23rd National Award for Excellence in Energy Management 2022

Pune - Hinjewadi

August 2022

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

Pune Hinjewadi Campus – Fact Sheet

- Facility was Built & Occupied in 2001
- Total Campus Area is 4,12,470 Sq. Ft.
- Building Area 3,80,983 Sq. Ft.
- Number of Seats – 2750
- Incoming Power Supply: 22KV
- Sanctioned Demand: 3000KVA
- Transformer Capacity: 2500KVA X 2nos
- Diesel Generator Capacity: 1250KVA X 2nos & 1010KVA X 1 no's
- UPS Capacity: 150KVA X 2nos
- Chiller Capacity: 342TR X 2nos
- Elevators: 6No’s
- Diesel Yard Storage Capacity: 20KL
- STP Capacity: 150KLD

H1

H2

Building Advantage

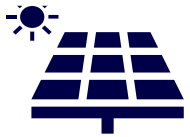
Façade Glass
SHGC -0.22
U Value -1.8 W/Sq.m K

UPS system
Efficiency –99%

Transformer
Efficiency –98%

OWC
Capacity–60Kg

STP
Capacity–150
KLD With Online
Monitoring
system

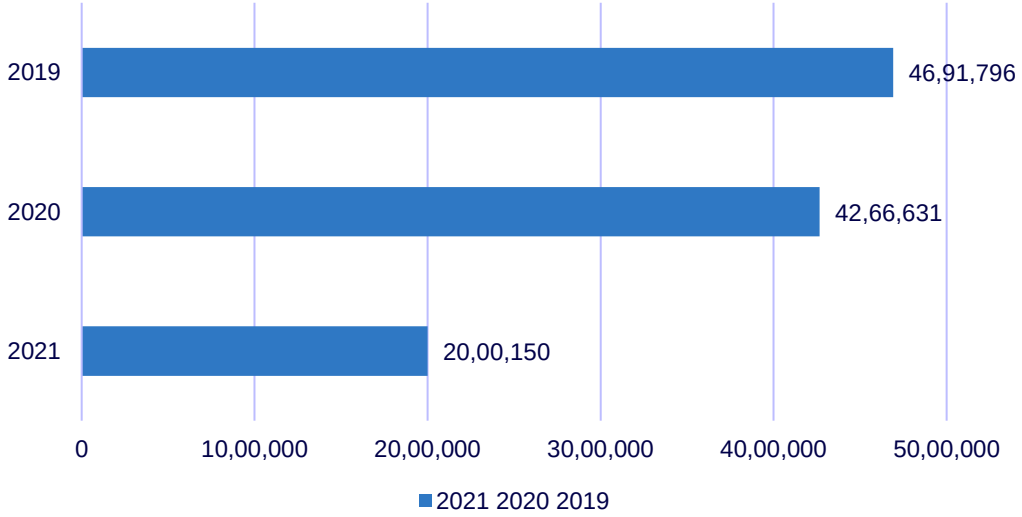


Solar Power
(Upcoming)

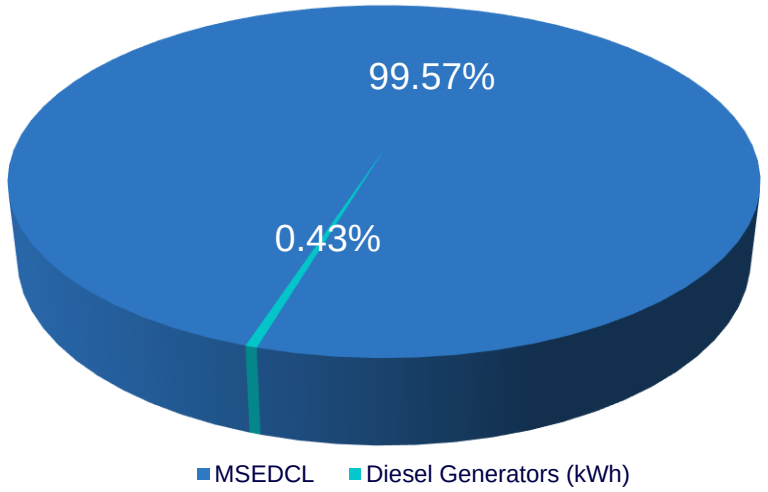
Energy Consumption Overview for Year 2019 -2021

