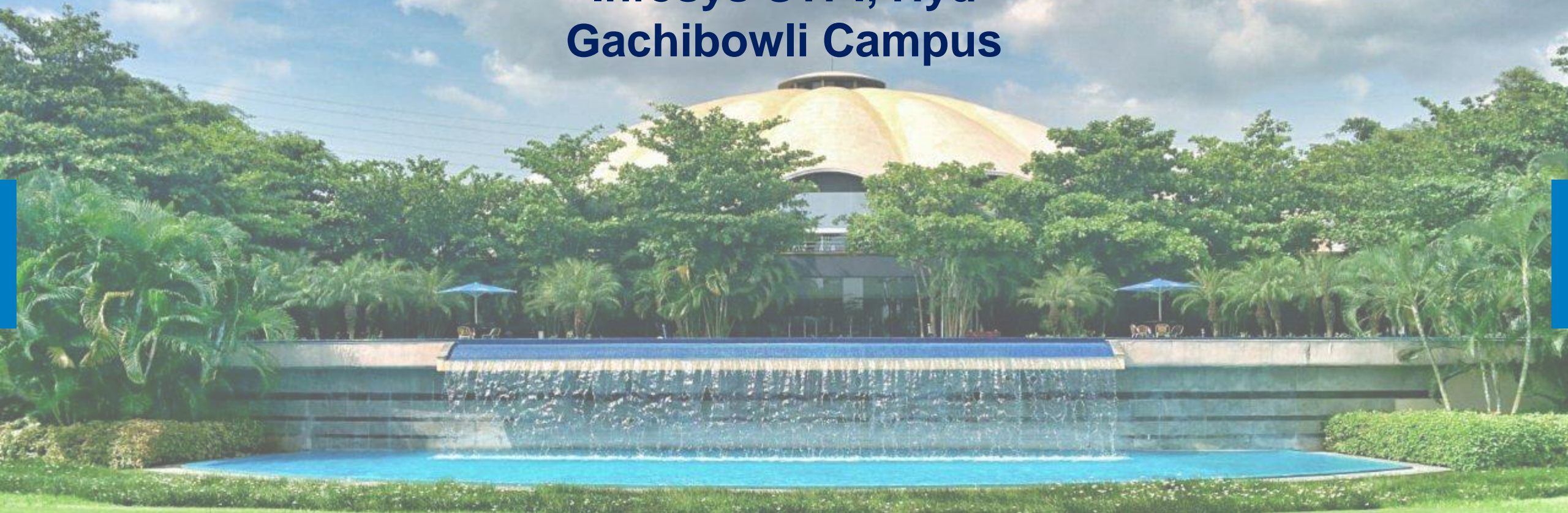# CII 25th National Award for Excellence in Energy Management 2024
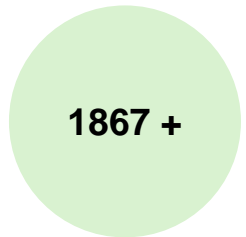
Infosys STPI, Hyd
Gachibowli Campus

Venkatesh Sangam (Regional Head Facilities)
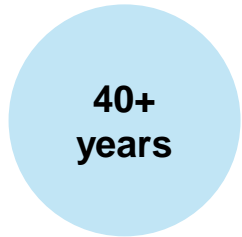
P.V Satyanarayana (Senior Manager Facilities)

K Vikendar Reddy (Senior Associate Manager Facilities)

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COMPANY OVERVIEW

1867 +	**40+ years**	**31532 lakh**	**56 +**	**US$ 18.6 bn**	**7**
CUSTOMERS	EXPERIENCE	EMPLOYEES	BRANCHES	REVENUE	PRODUCTS
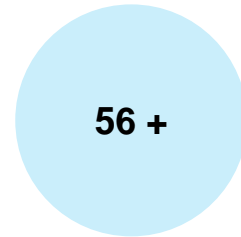
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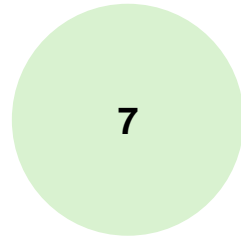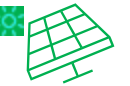
✓ The campus size 50 acres with world class infrastructure.

Few salient features are:

✓ 6 Software Development Buildings with 12921 seats

✓ 2 Food courts   : 2400 seats

✓ Guest house   : 419 rooms

✓ Training facility   : 800 seats (classrooms, labs)

✓ Landscape   : 29 acres

✓ Car parking   : 1022

✓ Bike parking   : 3105

✓ Water storage   : 1.8 Million liters

✓ STP   : 600 KLD

✓ UPS   : 2706 kVA

✓ HVAC system   : 3775 TR

✓ Climate Zone   : Hot and Dry

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Utilities Overview

Description	Specification	
Substation	➢ EB Demand (CMD) : 4300 kVA ➢ Transformers Capacity : 23000 kVA	
Diesel Generators	➢ Total Capacity : 10000 kVA	
Roof Top Solar	➢ Total Capacity : 988.34 kWp	
UPS	➢ Total Capacity : 3026 kVA	
Chillers	➢ Total Capacity : 3775 TR	
High Speed Diesel (HSD) Storage	➢ Capacity : 104 kL	
Rainwater Injection wells	➢ Total : 8 No's	
UGR(Under ground reservoir)	➢ Capacity : 1750 kL	

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Architectural design of the building: Agile flooring conversion

Workplace Transformation Initiative is taken up to transform the interiors, workspace of existing buildings which are constructed in 2002 as per the then design requirements. The primary purpose of the project is to provide enhanced workspace with innovative and creative interiors, different types of workspaces for employees to work, enhances indoor air quality by providing fresh air into floors, enhancing the building Fire and Safety standards.

