction of Waste
1	Hazardous Waste	Used and waste battery disposed to UPCB 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	Paper waste 1) Setting limit in the printing paper 2) E-Fit tool implemented, and manual check list optimized 3) Paper cups usages eliminated 100%
3	E Waste	Disposed to UPCB authorized recycler	E-Waste CFL to LED (Lifetime enhancement)

## Key initiative

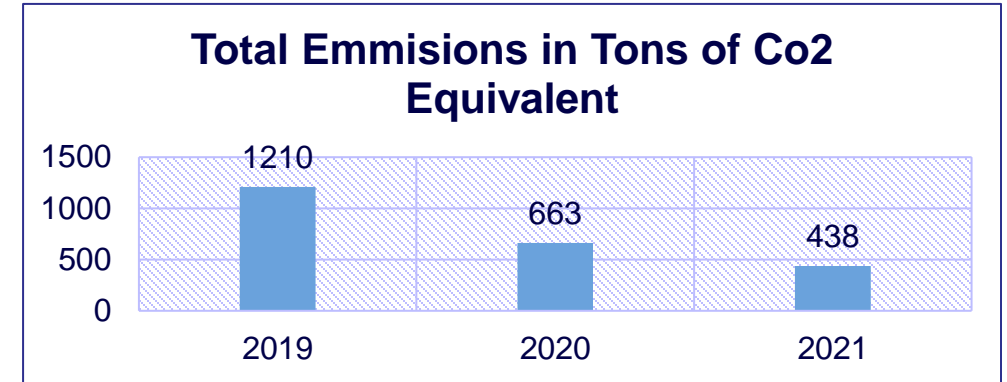
- Re-using, re-designing process is implemented in the facility to utilize scrap of the facility and targeted to utilize 30% of wastes generated
- Replacement of CFL/ T5 conventional light with LED lights which have better life & LED to reduction in E-Waste.
- Extension of Battery life with 6 month , if we found battery health & IR within permissible limit.
- Campus has OWC machine to converts all the food waste in manure & it is further used as a fertilizer in horticulture
- Several initiative taken during pandemic to utilize facility scrap in order to make touch free hand sanitizer stand, multipurpose key, touch free water dispenser & screening both etc.
- Most of the solid waste like wooden & metal sheet is being re-used in facility while doing in-house innovation.



Cognizant choose to refuse the use of following 'One time use and throw plastics' irrespective of thickness form 13.07.2018 onwards

# GHG Emission and Indoor Air Quality

Year	EB consumption in kWh	Scope 2 (EB) in Tons of CO2	Total Emissions in Tons of Co2 Equivalent
2019	1531745	1210	1210
2020	839340	663	663
2021	554229	438	438



## Indoor Air Quality (BAU)

Test Parameters	Units	Result	Permissible limit	Remark
Carbon Dioxide (CO2)	ppm	643	< 1000	1. Testing through NABL Laboratory 2. Random sampling will be done Monthly once for workstations
Total Fungal Count	Cfu/m3	230	Max 500	
Total Bacterial Count	Cfu/m3	345	Max 500	

- Cognizant committed to RE-100 for Year 2026.
- Cognizant committed to reduce absolute carbon emission by 50% by Year 2030.
- As per ESG publication, Cognizant committed for net zero by 2040.



# Measuring & Monitoring Device & Tool

## FMS Tool - Daily Consumption Monitoring

Report → Daily Report

Facility: NOIDA-INF Report Date: 06/08/2022

Power Water Diesel Refrigerant E & M Status

Status: Pending with Reviewer

Minimum Temperature of the Day (Degree Celsius)\* 24 Maximum Temperature (Degree Celsius)\* 38 Cooling Degree Days 12.5

- Consumption Details
- Consumption Breakup
- Air Handling Unit
- Hourly Breakup - Transformer
- Hourly Breakup - DG
- Hourly Breakup - Chillers

## Resilio Tool - Daily Facility Dashboard

Location: Noida Facility: NCR-INF Partner: CBRE Date: Jun 08, 2022

Role: IFM User

Metrics Descriptions	Jun 04, 2022	Jun 05, 2022	Jun 06, 2022	Jun 07, 2022	Jun 08, 2022	Total
Facility Area	224980	224980	224980	224980	224980	224980
Facility Occupied Area	224980	224980	224980	224980	224980	224980
Total Seat Capacity	2178	2178	2178	2178	2178	2178
Headcount Associate - (Numbers)	0	0	148	183	161	117.623
Headcount IFM (Agreed Numbers)	59	59	59	59	59	59.000
Headcount IFM (Scheduled Numbers)	59	59	59	59	59	59.000
Headcount IFM (Reported Numbers)	59	59	59	59	59	59.000
Headcount Security (Agreed - Numbers)	85	85	85	85	85	85.000
Headcount Security Reported - (Numbers)	85	85	85	85	85	85.000
Headcount of Other Contractors - (Numbers)	19	19	19	19	19	19.000
Overall Headcount - (Numbers)	163	163	311	346	324	280.623
Lease Rent - (Cost)	327399.87	327399.87	327399.87	327399.87	327399.87	2619198.940
Lease Maintenance - (Bill Cost)	112487	112487	112487	112487	112487	907996.000
IFM Manager Cost Total - (Cost)	49185	49185	49185	49185	49185	554688.000
AMC Air conditioner - (Cost)	1164.12	1164.12	1164.12	1164.12	1164.12	9312.960
AMC Electrical - (Cost)	1097.26	1097.26	1097.26	1097.26	1097.26	8778.080
AMC Generator - (Cost)	0	0	0	0	0	0.000
AMC Elevator AMC - (Cost)	3021	3021	3021	3021	3021	24168.000
AMC Other Equipment - (Cost)	0	0	0	0	0	0.000
People Related Consumables - (Cost Per Head)	0	0	0	0	0	0.000

## FMS Tool - Monthly Consumption Monitoring

Report → Energy Management

City - Facility: NOIDA-INF Month - Year: 2022-04 Consumption Target (in KWH): 52866

- Billing Period
- Facility Details
- Consumption Details
- Billing Details
- Unbudgeted Load
- Retrofit Savings
- Upload Documents

## Ozone Server - EBO-3 BMS Monitoring

DATE & TIME 07/22/2022 4:07:27 PM

IND-NCR- B6,B10

- Switch Room Temperature
- AHU Units
- Energy Meter
- VAV Units
- VRF Unit
- UPS System
- WLD Monitoring
- EXHAUST
- Fire Alarm System status
- TRENDS AND REPORTS

## Sphera SW - Carbon Footprint Tool

Corporate Sustainability

Indirect Energy

Collection period: 2021 Site: IND - Gurgaon - Infospace - Tower 1

Total energy consumption → Indirect energy consumption → Electricity (grid mix)

Month	Value	Unit
May	9,631	kWh
June	9,268	kWh
July	10,026	kWh

## AMS Tool - For Asset & Inventory Management

AMS ASSET MANAGEMENT SYSTEM

Hi, Mohd Atiz | Logout | My Settings | Help

Processor: Mohd Atiz Vendor Name: All Task Status: All Task Type: All

Asset Approval Task is Rejected

Task ID	Task Name	Task Type	Task Status	Planned start date/time	Planned end date/time	Asset Category
NOI-INF4289023	Signage are not fluorescent t...	Breakdown Maintenance	Sub Task in Progress	17/03/2020 12:31:41 AM	19/03/2020 04:47:50 PM	Civil
NOI-INF4289053	DB chart is not available in D...	Breakdown Maintenance	Sub Task in Progress	17/03/2020 12:50:47 AM	19/03/2020 12:51:41 AM	Electrical



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