25th National Award for Excellence in Energy Management 2024

CCC, Coimbatore

September 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

CCC (Cognizant Coimbatore Campus) is an owned facility.

Commencement of operation from:

- SDB1 – 2009
- SDB2 – 2014 (Tower – 2)
  – 2016 (Tower – 1)

Campus area :

- SDB1 – 6.56 Lakhs ft^2 with G+7 floors
- SDB2 – 6.50 Lakhs ft^2 with G+7 floors(Tower – 1&2)
- Green belt spread across 4.0 Lakhs ft^2

Seat capacity : 14,040

- SDB1 – 5,770 seats
- SDB2 – 8,270 seats

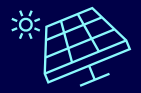
1st Facility in Cognizant to attain “LEED India Gold Certification”.

ISO 45001:2018 Certified Facility

Software Development Block-1

Software Development Block-2

Utilities overview

Description	Specification
Substation 	• EB Demand : 4,600 kVA • Transformers Capacity : 2,500 kVA x 6 Nos (Oil cooled transformers)
Roof Top Solar 	• Total Capacity : 750 kW_p (2 x 375 kW_p)
Diesel Generators 	• Total Capacity : 15,000 kVA • Capacity Break up : 10 Nos x 1,500 kVA
UPS 	• Total Capacity : 2,860 kVA (Workstation – 2,300 kVA)
Chillers 	• Total Capacity : 6090 TR • Type - Water Cooled : 3 Nos x 950TR | 3 Nos. X 900TR | 2 Nos. x 270TR
Sewage Treatment Plant 	• Capacity : 2 Nos x 375 kL per day
High Speed Diesel (HSD) 	• Capacity : 60 kL
Rainwater Sump 	• Capacity : 70 kL

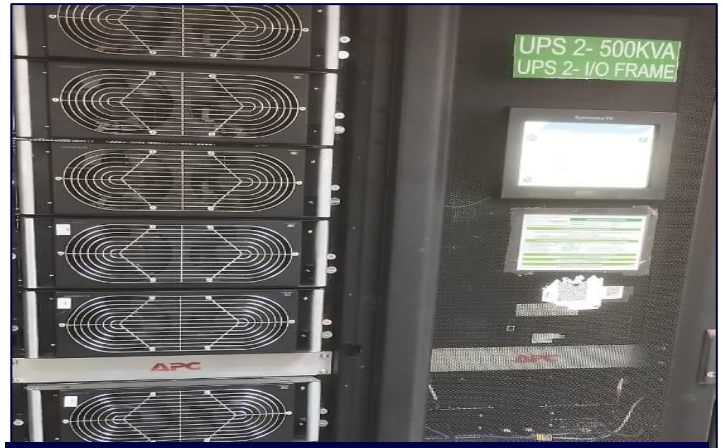
Architectural design of the building

Façade glass (SHGC – 0.36 W/m2)

Roof top solar (750 kWp)

100% - EC fan at AHU in SDB-1

100% - Water cooled chillers
(ikW – 0.65 kW/TR)



100% - Modular UPS
(Efficiency - 99%)