- Fresh air supply into floors – Enhances IAQ
- Complying to NBC 2016 – Enhanced Fire & Life Safety features

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Energy consumption overview FY 21-22 to FY 23-24

Energy Consumption (million kwh): FY2021-22: 74, FY2022-23: 89, FY2023-24: 108

Energy Performance Index (EPI) (kWh/m²/Year): FY2021-22: 38, FY2022-23: 45, FY2023-24: 55

Pie chart: FY2021-22: 7438294, FY2022-23: 8871253, FY2023-24: 10713976
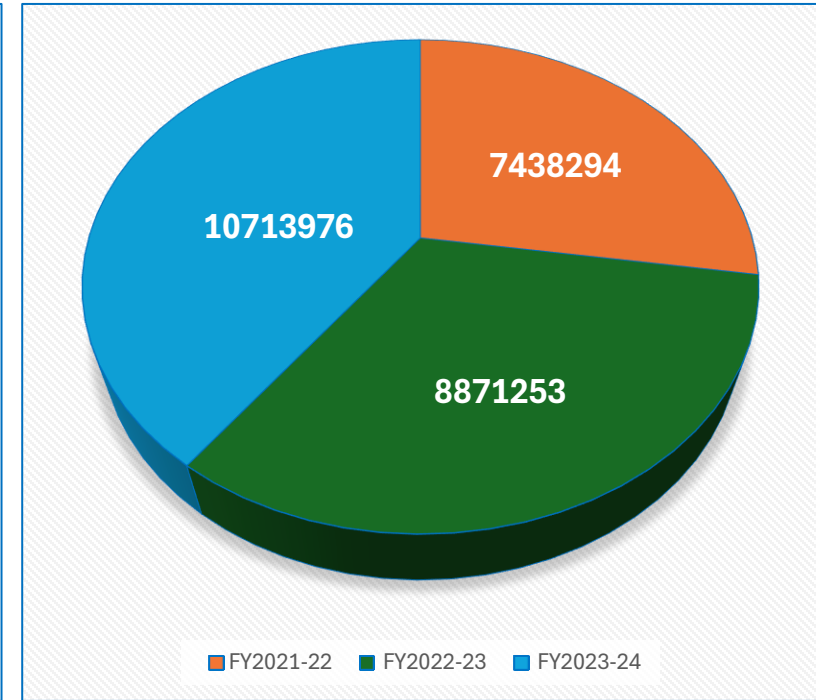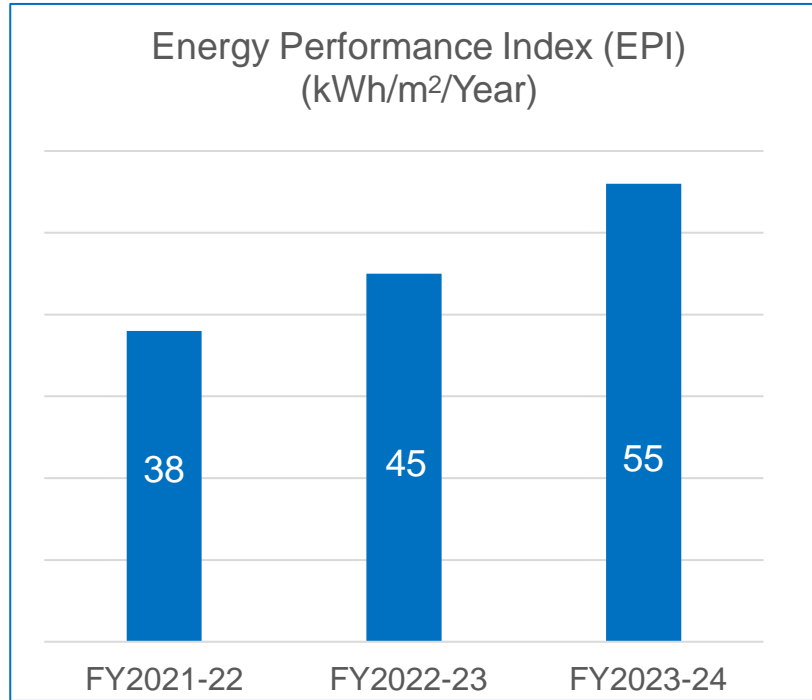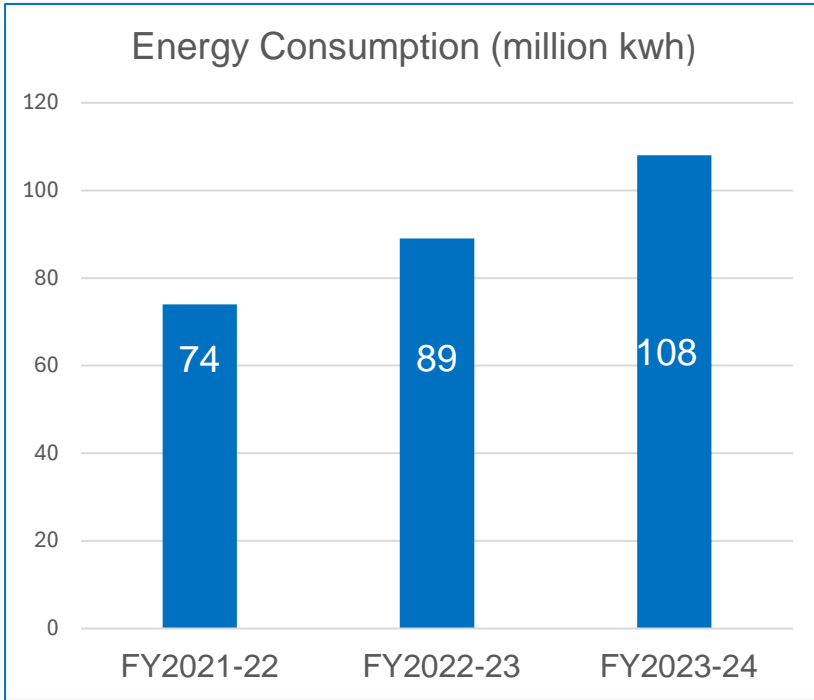
Year	EB(kWh)	DG(kWh)	Roof top Solar (kWh)	Open Access Solar (kWh)	Total (kWh)	Area (m²)	EPI(kWh/(m2)/Year)	Design Occupancy Density (m2/Employee)	Occupancy (Employee Avg Count per Day)	Reason for variation
FY2021-22	3,189,987	66,683	1,227,361	2,954,263	7,438,294	195,167	38.11	1446	135	
FY2022-23	4,394,460	40,758	1,282,540	3,153,495	8,871,253	195,167	45.45	232	840	Employee RTO is Increased
FY2023-24	6,641,440	110,220	1,180,000	2,767,335	10,713,976	195,167	54.90	43	4571	

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Benchmark

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

✓Hyderabad Climate Zone- Hot and Dry

EPI in kWh / m2/ 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**
Infosys Gachibowli campus EPI			
Performance Indicator	FY 2021-22	FY 2022-23	FY 2023-24
EPI: kWh/m^2/year	**38.11**	**45.45**	**55.53**

EPI 55.53

*Source - BEE IND.GOV.IN

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List of Major Encon project planned in FY 2024-2025

- PUE Enhancement in Building 18 3rd floor Datacenter and Ground floor data center.