Source of Energy	2019	2020	2021
MSEDCL (Unit)	4,671,480	4,246,807	1,991,594
Diesel Generators (kWh)	20,316	19,824	8,556
Total Energy Consumption (kWh)	**4,691,796**	**4,266,631**	**2,000,150**

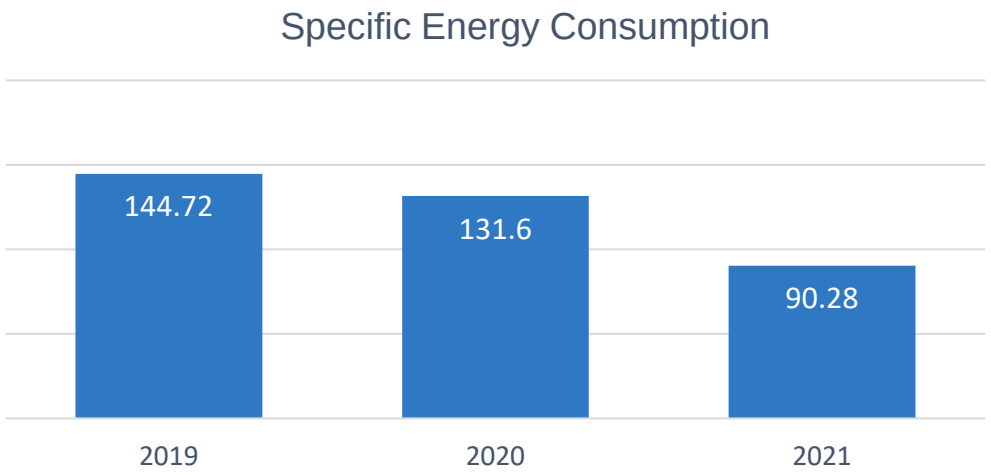
Energy Trend

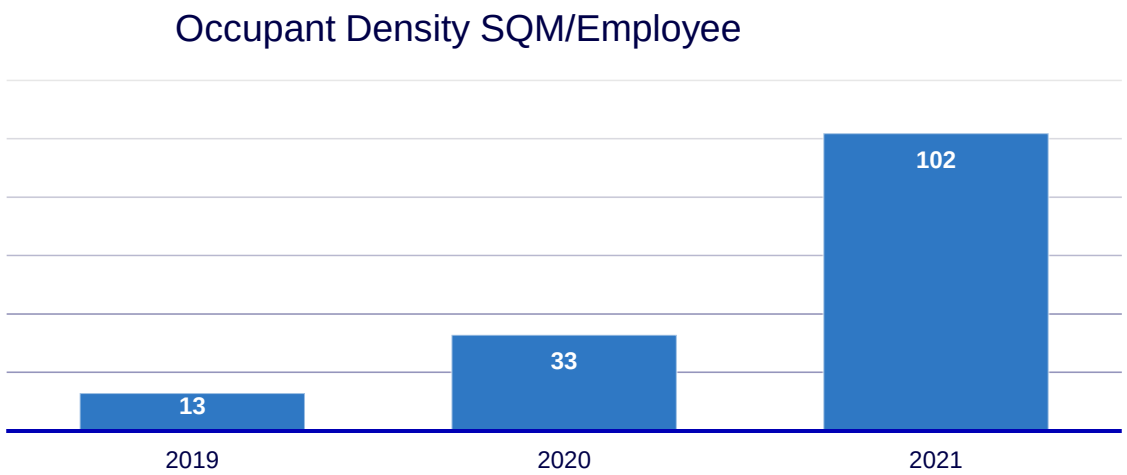


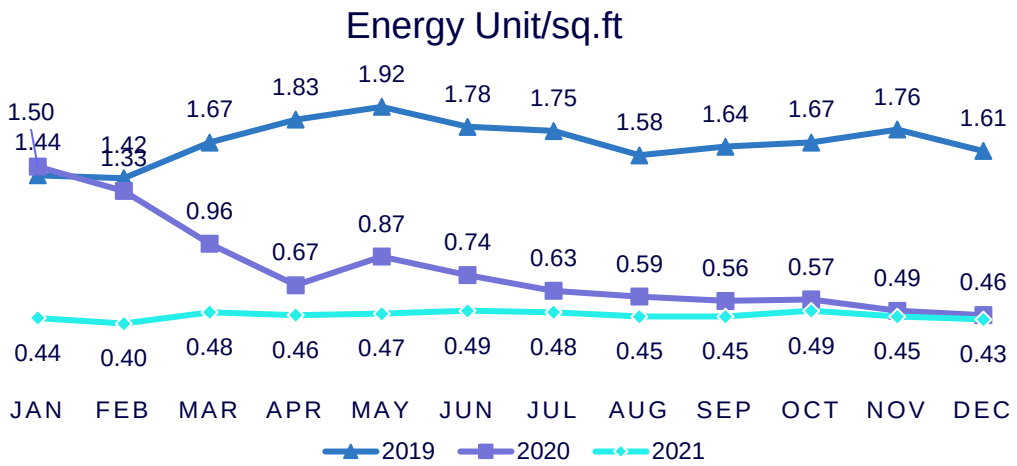