100% LED lights @ workstation

Awards and recognitions

Cognizant

Best Energy Saving Facility 2011 & 2012

CII
Excellent Energy Efficient Unit 2013

CII
Excellent Energy Efficient unit
Most Useful Presentation 2019

CII
– Excellent Energy Efficient Unit 2022

CII
– Energy Efficient Unit 2023

We committed in 24rd National Award for Excellence in Energy Management 2023

SBR unit installation for cooling towers water treatment

👍Completed

Lift room across ventilation system to avoid running of DX unit

👍Completed

AHU – EC fan retrofit at SDB-1

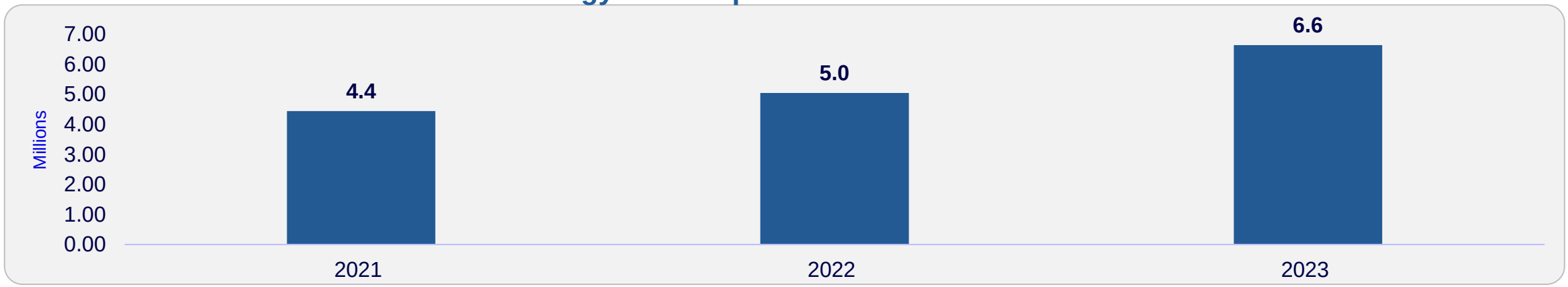
👍Completed

OCEMS system installation at STP Plant

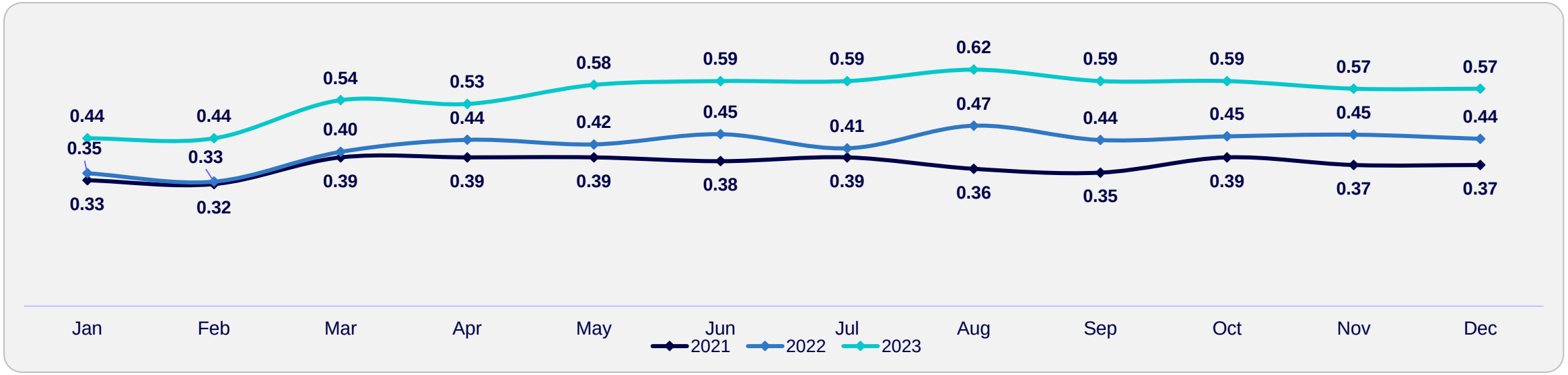
👍Completed