    ❖Investment- 3.5 Million
    ❖Energy saving 0.131 million kWh/annum

- Lighting Automation in MLCP , MLVP& Buildings.

    ❖Investment 0.95 million
    ❖Energy saving 0.1 million kWh/annum

Encon Energy Saving projects implemented in last three years

Year	No of energy saving projects	Investment	Electrical energy Savings(kWh)
FY2021-22	1	269	0.89
FY2022-23	4	194.68	1.39
FY2023-24	1	34.90	0.33

Electrical energy Savings(million kWh)

Investment INR million
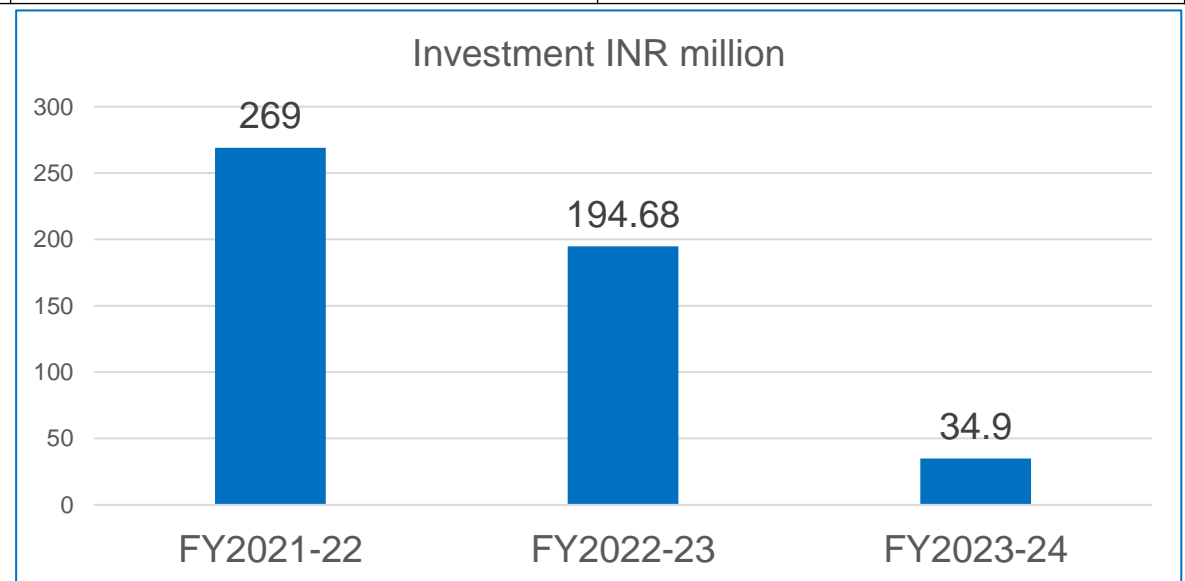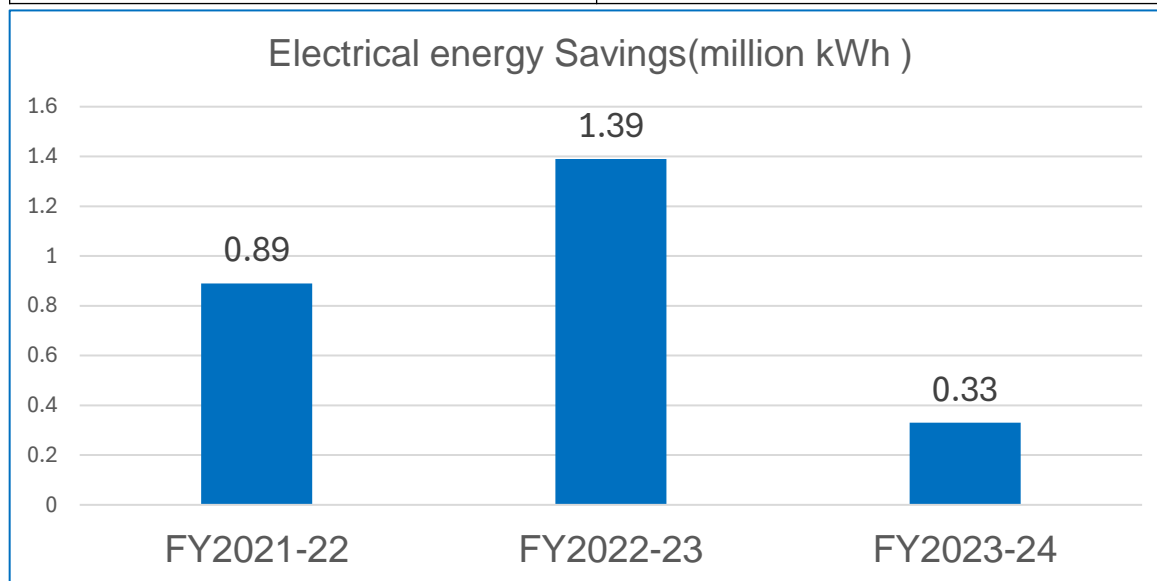
Encon Projects FY 2021-22 to FY 2022-23

S.No	Title of project	FY	Total annual energy saving (million kWh)	Total annual savings (₹ INR million)	Investment made (₹ INR million)
1	Hybrid working conversion	2021-22	0.89	9.11	269.00
2	Workplace transformation - Lighting	2022-23	0.15	1.60	181.00
3	DX to chilled water conversion in Critical rooms	2022-23	0.34	3.47	10.68
4	ODC area DX to chilled water AHU duct extension	2022-23	0.91	9.25	0
5	Workplace transformation – Team Calls	2022-23	0.0025	0.026	0
6	ECC rooms DX to Chilled water conversion	2023-24	0.33	3.43	34.90

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Encon 1: Hybrid working conversion

Objective

Hybrid working conversion

Process

- Laptops issued to employes

Target

- Desktop to Laptop conversion

Result

- Energy savings: **8,97,130 kWh**
- Cost savings: **INR 91,05,870**

Sl.No	Description	UOM	Qty
Energy savings calculation			
1	By replacing desktop savings	kW	377
2	Desktop running Hours per Day	Hrs/Day	9
3	Energy savings per day	kWh/Day	3,393
4	Energy savings per month	kWh	74,646
5	**Energy savings per Year**	**kWh**	**8,95,752**
6	**Cost savings per annum (Rs.10.15)**	**INR**	**9,091,883**

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Encon 2: Workplace transformation - Lighting

Objective

Workplace Transformation

Process

- Task lighting.
- Workstation floor design layout has been changed to get natural lighting.