Source Wise Energy 2021



Specific Energy Consumption Trend-2019 to 2021







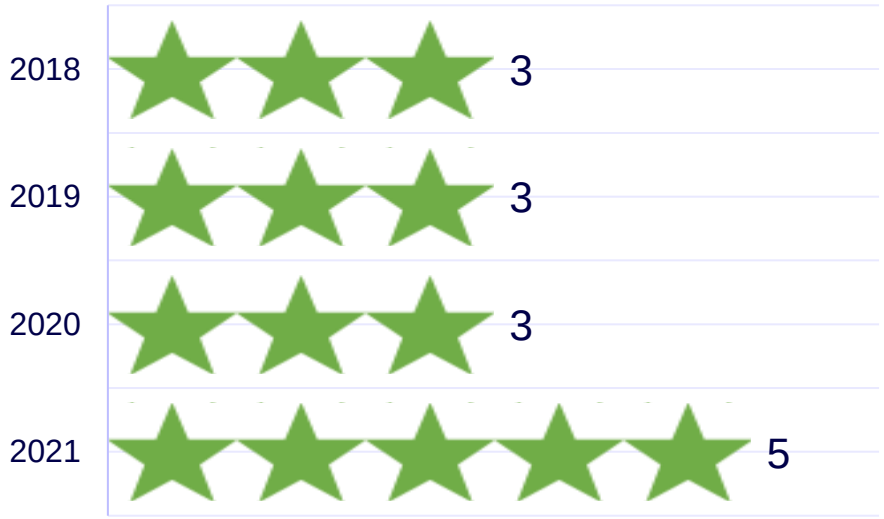
Actions Taken to Reduce the Energy consumption

- 2019-Operational Controls, Optimized operation of AHU's
- 2020- LED and Chiller Retrofit
- 2021- Optimized Facility operations during pandemic