Energy consumption trend – 2021, 2022 & 2023

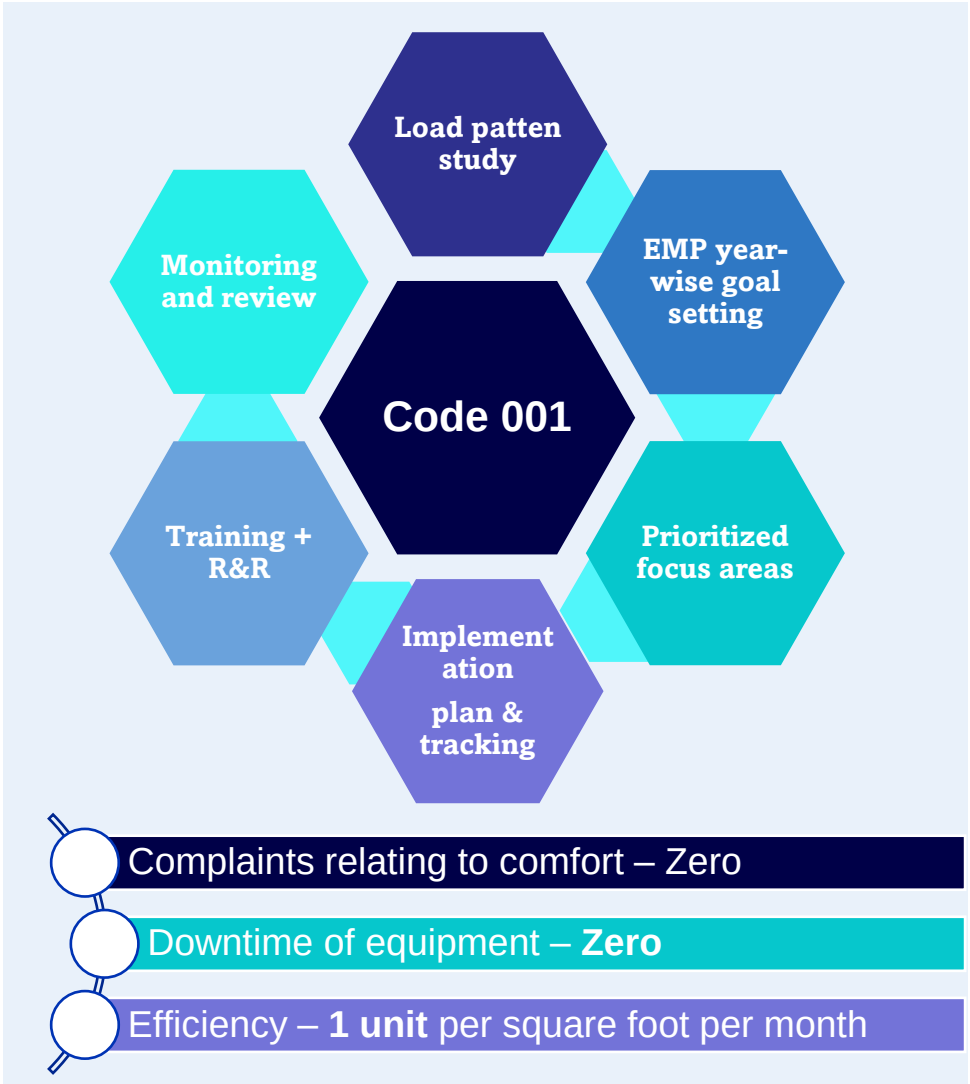
Energy consumption trend in million kWh

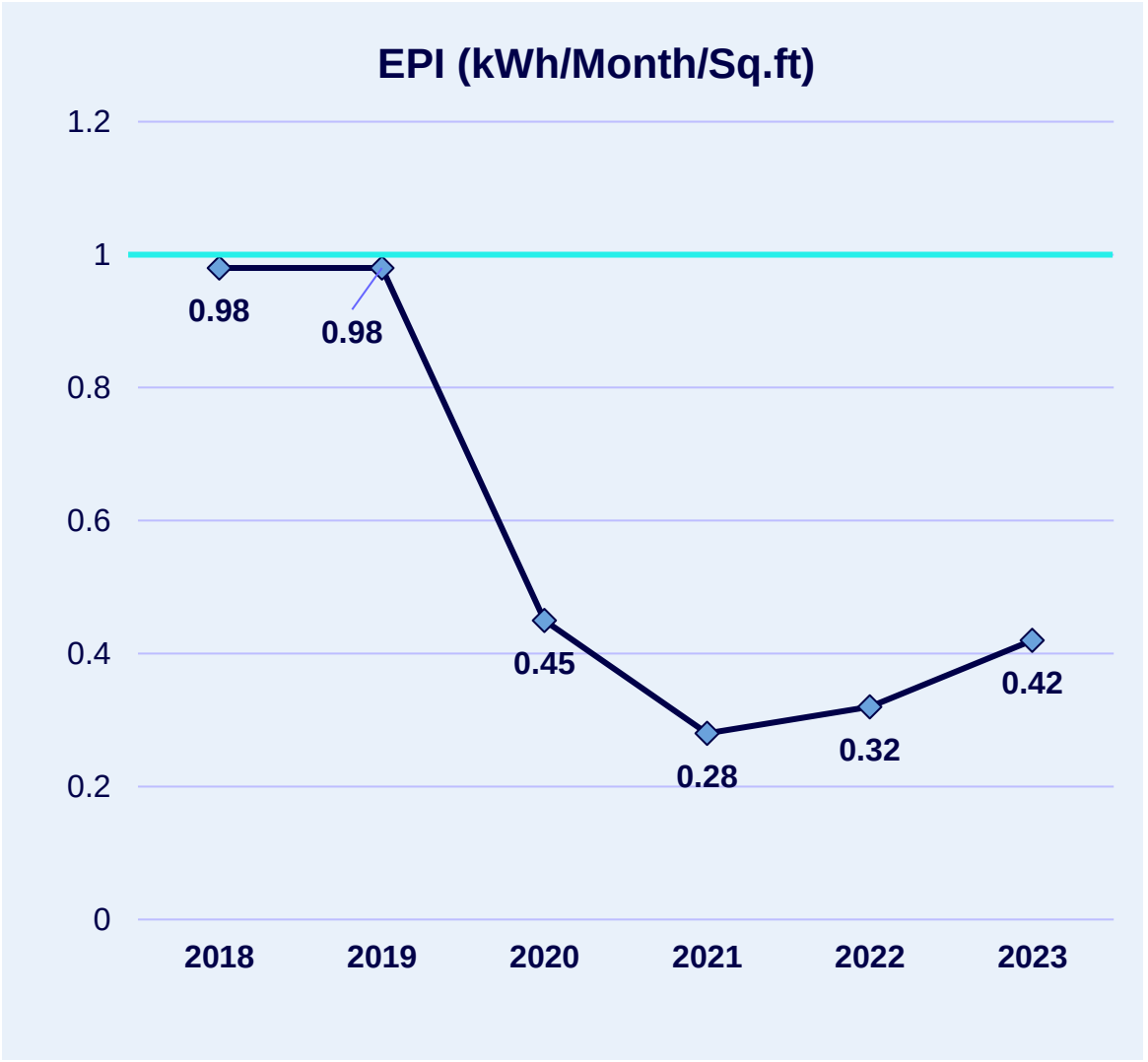


Monthly energy consumption trend last 3 years in million kWh



Cognizant's approach





***Current **EPI : 0.52** with occupancy of 60%.*

National benchmark comparison

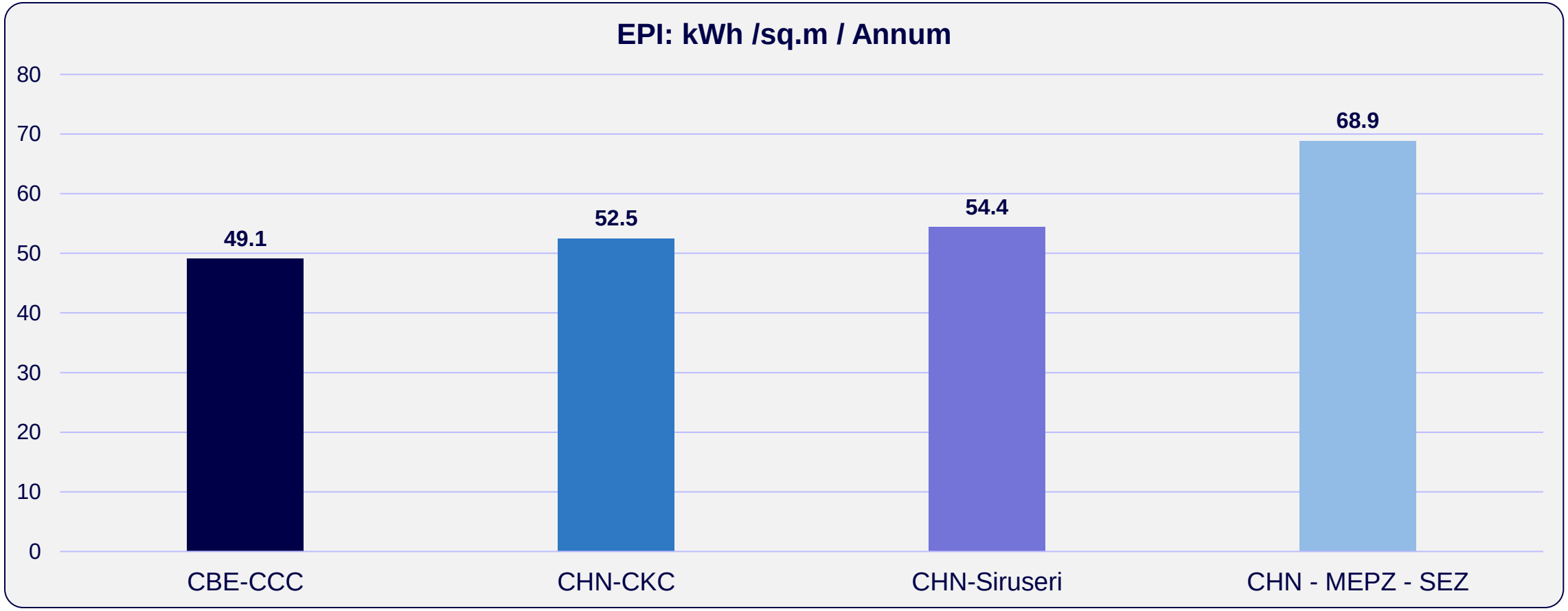
Benchmark data - BEE for buildings where air-conditioned area is 50% more than carpet area bandwidth at buildings for 3 climate zones

EPI in kWh / m^2/ 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

Coimbatore facility EPI					
Description	**2019**	**2020**	**2021**	**2022**	**2023**
EPI: kWh/m^2/year	117	54	30	34	**54**

* Solar energy excluded.