Target

Reduction in Lighting Load

Result

- Energy savings: **158400 kWh**
- Cost savings: **INR 1,607760**

Energy savings calculation			
Sl.No	Description	UOM	Qty
1	Lighting load reduced for 5 SDB's	kW	50
2	Lighting operational Hours per Day	Hrs/Day	12
3	Energy savings per day	kWh/Day	600
4	Energy savings per month	kWh	13,200
5	**Energy savings per Year**	**kWh**	**1,58,400**
6	**Cost savings per annum (Rs.10.15)**	**INR**	**16,07,760**

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Encon 3: DX to chilled water conversion in Critical rooms

Objective

DX to Chilled water conversion

Process

- Effective utilization of Centralized chiller plant

Target

- Reduction in TR load

Result

- Energy savings: **3,42,576 kWh**
- Cost savings: **INR 34,77,146**

	Energy savings calculation		
Sl.No	Description	UOM	Qty
1	DX to chilled water conversion	kW	39.65
2	Chilled water operational Hours per Day	Hrs/Day	24
3	Energy savings per day	kWh/Day	951.6
4	Energy savings per month	kWh	28,548.00
5	**Energy savings per Year**	**kWh**	**3,42,576**
6	**Cost savings per annum (Rs.10.15)**	**INR**	**34,77,146.4**

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Encon 4: ODC area DX to chilled water AHU duct extension

Objective

DX to Chilled water conversion

Process

Effective utilization of Centralized chiller plant.

Target

- Reduction in TR load

Result

- Energy savings: **9,11,484 kWh**
- Cost savings: **INR 92,51,562**

	Energy savings calculation		
Sl.No	Description	UOM	Qty
1	DX to chilled water conversion	kW	434.04
2	Chilled water operational Hours per Day	Hrs/Day	12
3	Energy savings per day	kWh/Day	3,645
4	Energy savings per month	kWh	76,545
5	**Energy savings per Year**	**kWh**	**9,11,484**
6	**Cost savings per annum (Rs.10.15)**	**INR**	**92,51,562**

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Encon 5: Workplace transformation – Team Calls

Objective

Workplace transformation

Process

Microsoft Teams call implemented with providing Laptops

Target

• Disconnection of PSTN lines

Result

• Energy savings: **2,592 kWh**
• Cost savings: **INR 26,308**

Sl.No	Description	UOM	Qty
	Energy savings calculation		
1	EPABX including 5 No of LTU 4000 extensions removed	kW	0.3
2	EPABX system operational Hours per Day	Hrs/Day	24
3	Energy savings per day	kWh/Day	7.2
4	Energy savings per month	kWh	216
5	**Energy savings per Year**	**kWh**	**2,592**
6	**Cost savings per annum (Rs.10.15)**	**INR**	**26,308**

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Encon 6: DX to Chilled water conversion in Employee Care Center

Objective

DX to Chilled water conversion

Process

Effective utilization of Centralized chiller plant

Target

- Reduction in TR load

Result

- Energy savings: **3,37,786 kWh**
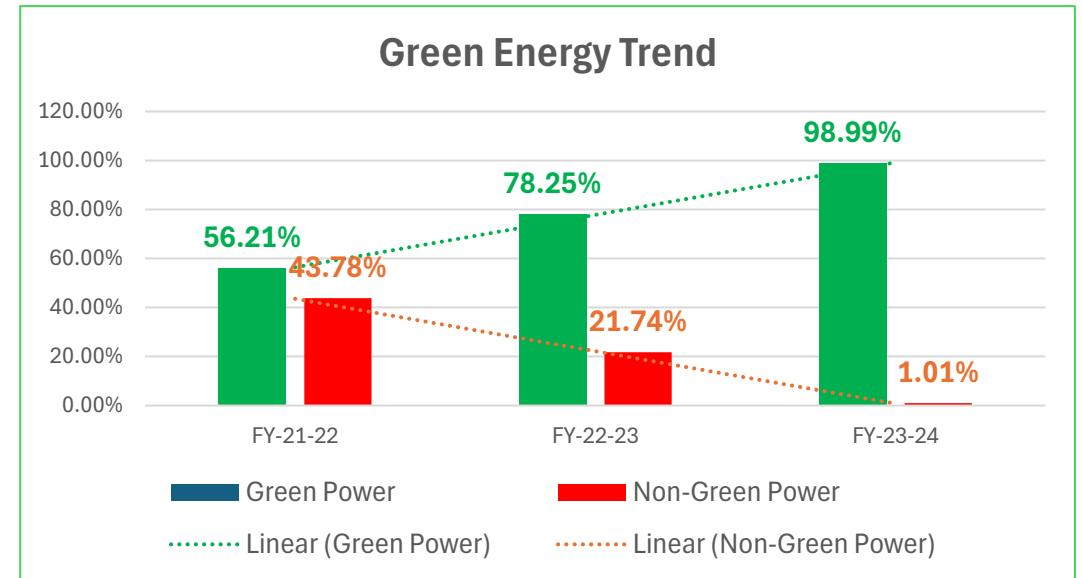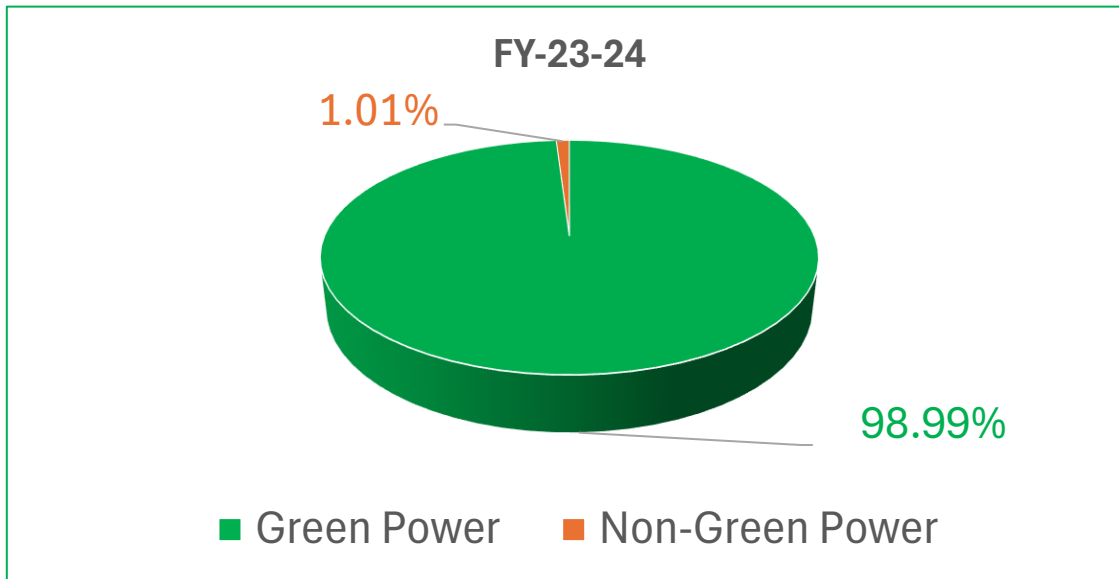- Cost savings: **INR 34,28,527**