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**

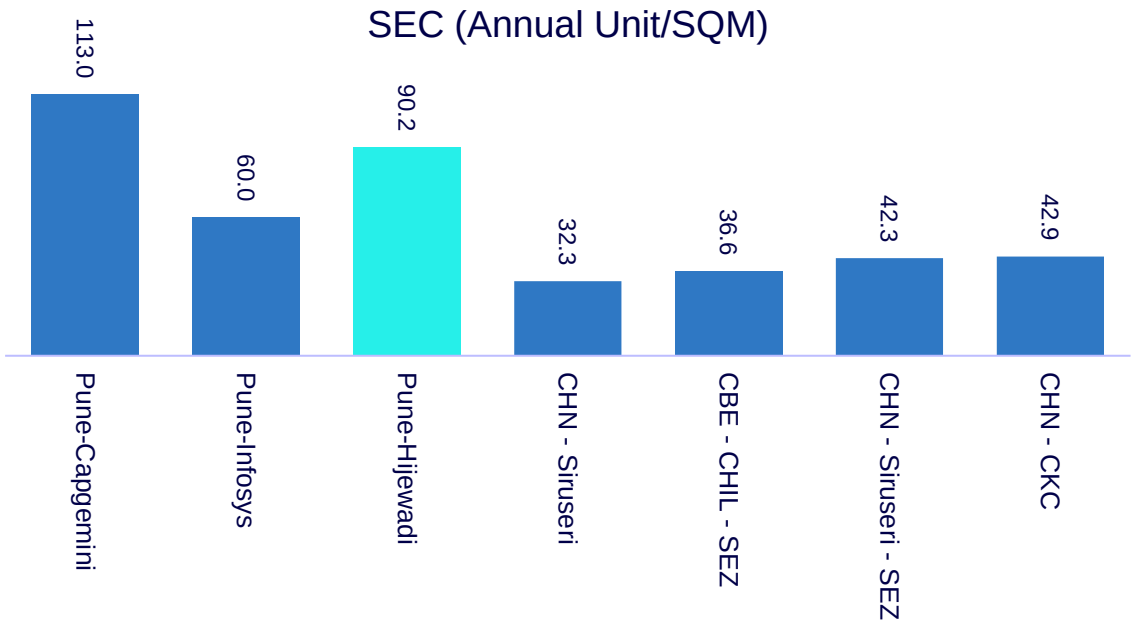
*Pune –Warm & Humid Climate Zone



To achieve Best SEC, following projects are planned to implement in the coming years

- EC fan retrofit for all AHUs

Comparison of SEC with Internal & National Benchmark



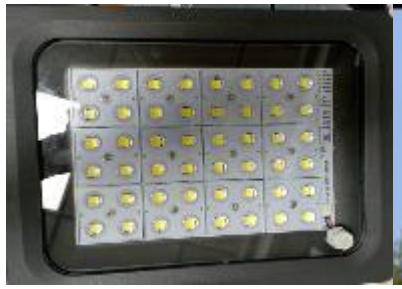
To achieve Best SEC, following projects are planned to implement in coming years

- EC fan retrofit for all AHUs
- Installation of Motion Sensors for passages and common area lights

Action Plan for 2022-2023

Replacement of conventional AHUs with EC Fans

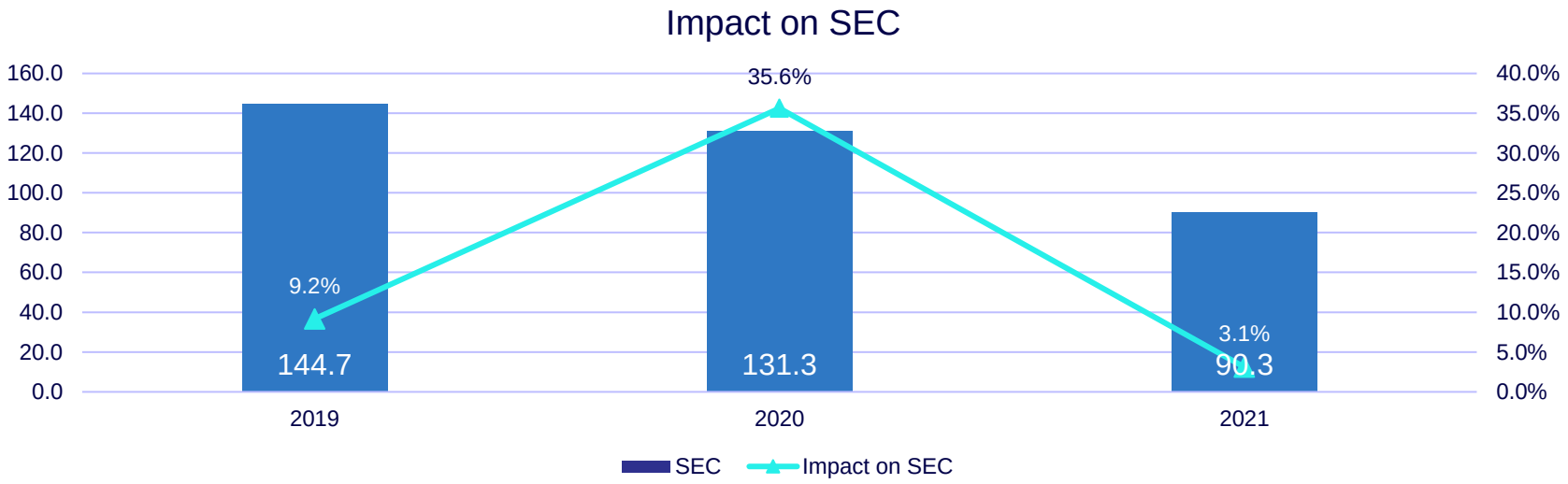
Installation of Motion Sensor for passage and common area lighting system