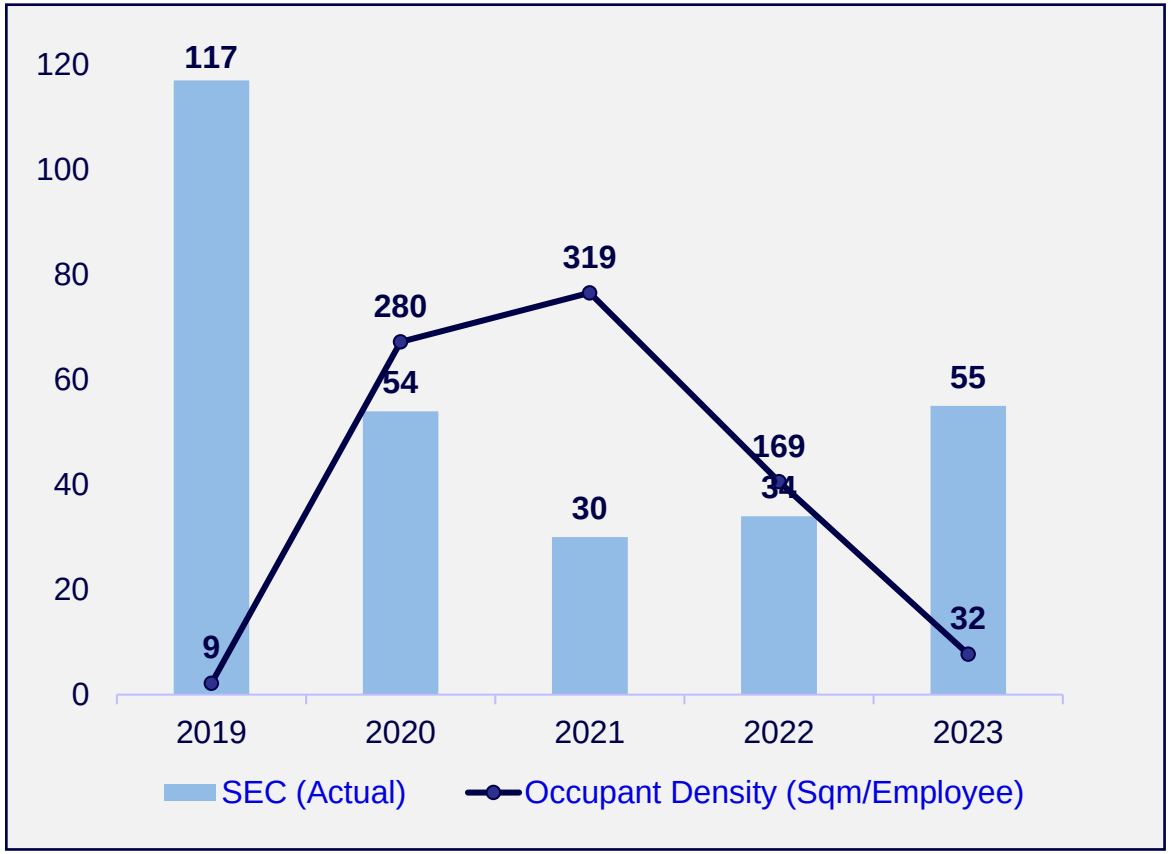
Cognizant internal benchmark comparison

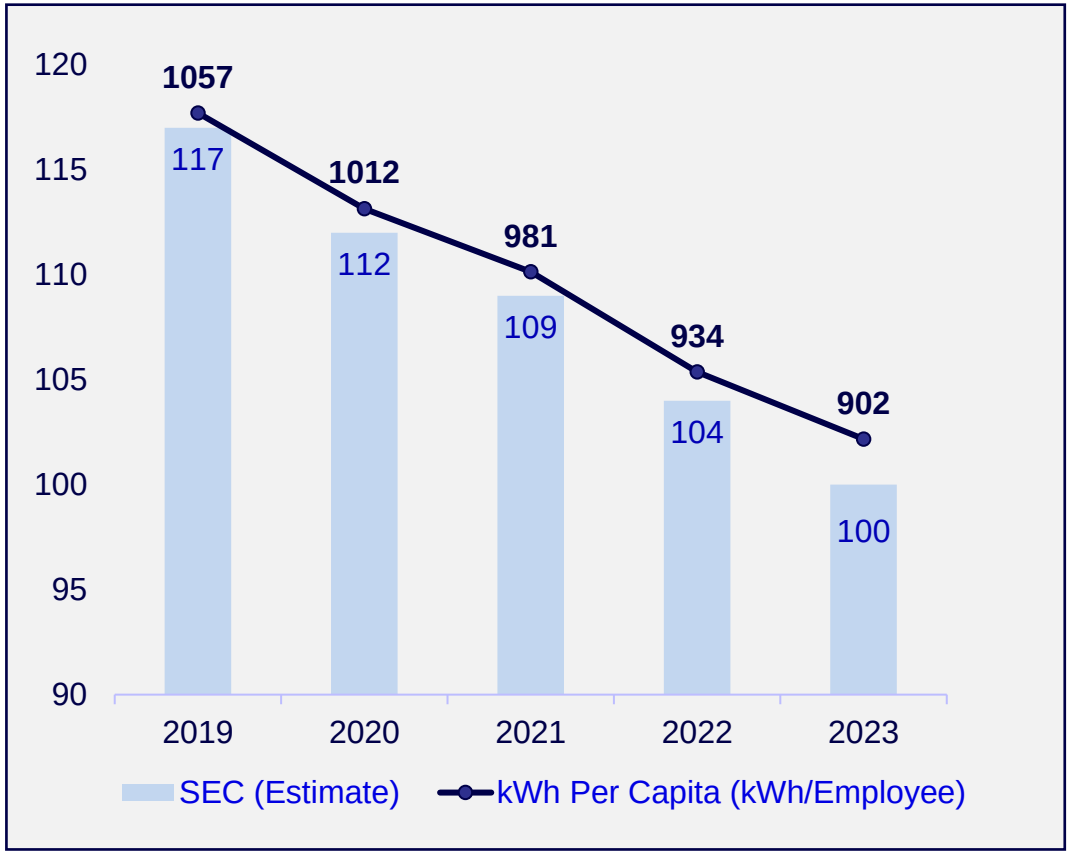


Specific energy consumption (kWh/m²/Year) – 2019 to 2023

Baseline : 2019 Consumption with Full occupancy

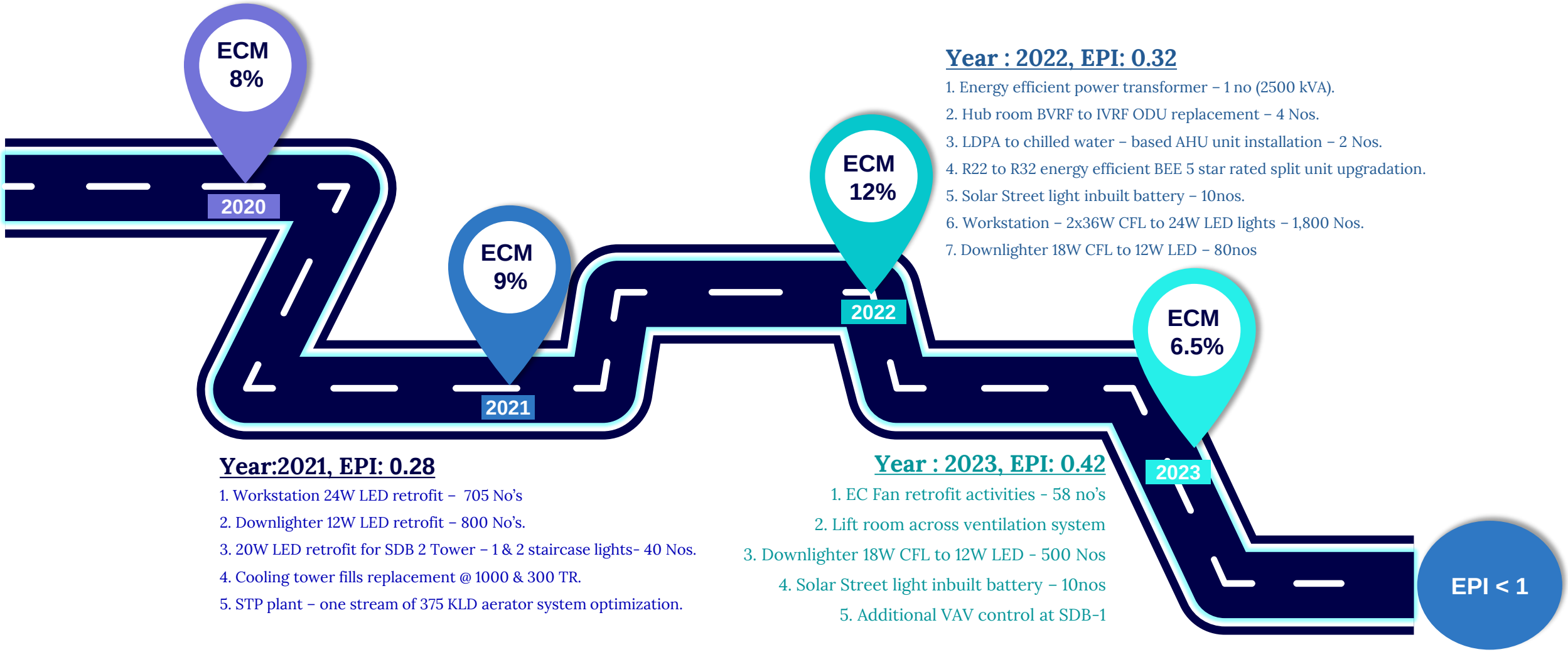
SEC (Estimate) : (Baseline Actual kWh – Cumulative Energy savings in the previous & current year kWh) / Sqm / Year





* Solar energy excluded.

Our journey on ECM



Year:2021, EPI: 0.28

1. Workstation 24W LED retrofit – 705 No's
2. Downlighter 12W LED retrofit – 800 No's.
3. 20W LED retrofit for SDB 2 Tower – 1 & 2 staircase lights- 40 Nos.
4. Cooling tower fills replacement @ 1000 & 300 TR.
5. STP plant – one stream of 375 KLD aerator system optimization.