	Energy savings calculation		
Sl.No	Description	UOM	Qty
1	HVAC load reduced in ECC	kW	192
2	Operational Hours per Day	Hrs/Day	12
3	Energy savings per day	kWh/Day	938
4	Energy savings per month	kWh	28,148
5	**Energy savings per Year (Considered 40% occupancy)**	**kWh**	**3,37,786**
6	**Cost savings per annum (Rs.10.15)**	**INR**	**34,28,527**

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Utilization of Renewable Energy Sources

Onsite

Year	Source (Solar, Wind, etc.,)	Installed capacity (In MW)	Capacity addition (MW) after FY 2021	Total Generation (million kWh)	Share % w.r.t to overall energy consumption	Campus Total Consumption (kWh)
FY 2021-22	Solar	0.988	NA	12,27,361	16.50	74,38,294
FY 2022-23	Solar	0.988	NA	12,82,540	14.46	88,71,253
FY 2023-24	Solar	0.988	NA	11,80,000	11.01	1,07,13,976

Offsite

Year	Source (Solar, Wind, etc.,)	Total offsite Installed capacity (MW)	Capacity addition (MW) after FY 2021	% of Offsite generation wheeled for STPI Campus	Total Generation (million kWh)	Share % w.r.t to overall energy consumption	Campus Total Consumption (kWh)
FY 2021-22	Solar	6.64	NA	33.33	29,54,263	39.71	74,38,294
FY 2022-23	Solar	6.64	NA	33.33	56,68,105	63.89	88,71,253
	Green power	TSSPDCL	NA				
FY 2023-24	Solar	6.64	NA	33.33	94,10,000	87.95	10,71,3976
	Green power	TSSPDCL	NA				

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Green Energy Target-Gachibowli STPI Campus

FY-21-22

43.78%

56.21%

■ Green Power ■ Non-Green Power

FY-22-23

21.74%

78.25%

■ Green Power ■ Non-Green Power

FY-23-24

1.01%

98.99%

■ Green Power ■ Non-Green Power

Green Energy Trend

56.21% 43.78% 78.25% 21.74% 98.99% 1.01%

FY-21-22 FY-22-23 FY-23-24

■ Green Power ■ Non-Green Power
······ Linear (Green Power) ······ Linear (Non-Green Power)

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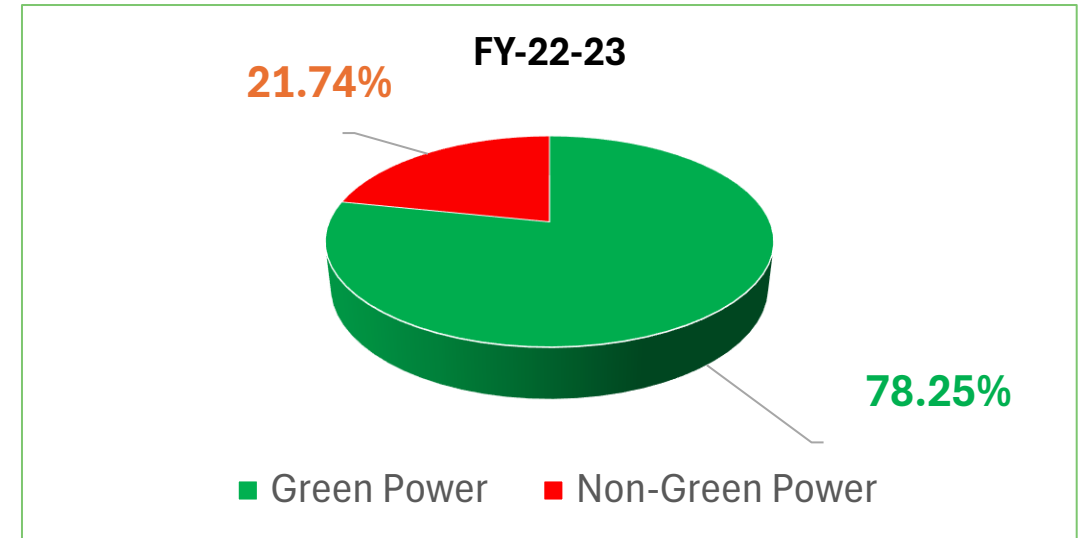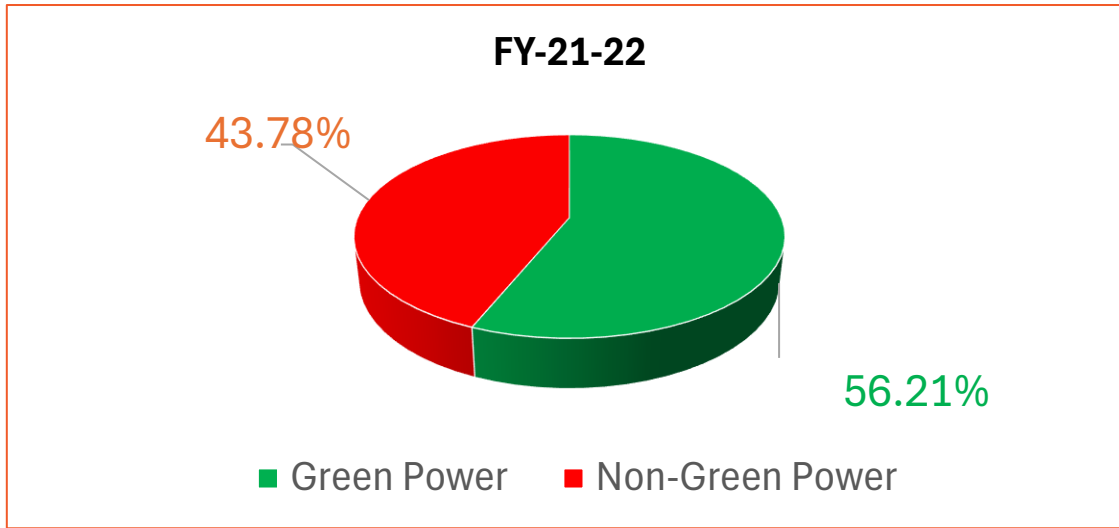
ESG Highlights