Replacement of 400 W X 12 no's Metal Halide Type (Flood Light) with LED light 250W

Energy Saving Projects Implemented in Last 3 Years

Year 2019	Year 2020	Year 2021
• Projects- **4** • Investment- **0.59 MN INR** • Save(kWh)- **0.43 MN**	• Projects- **5** • Investment- **7.7 MN INR** • Save(kWh)- **1.52 MN**	• Projects- **02** • Investment- **0.95 MN INR** • Save(kWh)- **0.1 MN**



Innovative Project 1- Retrofit of Air-cooled Chillers & Pumps

Challenges

- Existing air-cooled chillers (250 TR x 3 no's) were 15 years old and inefficient
- Condenser fins deteriorated/ damaged due to ageing, affecting high condenser pressure causing frequent chiller trips
- Due to frequent trips, complaints of low colling reported from business
- Chiller's efficiency degraded to 1.76 (IKw/TR)

Solution

- Replacement of inefficient chillers with spare & efficient Air-cooled chillers from other facility at Pune
- Replacement of constant flow primary & secondary chilled water pumps with New VPF pumps

Benefits

- Resolution for low cooling complaints and escalations
- Improved chiller efficiency
- Electrical Energy saving- **476378 units per year**
- Return of investment- **34 months**

Innovative Project 2- LED Retrofit

Challenges

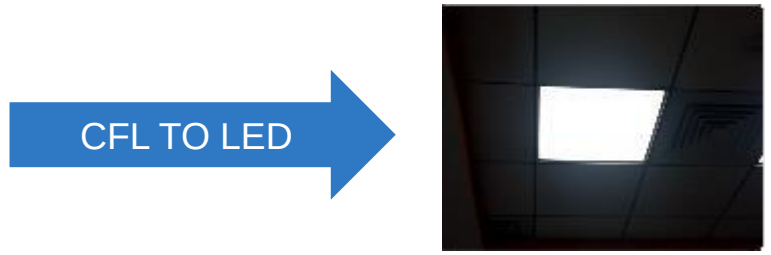
- Earlier CFL light fitting were 14 years old
- Low lux levels accounted more power consumptions
- High maintenance and operation cost

Solution - Replacement of

- 36W X2 no's CFL light fitting with 26 W LED fittings
- 13W X 3 no's T5 light fittings with 26 W, 2X2 light fittings
- CFL downlight with LED down light
- 4ft FTL fittings with 4ft LED fittings

Benefits

- Improvement in Lux level as per standard norms
- Energy saving **23474 units per month**
- Cost saving **2.4 lakh per month**



Innovative Project 3- Replacement of AHU Belts

Challenges

- Conventional V-belts are used in all AHUs which need periodic replacement due to wear & tear
- Conventional V-Belt are sensitive to temperatures, oil, grease and common chemicals and solvents
- Conventional V-Belt - after initial run-in and re-tensioning, continues to stretch over time causing belts to become less efficient and slip if not re-tensioned regularly
- Heat & frictional losses increase the power consumption

Solution

- Replacement of Conventional Rubber belts With PU Link Belts

Benefits

- Extended life including spares & service cost optimization
- Improvement in terms of carbon footprint
- Enhanced equipment performance

Replacement of AHU Belts					
Energy saving per hour per AHU	2.5	KWH		**Conventional Rubber Belt**	**Polyurethane Belt**
Total no of AHU	22	Nos			
Energy saving per day @ 12 hours	660	KWH			
Energy saving for 22 days (month)	14520	KWH			
Energy saving per year	174240	KWH			
Cost saving per year @ INR 12 per unit	2090880	INR			
Investment- cost of new belt	593175	INR			
ROI during BAU	**0.28**	**Year**			
ROI during BAU	**3.40**	**Month**			

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 MPCB authorized recycler	Battery waste – 100AH 128 No's batteries replaced in April 2018. Impedance test found battery in good condition and extended the replacement period from 3 yrs. to 4 yrs.
2	Water Waste	Recycled through STP	STP wastewater is treated reused for flushing & gardening/landscaping
3	Food Waste	Recycled through OWC	Manure is used for the gardening as alternate to the inorganic fertilizers. Manure distributed to the employees to use their home garden
4	Non-Hazardous Waste	Carton, plastic & paper waste disposed to authorized recycler	Paper waste Limitation of printer access Punctuality tool implemented; manual check list optimized Paper cups usages eliminated 100% Plastic waste Spoons, retail water bottles, straw, stirrers, garbage liners usage are stopped
5	E Waste	Disposed to authorized recycler	E –Waste LED Replacement completed (Lifetime enhancement)