Year : 2022, EPI: 0.32

1. Energy efficient power transformer – 1 no (2500 kVA).
2. Hub room BVRF to IVRF ODU replacement – 4 Nos.
3. LDPA to chilled water – based AHU unit installation – 2 Nos.
4. R22 to R32 energy efficient BEE 5 star rated split unit upgradation.
5. Solar Street light inbuilt battery – 10nos.
6. Workstation – 2x36W CFL to 24W LED lights – 1,800 Nos.
7. Downlighter 18W CFL to 12W LED – 80nos

Year : 2023, EPI: 0.42

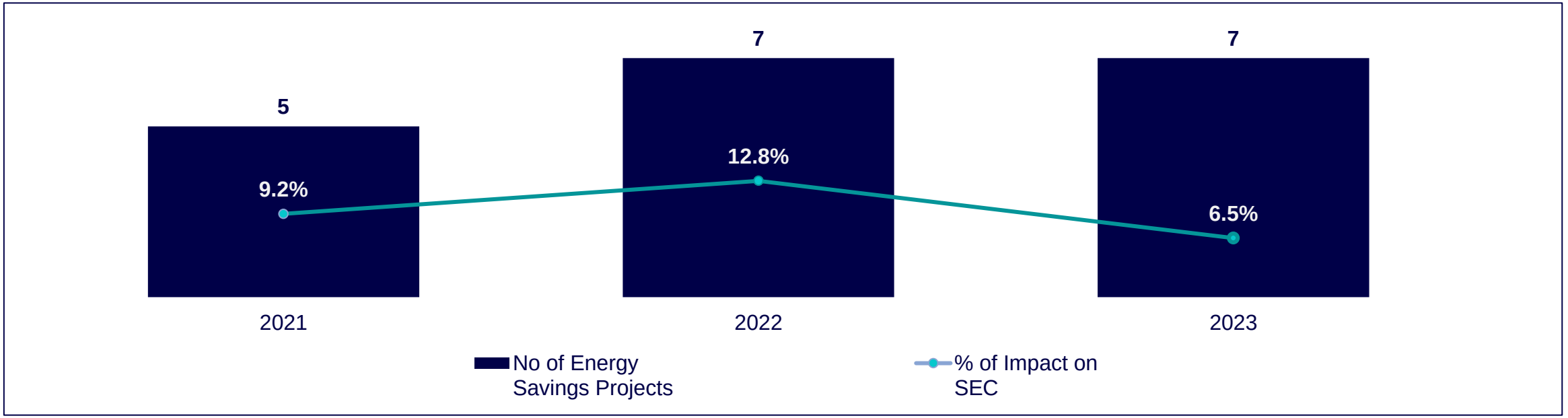
1. EC Fan retrofit activities - 58 no's
2. Lift room across ventilation system
3. Downlighter 18W CFL to 12W LED - 500 Nos
4. Solar Street light inbuilt battery – 10nos
5. Additional VAV control at SDB-1

** ECM-Energy conservation measures

Summary on ENCON projects – Investments

S. No.	Title of project	Year	Total annual energy saving (kWh)	Total annual savings (INR in million)	Investment made (INR in million)	Payback (Months)
1	New condenser coil replacement at SDB-1 chiller- 1 900TR	2020	87,060	0	4.49	0
2	LED retrofit- Workstation space - 2x36W CFL to 24W LED lights around -705 numbers	2021	15,216	1.21	1.17	12
3	LED retrofit - Downlighter 18W CFL to 12W LED – 800 numbers (Raw and EL)	2021	5,530	0.21	0.69	39
4	LED retrofit for SDB-2 Tower- 1 and 2 staircase lights (EL) from 2x18w CFL to 20W LED (surface mounted) fitting – 40 numbers	2021	1,53,504	0.08	0.09	14
5	Cooling tower fills replacement retrofit at SDB-1 1000 TR CT 3 and 300 TR CT 2	2021	1,45,152	2.14	1.05	6
6	STP plant - one stream of 375KLD aerator system optimization	2021	8,460	2.02	0	0
7	LED retrofit- Workstation space - 2x36W CFL to 24W LED lights around – 1,800 numbers	2022	2,30,124	3.45	3.45	13
8	LED retrofit - Downlighter 18W CFL to 12W LED – 80 numbers (Raw and EL)	2022	1,728	0.03	0.03	11
9	Solar LED retrofit - 35w LED streetlights to 35w LED solar base inbuilt battery – 12 numbers	2022	7,200	0.11	0.11	49
10	Energy efficient power transformer retrofit at SDB-1 substation – 1 number	2022	3,015	1.91	1.91	38
11	HVAC retrofit- Hub room BVRF to IVRF ODU replacement at SDB-1 – 4 numbers (2 X 22HP) and (2 X 12HP)	2022	98,280	1.14	1.14	20
12	HVAC retrofit - LDPA unit to chilled water-based AHU unit installation- 2 numbers (22TR LDPA to 15TR AHU) at SDB-1 GF UPS and battery room	2022	36,000	0.55	0.55	44
13	SDB-1 and café block EC fan retrofit activities - 58 numbers	2023	3,96,000	5.94	5.94	22
14	HVAC retrofit - Lift room across ventilation system and eliminated complete split -2TR x 2 numbers - 1 number of lift room	2023	1,27,02	0.15	0.29	23.46
15	LED retrofit - Downlighter 18W CFL to 12W LED - 500 numbers (Raw and EL)	2023	14,400	0.216	0.216	8
16	Solar LED retrofit - 35w LED streetlights to 35w LED solar base inbuilt battery - 10 numbers	2023	6,000	0.09	0.09	20
17	HVAC retrofit- Additional VAV control on uncontrolled direct throw at SDB-1 7F reception area	2023	1,500	0.0225	0.0225	91

Energy saving projects implemented – 2020 to 2023



Year	Number of energy savings projects	Investments (₹ INR million)	Energy Save (Million kWh)	Cost Save (₹ INR million)	Impact on SEC (%)
2021	5	3.01	0.41	5.66	9.15%
2022	7	16.22	0.64	10.93	12.77%
2023	**7**	**15.65**	**0.43**	**6.65**	**6.49%**

Innovative Project : Lift room cross ventilation system

Challenges

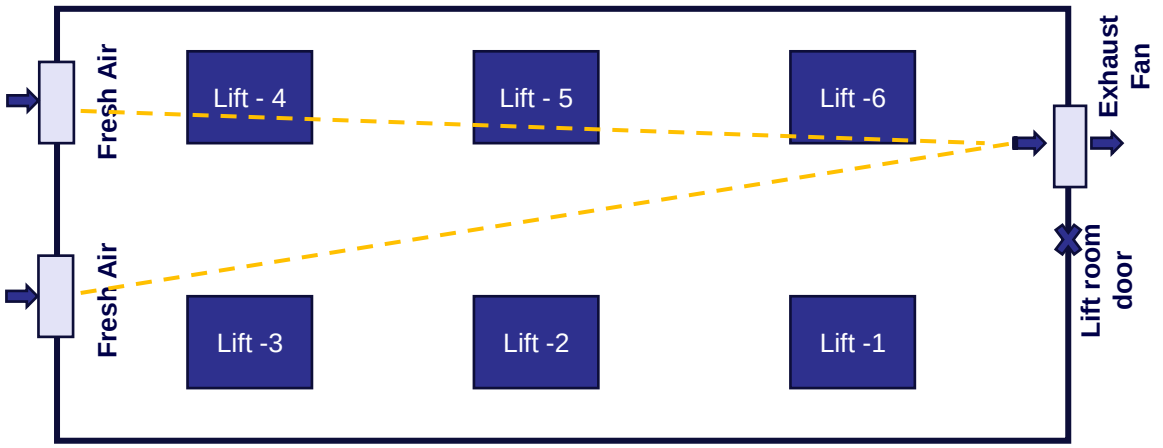
- Lift room temperature maintained by Split unit (2TR)
- Operational cost is high
- Frequent breakdowns
- R22 Refrigerant

Innovation

- Lift room temperature to be maintained by Passive Cross ventilation
- Instead of Split units, Exhaust fans are used

Split Units	2 TR – 8 No's Total - 16 TR
Operational Hour	12
Split AC consumption	= 3.4 * 16 * 12 = 119,136 kWh
Exhaust Fan consumption	17,520 kWh
Savings/Annum	101,616 kWh
Cost Saving / Annum	1.5 Million INR
Investment	1.5 Million INR