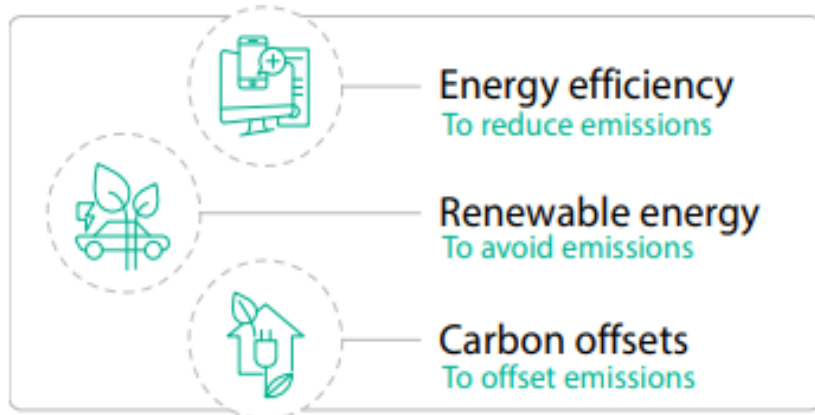## Reflecting on our journey so far

Carbon neutral 5 years in a row

29.6 mn sq. ft. of the highest-level green certified space

37.5 mn sq. ft. of office space monitored through Infosys command center

60.1% reduction in Scope 1 and 2 GHG emissions over the BAU scenario*

60.2 MW of total installed solar capacity

67.5% of electricity for our India operations comes from renewable sources

13.13 tons of CO_2e/MUSD revenue emission intensity for fiscal 2024

CDP climate leadership 8 years in a row

40 lakes across our campuses, holding 430 million liters of rainwater storage capacity

405 deep injection wells across our campuses in India, providing a combined recharge capacity of over 20 million liters

100% recycling of wastewater

2,64,000+ rural families continue to benefit from our carbon offset programs

25+% proportion of spending on local suppliers (in India) in fiscal 2024

119 mn+ lives empowered via Tech for Good programs in e-governance, healthcare and education

* BAU scenario refers to regular operations without interventions such as renewable power or energy conservation initiatives.

World's most ethical company recognized by Ethisphere for the fourth year in a row

92 scientists honoured with the Infosys Prize since 2008

90% local hires

39.3% women in the workforce in fiscal 2024

24 mn+ training hours in fiscal 2024

11.75 mn learners enabled with digital skilling

ISO 42001:2023 certified for AI management systems

ISO 27001:2022 certified for information security management

ISO 14001:2015 certified for environment management

ISO 45001:2018 certified for occupational health & safety management

ISO 27701:2019 certified for privacy information management

ISO 22301:2019 certified for business continuity management

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GHG Emissions Action plan & IAQ Strategy

Our approach to reducing emissions is three-fold:

Energy efficiency
To reduce emissions

Renewable energy
To avoid emissions

Carbon offsets
To offset emissions

❖**Scope 3 emissions are calculated at corporate level.**

Infosys has both short- and long-term plan to reduce GHG emissions. The following are the climate related targets that are validated by SBTi.

- Reduction of absolute Scope 1, Scope 2 and Scope 3 GHG emissions by 12.5% by 2025 from 2020 as the base year.

- Reduction of absolute Scope 1, Scope 2 and Scope 3 GHG emissions by 37.5% by 2035 from 2020 as the base year.

Indoor Air Quality:

At Infosys, we pride ourselves on going above and beyond Health and Safety Standards and Industry guidelines in maintaining Indoor Air Quality (IAQ). We have undertaken comprehensive evaluations of our HVAC infrastructure and have implemented modifications accordingly, all aimed at providing our employees with the best level of air quality possible. We are committed to providing our employees with the best IAQ, and we are confident that our efforts will ensure a safe, healthy, and comfortable working environment for everyone. Indoor air quality is monitored at all working locations to ensure clean and hygienic air is supplied, which improves cognition and productivity, reduces the spread of other airborne diseases, protects against outdoor air pollutants. Monitoring is done in two ways:

1. Real-time monitoring – Key parameters such as carbon dioxide (CO_2), PM2.5, PM10 are continuously monitored and connected to the building management system (BMS) in most buildings.

2. Third-party monitoring – Around 12 parameters are monitored at defined frequencies annually as per ASHRAE / OSHA requirements

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GHG Inventory/ Absolute Emissions

Emission type	FY 2021-22	FY 2022-23	FY 2023-24
Scope 1	332	164	477
Scope 2	3,272	2,281	1,330
Scope 3 -Capital Goods	0	0	0
Scope 3 -T&D losses	998	408	238
Scope 3 -Emissions from Waste	0	0	27
Scope 3 -Business Travel Emissions#	0	0	0
Scope 3 -Employee Commute Emissions	168	174	569
Scope 3 -WFH emissions	0	0	0
Scope 3 -LPG emissions	19	7	26
Scope 3 - Total	1,185	590	859
Total emissions	4,788	3,035	2,667

GHG Emissions

Legend: Scope 1, Scope 2, Scope 3 -Capital Goods, Scope 3 -T&D losses, Scope 3 -Emissions from Waste, Scope 3 -Business Travel Emissions#, Scope 3 -Employee Commute Emissions, Scope 3 -WFH emissions, Scope 3 -LPG emissions, Scope 3 - Total