Waste Utilization and Management

STP Operation

Sewage Treatment Plant Capacity 150 KLD with Ultrafiltration (UF) plant to use recycled STP water for building restrooms usage as well other usage for landscape/ garden

STP

UF Plant

Hydropneumatic System

- 40 KLD/day water recycled.
- Efficient treatment technology – MBBR technology
- Recycled water is used for irrigation, gardening and flushing

OWC Operation

Organic waste Cafeteria Food Waste

Waste Treatment

Raw Composite

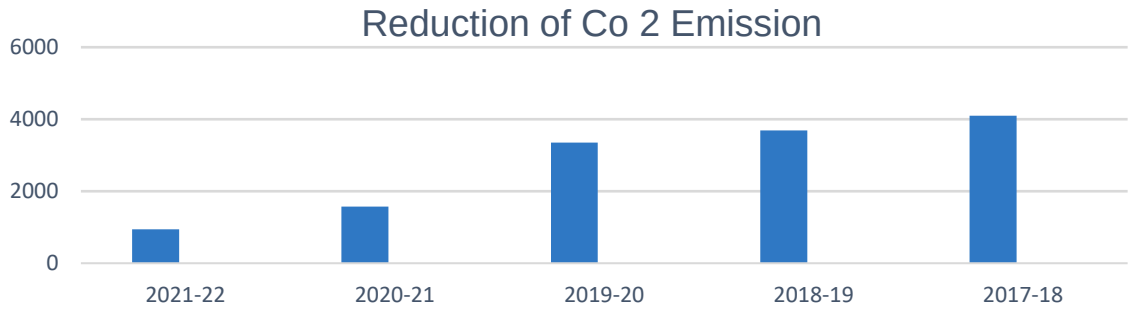
Composting Machine

Manure Generation

Manure to Garden
40 kg per day

GHG Emission and Indoor Air Quality

Year	Scope-1 Emission	Scope-2 Emission	Scope-3 Emission	Ton of Co2 equivalent
2021-22	7	945	0	952
2020-21	13	1573	0	1580
2019-20	33	3355	0	3388
2018-19	29	3690	0	3719
2017-18	16	4100	0	4166



Indoor Air Quality (BAU)

Testing parameters

- Oxygen (O2)
- Carbon Monoxide as (CO)
- Carbon Dioxide (CO2)
- Respirable Suspended Particulate Matter (RSPM)
- Temperature
- Relative Humidity (RH)
- Ventilation Rate
- Total Volatile Organic Compounds
- Illumination
- Total bacterial Count
- Total Fungal Count
- Legionella

Remarks:

- Testing through NABL laboratory.
- Random sampling will be done monthly once for workstations.
- All the parameters are found within pollution control board specified limit.

Plan of GHG Reduction

Renewable Energy purchase in progress in 2022, 70% of existing energy sourced from offshore solar purchase

1. Replacement of existing convectional AHUs with energy efficient EC fan AUH's in year 2023
2. Cognizant committed RE100 in 2026
3. Cognizant committed 50% absolute emission by 2030

Cognizant Commitment

2040: Reduce absolute emissions by 90%

2030: Reduce absolute emissions by 50%

2026: Source 100% renewable energy

NetZero to reduce our contribution to climate change we set a global, public goal of reaching net zero emissions compared to our 2019 emissions baseline. In order to achieve our Net Zero Goal, we will address emissions in our operations, including our offices and facilities, as well as from our supply chain and business travel. The commitment will shape our real estate management, energy sourcing, supply chain and travel philosophy in addition to the equipment and technologies we use in our offices and data centers.