Overall layout



Lift room Cross ventilation system

Major Project: EC Fan Retrofit at workstation AHU's

Objective

Conversion of Normal AHU blower into EC fan blower with direct driven along with VFD controller

Challenges

Looses in CFM delivery, V-Belt energy, Motor winding. Motor failure & High operational Cost

Target

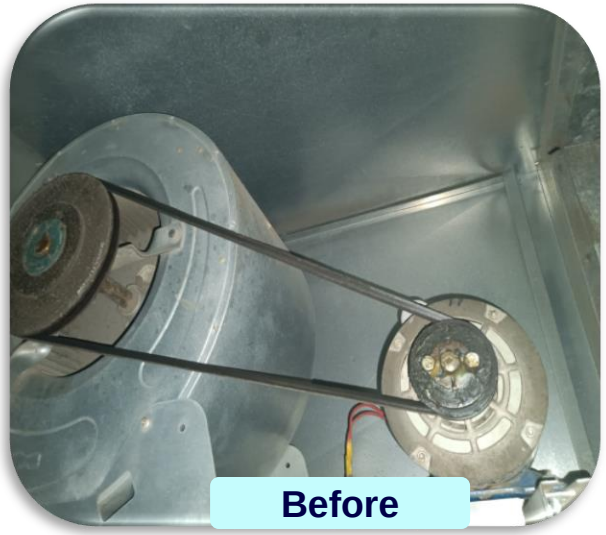
High efficiency, Energy savings & Low Maintenance cost

Noise and vibration reduction

Growth

Energy Savings – 3,96,000kWh

Cost Savings – 59 Lakhs INR



AHU Locations	SDB1 & Food Court
Retrofit Quantity	58
Investment	19 Million INR
Savings/Month	33,000 kWh
Savings/Annum	396000 kWh
Saving/Annum	5.9 Million INR

Major Project: HVAC Retrofit - BVRF to IVRF Energy efficient Replacement

Objective

Conversion of BVRF to IVRF

Energy efficient ODU replacement

Process

4 nos of

2 X 22 HP
&
2 X 12 HP

Target

- Avoid of breakdown
- Highly efficient inverter compressors with 0.8 ikW/TR
- CO_2 reduction on refrigerated avoidances.

Growth

- Energy savings: **98,280 kWh**
- Cost savings: **11.59 Lakhs**

Before

After

BVRF to IVRF - Energy savings					
Sl No	Old BVRF Capacity HP	New IVRF Capacity HP	Power consumption (Before)	Power consumption (After)	Total Power Savings kWh
1	2 X 21	2 X 22	240	95	145
2	2 X 12	2 X 12	220	92	128
3	Power Savings/Day				273
4	Achieved Power Savings/Annum				99,645
5	Cost per month (Rs.11.64/unit)				1,159,868
6	Total Cost of replacement				1,807,128
7	**ROI in years**				**1.56**

Major Project:

LED retrofit - Replacement of CFL into LED lamps to reduce energy conservation

Objective:

Energy consumption reduction by converting CFL into LED lamps.

Benefits:

- Reduced carbon footprints
- Reduction in E-waste generation for next 5 years.
- Lower energy costs & improved efficiency

Over all savings:

Approximate Avg. energy saving per year– ***1.44 Lakhs kWh***

PO Screen Snap

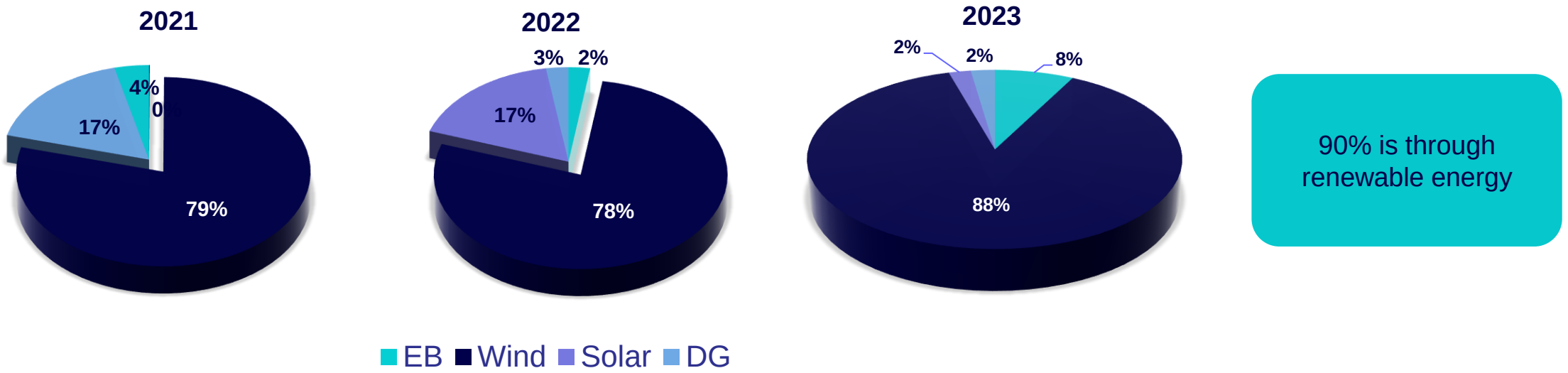
C2846-V4-R80 31-Mar-23

LINE ITEM DETAILS (2 LINE ITEMS)

NO.	DESCRIPTION	PART NUMBER	QTY
1	SUPPLY OF 13WLED CIRCULAR RECESSED CEILING DOWN LIGHT, CCT-3000/4000/5700/6 500 K	Part no 20	200 each
2	INSTALLATION OF 13W LED CIRCULAR SHAPE RECESSED CEILING DOWN LIGHT	Part no 53	200 each

Sl.no	Energy savings activities description	Qty	savings per Month in kWh	savings per Annum in kWh	cost per unit	Cost savings per year (Rs in Million)	Investment (Rs in INR)
1	LED Retrofit - Downlighter 18 W CFL to 12W LED - 500Nos (Raw and EL)	500 nos	1200	14400	15	216,000	243,200

Utilization of renewable energy sources



90% is through renewable energy

Year	EB	Wind (Offsite)	Solar (Onsite)	DG	Total	%of Renewable
2021	3,521	35,12,227	7,57,263	1,68,137	44,41,148	96%
2022	1,19,760	39,29,634	8,71,594	1,24,390	50,45,378	95%
2023	5,04,470	58,42,429	1,40,430	1,52,480	66,39,809	90%

Offsite wind wheeling

Onsite rooftop solar ($750\ kW_p$)

Utilization of renewable energy sources – 2021, 2023 & 2023

Onsite renewable energy sources					
Year	**Source**	**Installed capacity (in MW)**	**Capacity addition (MW) after FY 2021**	**Total Generation (million kWh)**	**Share % w.r.t to Overall energy consumption**
2021	Solar	0.75	0	0.76	17%
2022	Solar	0.75	0	0.87	17%
2023	Solar	0.75	0	0.14	2%

Offsite renewable energy sources				
Year	**Source (Solar, wind, etc.,)**	**Total offsite installed capacity (MW)**	**Consumption by the company (million kWh)**	**Share % w.r.t to overall energy consumption**
2021	Wind	256.85	3.51	10%
2022	Wind	256.85	3.92	12%
2023	Wind	256.85	5.84	14%

- Solar Bill to operate model, installed capacity of **750 kWp**
- Third-party purchase under group captive agreement.
- Installed capacity: **256.85 MW.**
- Total wind energy contracted quantum: **525 lakhs kWh**.