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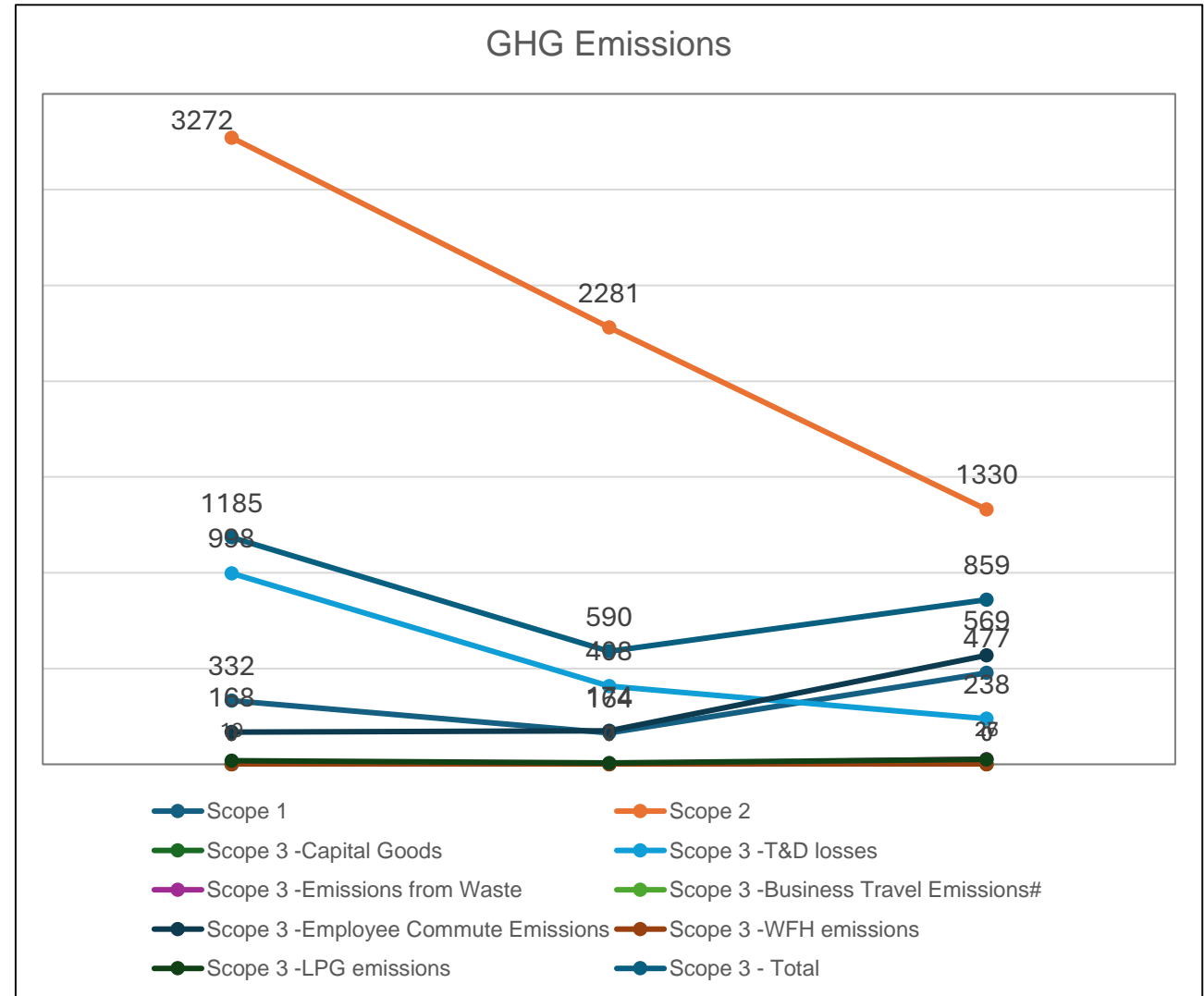
Building Management System (BMS)

1. Use automated energy saving strategies/logics
- every single electrical motor in the building uses an energy saving strategy

2. Manage energy by detail – for lighting, computing and plug loads
- floor-wise and wing-wise energy monitoring for lighting, computing and plug loads for granular energy control, identification of wastage

3. Continuous M&V, continuous commissioning
- measures energy as well as efficiency for all hvac and ups for continuous verification and improvement

4. Deliver highest standards of indoor air quality (IAQ)
- Demand controlled ventilation to maintain IAQ with minimal energy consumption.

5. Provides data to optimize future building designs
- records peak value of W/sq.ft on HVAC, lighting, computing and main incomer to migrate from thumb rule engineering to performance data driven engineering

6. Allow equipment and system level diagnostics and corrections
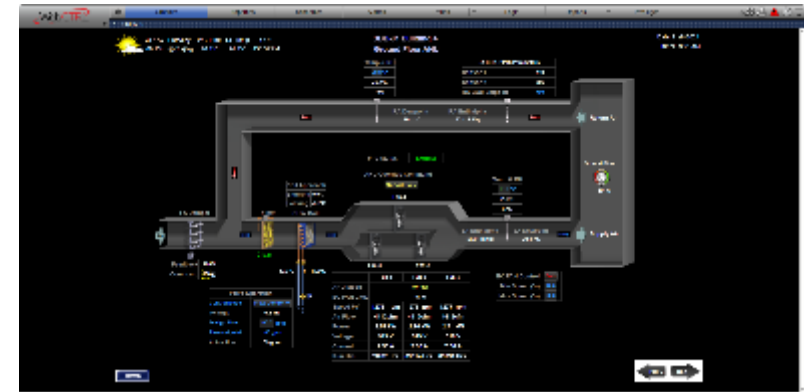e.g extensive measurement on ahus allow identification of low flows, malfunctioning valves, fans, coils, filters, etc.

7. Enables trending and data analytics
- e.g. trends to analyze historical operation of VAVs, AHUs, Chiller plants.

8. Water efficiency
- monitors water consumption on hourly, daily and monthly basis for optimization

Example of demand-controlled ventilation. Building only uses as much fresh air as required based on occupancy / CO_2 sensing

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Continuous verification, continuous auditing - Design Vs Actual

Constant monitoring to get design efficiencies

▪ Allows performance-based management for maintenance contracts

Local & Central Command Center for Monitoring and Optimization

- All buildings have a robust Building Management System that makes the buildings smart and generates continuous granular level data to improve operations on-the-go, and ensure efficient operations and high indoor environmental quality all the time for building occupants by monitoring through Central Command Center
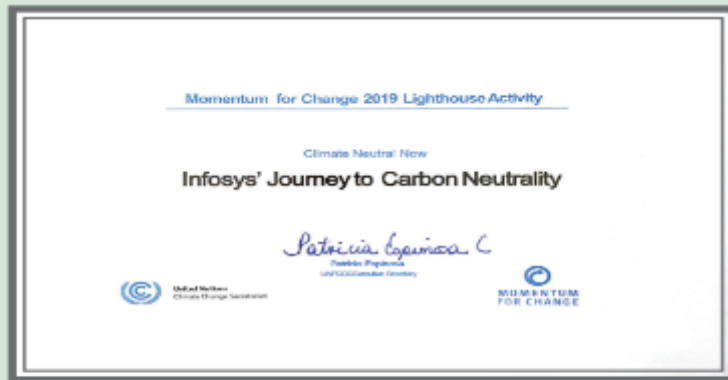