Key Elements of our Net Zero Goal

- Focuses on absolute emissions reductions through operational efficiencies and renewable energy use, before the use of carbon offsets
- Measures reductions from a recent, pre-COVID-19 emissions baseline (2019)
- Includes a near-term renewable energy target
- Includes often-hidden emissions, from travel to supply chain to associate commuting, in Scope 3
- Aligns with the need to keep global average temperature increases to 1.5 degrees Celsius

Key Elements of our Net Zero Goal Governance

- Submitted for third party validation with the Science Based Targets Initiative (SBTi)*
- Periodically reviewed by the Board's Governance and Sustainability Committee
- Commissioned an external third party to perform attestation procedures over our GHG emission
- According to the United States Environmental Protection Agency, Scope 3 emissions are the result of activities from assets not owned or controlled by the reporting organization, but that the organization indirectly impacts in its value chain.

Teamwork, Employee Engagement & Monitoring

Involvement of our Associates

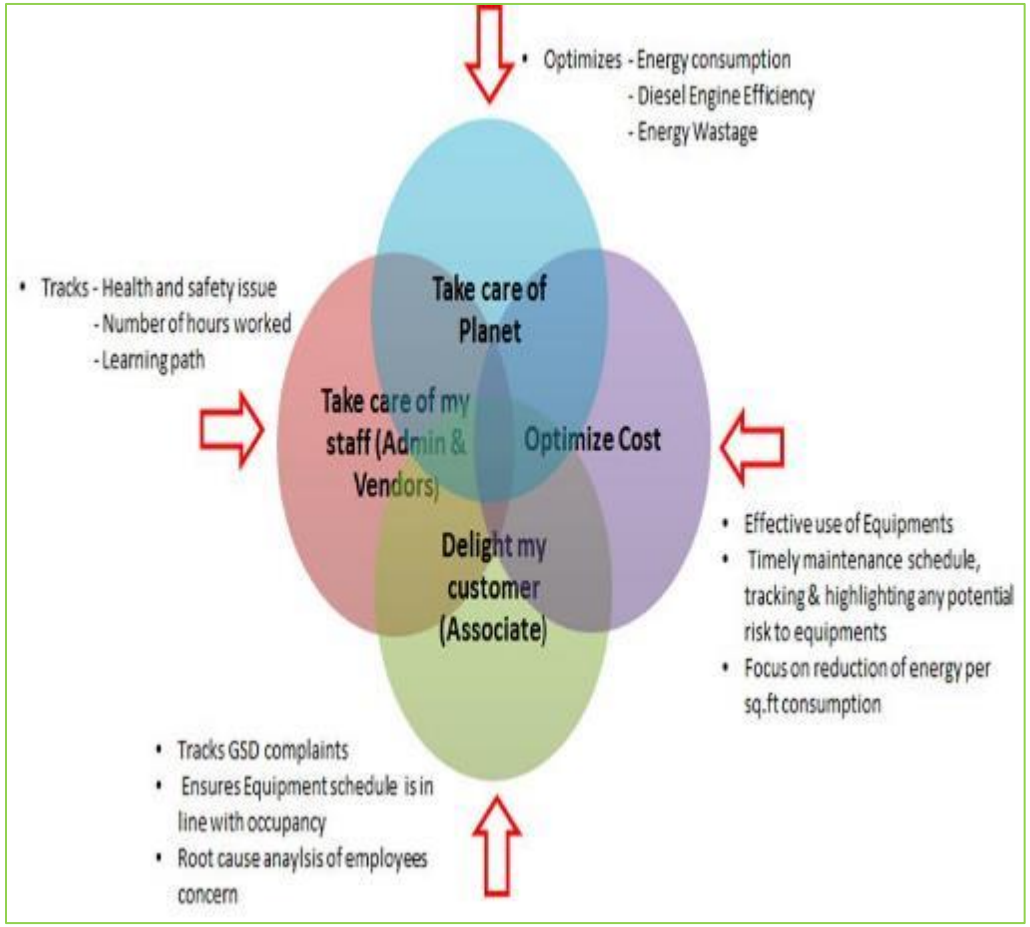
Employees Awareness through :

- Various Signage and Posters Competition/ Campaigns.
- Innovations Awareness Campaigns
- Message through Admin Dashboard
- Energy and Environment Awareness Mailers

'The only way forward, if we are going to improve the quality of the environment, is to get everybody involved'