Waste management

E-waste
disposed through authorized recycler.

Food waste
processed through OWC and utilized as manure.

Paper waste
processed through ITC.

STP plant
recycled water utilized for WC flushing, gardening.

Ban on single-use plastic as per TNPCB.

Batteries disposed through authorized recycler.

Recycle Certificate


RAAC
'ALAGANA KOVAI'
स्वच्छ भारत
एक कदम स्वच्छता की ओर
Enduring Value
An ITC Initiative
WOW
WELLBEING OUT OF WASTE

Certificate of Appreciation

ITC Limited - Paperboards & Specialty Papers Division

Sincerely Thank

COGNIZANT TECHNOLOGY SOLUTIONS INDIA PRIVATE LIMITED - COIMBATORE

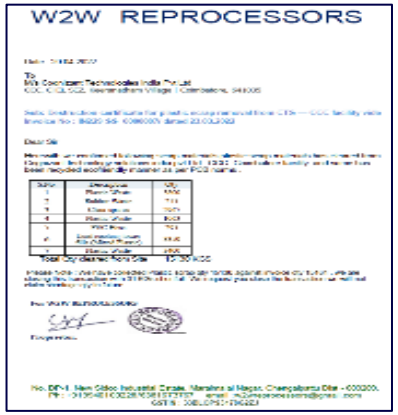
For partnering with WOW-Wellbeing Out of Waste, a Nationwide Recycling Initiative of ITC and Contributing 4560 Kgs of dry recyclable waste for recycling during FY 2023- 2024

We look forward to your continued support in making India
SWACHH & GREEN
RECYCLE MORE & PROTECT ENVIRONMENT

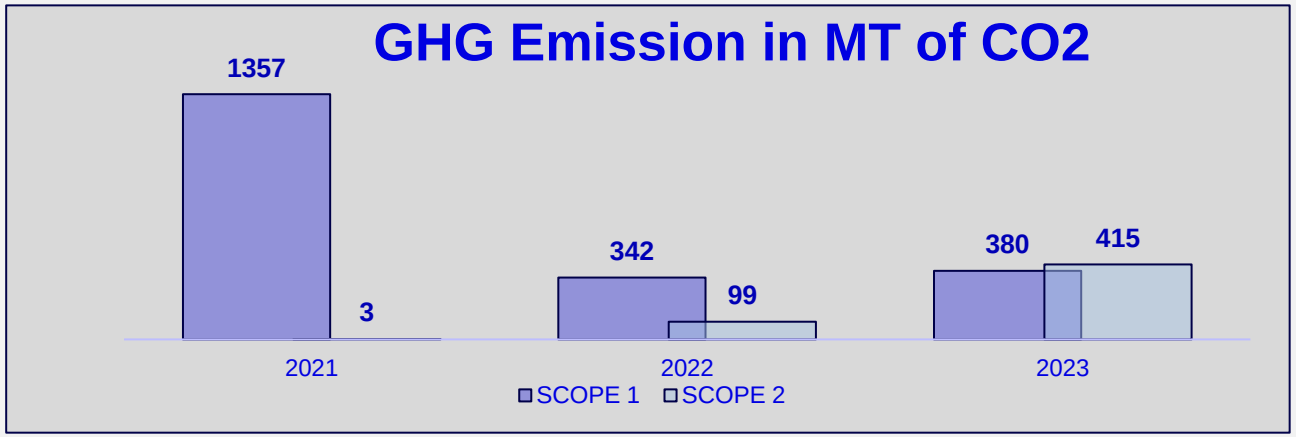
Sib Sankar Bandyopadhyay
Executive Vice President - HR & CSR
ITC Limited
Paperboards & Specialty Papers Division


TEKNO THERM INDUSTRIES

BIO-MEDICAL WASTE MANAGEMENT


W2W REPROCESSORS

GHG emission trend



GHG emission:

- Cognizant will source 100% renewable energy by 2026.
- Absolute emissions reduction by 50% in 2030.
- Absolute emissions reduction by 90% in 2040.

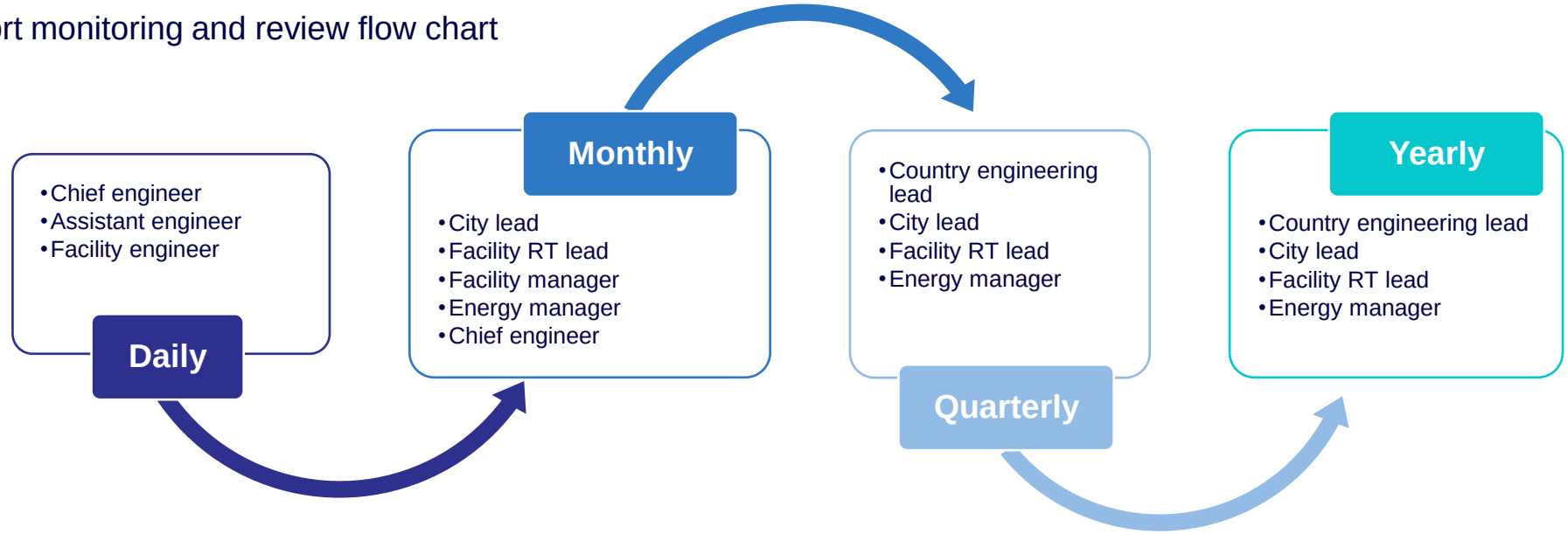
	Refrigerant							Diesel	LPG	Electricity	Scope 1	Scope 2
Sources	R22	R134a	R407C	R410A	R125	R32	R404A	Diesel	LPG consumption	Grid unit		
UOM	kg	kg	kg	kg	kg	kg	kg	liter	kg	kWh	Ton of CO2	Ton of CO2
2021	9.22	620	30	155.5	0	0	0	69,825	564	3521	1,471.4	2.85
2022	9.5	0	10.5	76.8	0	0	0	57,700	2,612	1,19,760	359.6	97.01
2023	**5**	**0**	**0**	**104**	**0**	**0.8**	**0**	**53,681**	**9,738**	**5,04,470**	**380.8**	**415.18**