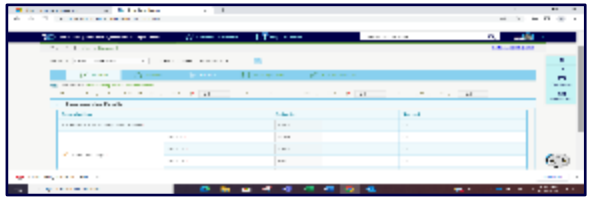
Teamwork, Employee Engagement & Monitoring

Effective Monitoring & Control

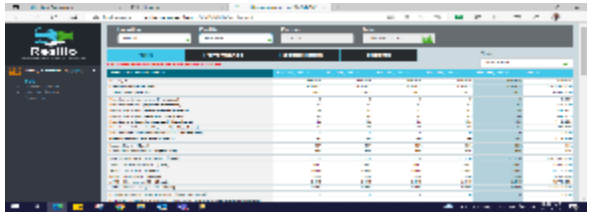


Energy & Emission Monitoring Tools

Facility Management System- Daily Energy Dashboard



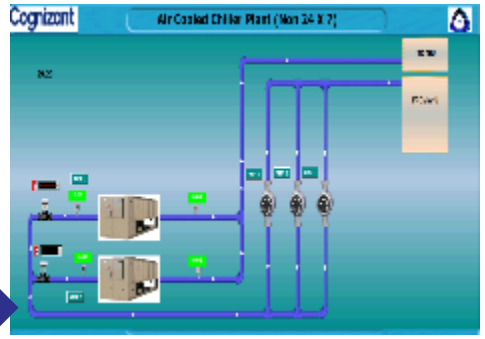
Resilio- Daily Status Report Energy & Water

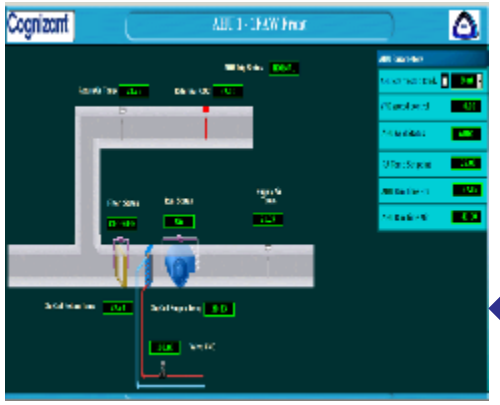


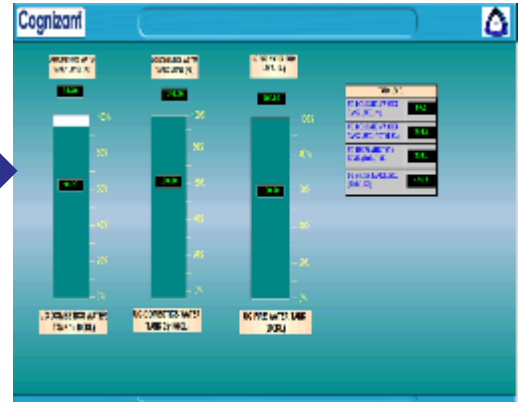
Sphera Tool – Monthly Report Energy, Diesel, Refrigerant

BMS Operation & Monitoring

- All floor AHU Operation & Monitoring
- All panel Energy meter Monitoring with trend report
- Chiller ON/OFF/Trip Status & Parameter Monitoring
- All UPS Operation & Monitoring
- DG Parameter Monitoring
- All pressurization fan operation & monitoring
- All Raw & Domestic tank level monitoring
- All Water-Diesel & STP meters online monitoring
- ALL AHU fire damper monitoring







CII Award For Energy Efficient UNIT

Recognition by External- CII Award For Energy Efficient UNIT in 2017

Facility Certifications

ISO 9001:2015
17th Nov. 2021

ISO/IEC 27001:2013
02nd Jul 2021

ISO 14001:2015
21st Dec.2021

ISO 45001:2018
06th Apr 2020

Future Plans- Energy

- **Retrofit of AHU with EC Fans -** Existing AHUs are conventional and 17-year-old. Due to aging factor as well as wear & tear, power consumption is high which has huge energy & maintenance cost impact.
- **Retrofit of Exhaust blowers -** Replacement of existing restroom exhaust blowers with energy efficient Exhaust Blowers- 11 No's.
- **Renewable Energy Programme -** Utilization of H1 & H2 Building Terrace areas for Roof Top Solar Power system installation Solar Installation feasibility : 110 KW

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