Indoor air quality

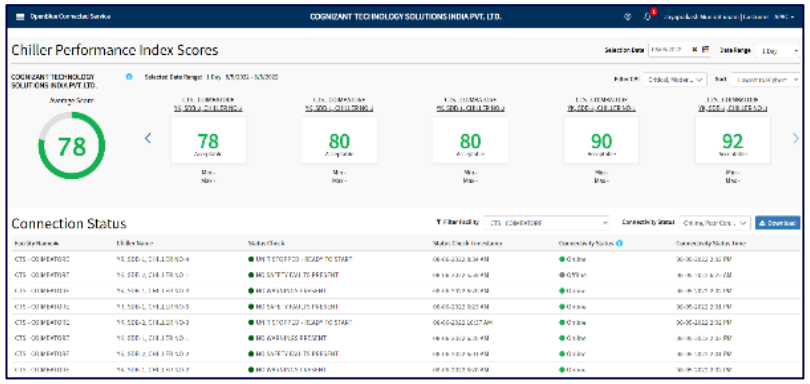
Type of system installed	Investment (INR in millions)	Year of installation	Benefits achieved	Parameters monitoring (O2, CO2, PM 2.5, PM 10, etc.,)	Type of system installed
CO2 monitoring for our premises	**0.245**	Through third-party vendor	Good indoor air quality maintained to ensure EHS in office premises	Temperature, CO2, CO, O2, RPM, TVOC and RH	CO2 monitoring for our premises
Indoor air quality monitoring system	**0.277**	Through third-party vendor	Good indoor air quality maintained to ensure EHS in office premises	Temperature, CO2, CO, O2, RPM, TVOC and RH	Indoor air quality monitoring system

Measuring, monitoring and training

Energy report monitoring and review flow chart

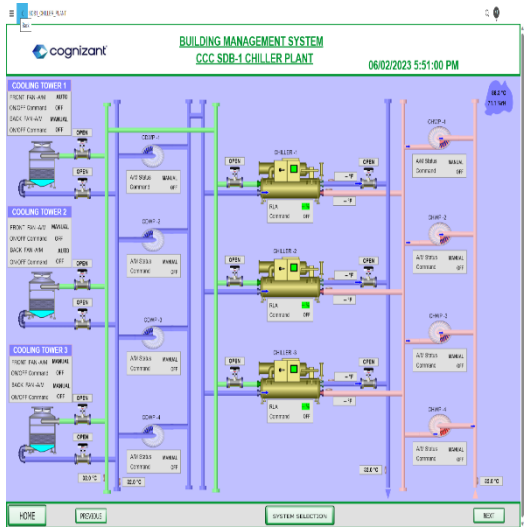


Energy report monitoring and review flow chart



Best practices

Digitalization



Digitalization

Digitalization

Power quality improvement

- Live monitoring on critical systems.
- Energy savings through automation.

IGBC – LEED Certificate

Confederation of Indian Industry
CII-Sohrabji Godrej Green Business Centre

Indian Green Building Council (IGBC)

hereby certifies that

Cognizant Green Campus
Coimbatore

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

LEED India for New Construction Gold
November 2009

C N Raghavendran
Chairman, LEED India

Dr Prem C Jain
Chairman, IGBC

Jamshyd N Godrej
Chairman, CII-Godrej GBC

◀ SDB - 1

SDB - 2 ▶

Confederation of Indian Industry

Indian Green Building Council (IGBC)

hereby certifies that

Cognizant Green Campus Phase II
Coimbatore

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

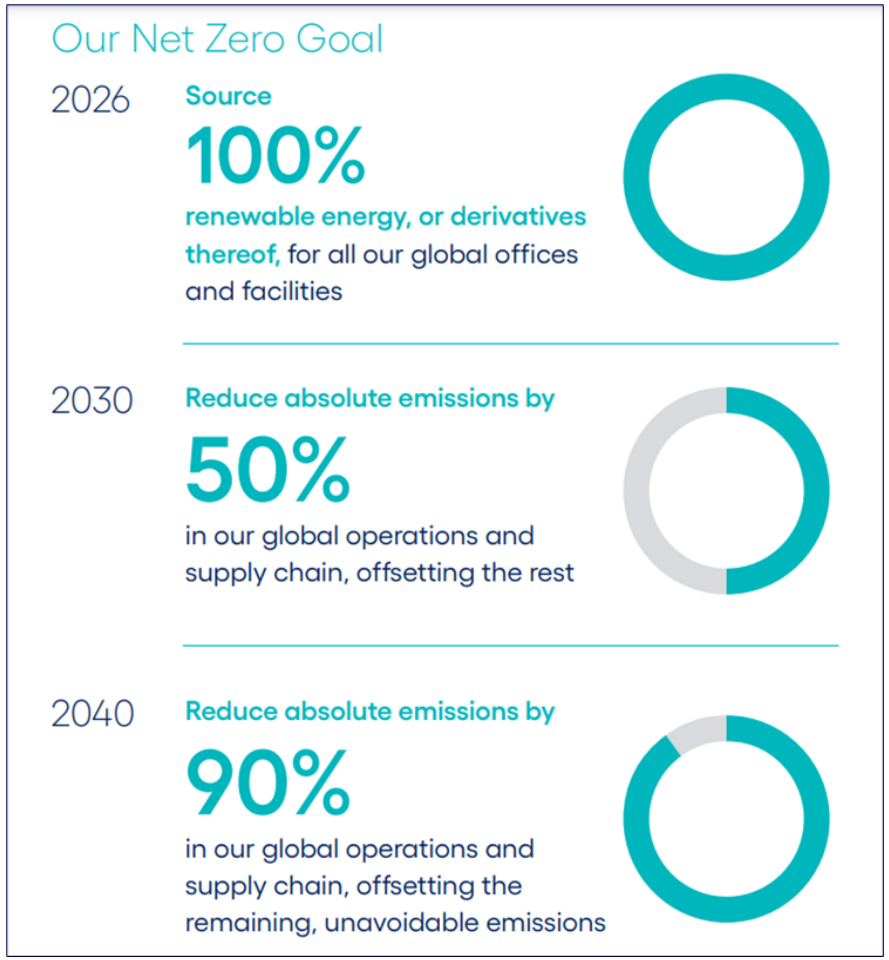
LEED 2011 for India Core & Shell Gold
July 2014

C N Raghavendran
Chairman, LEED India

Dr Prem C Jain
Chairman, IGBC

S Raghupathy
Executive Director, CII-Godrej GBC

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.

Way forward 2024 to 2025


SBR unit – Cooling tower water treatment -


HVAC Retrofit - BVRF to IVRF ODU replacement -


HVAC Retrofit – Lift room cross ventilation -


Hybrid Solar based battery inbuilt LED streetlight -


AHU – EC Fan Retrofit at SDB-2 -


Higher efficiency HVAC pump retrofit -


Emission control device -


Electrical vehicle charging station -


Solar Net feed-in upgradation -

Investment towards energy saving projects in 2024	
No of energy savings project in 2024	Investment (Rs in Million)
7	**31**

Thank you

S. Sudhakar – Senior Manager

Jayaprakash. M – Chief Engineer