Local Command Center at Infosys Gachibowli   Central Command Center at Infosys Bangalore

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Journey To Carbon Neutrality

2020: Infosys is carbon neutral

Infosys has become carbon neutral for FY 2020, 30 years ahead of the timeline set by the Paris Agreement. In 2019, Infosys received the prestigious United Nations Global Climate Action Award in the 'Climate Neutral Now' category.

Momentum for Change 2019 Lighthouse Activity

Climate Neutral Now

Infosys' Journey to Carbon Neutrality

Patricia Espinosa C
Patricia Espinosa
UNFCCC Executive Secretary

United Nations
Climate Change Secretariat

MOMENTUM
FOR CHANGE

UN Global Climate Action Award Certificate

"Infosys' journey to carbon neutrality is truly inspiring. As one of the first companies of its kind to commit to carbon neutrality, they have provided a practical model for climate action, while setting a benchmark for integrating sustainable development and climate action. At this year's UN Climate Conference (COP 25) in Madrid, it is our honour to recognize Infosys as a winner of this year's UN Global Climate Action Awards."

– Niclas Svenningsen
Manager of the UN Climate Change Global Climate Action Programme

CARBON NEUTRALITY – PAS 2060:2014

Infosys becomes the first Company[1] in India to certify its carbon neutrality against PAS 2060:2014, the highest standard for carbon neutral certification worldwide.

[1] Based on publicly available data as on September 11, 2020.

A HOLISTIC APPROACH

We took action internally through energy efficiency initiatives and investments in renewables. Any emissions that remained were then offset, using community-based projects that created a lasting socio-economic impact.

Energy efficiency
To reduce emissions

Renewable energy
To avoid emissions

Carbon offsets
To offset emissions

WHAT OUR EFFORTS HAVE RESULTED IN

LEED

25 m sq ft
of highest rated (LEED Platinum/ GRIHA 5-star) green buildings

60 MW
of installed solar PV capacity

30 m sq ft
of smart connected spaces

Super efficient buildings
with superior energy performance

44.3%
of total electricity across India campuses from renewable sources

55%
reduction in per capita electricity consumption compared to 2008 baseline

IMPACT OF CARBON OFFSET PROJECTS

11 of 17 SDGs
favorably impacted through our carbon offset projects

2,400+
Jobs created through our carbon offset projects

1,02,000+
rural families continue to benefit from our carbon offset projects

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Net Zero Action Plan

Infosys' climate commitments

➢ As a part of our ESG Vision 2030, we have committed to maintaining carbon neutrality across Scope 1, 2 and 3 emissions, each year.

➢ Our Climate Pledge, (in partnership with Amazon and Global Optimism), is to become net zero by 2040.

➢ Infosys is the first Indian company to participate in the RE 100 initiative.

➢ Our emission reduction targets are validated by the Science Based Target initiative (SBTi).
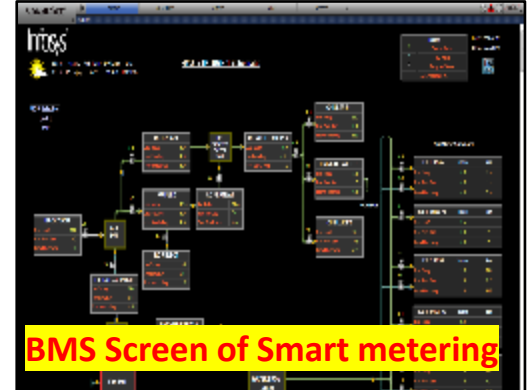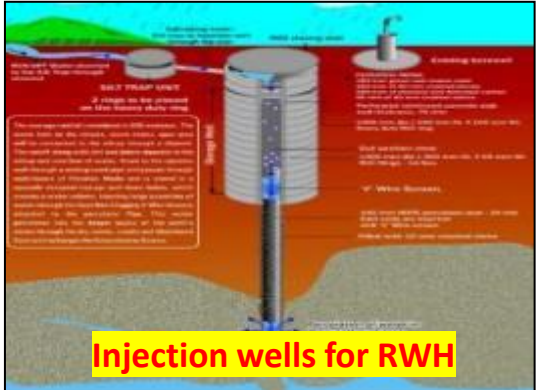
GHG Emission
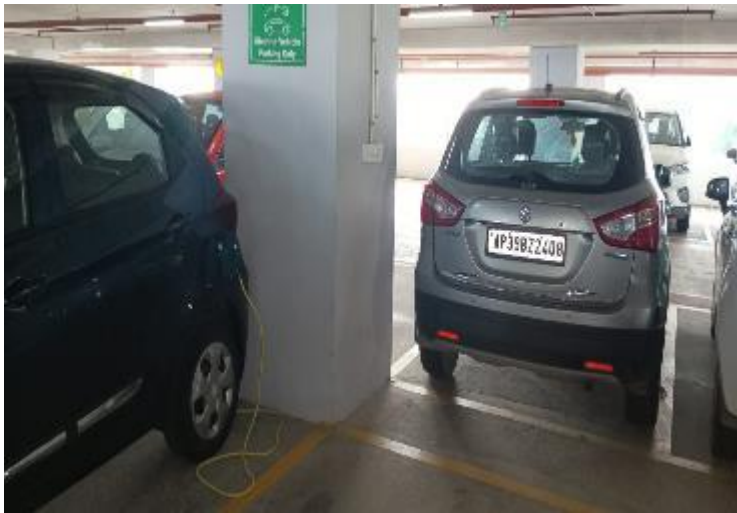
- EV vehicles Charging points for 4 wheelers has been installed in MLCP at various floors and for 2 wheelers EV bikes charging points installed in MLVP ground floor to limit the CO_2 Emission and encourage the electric vehicle usage by employees.

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ESG Vision 2030

100% of wastewater is recycled

Efficient treatment technology - Membrane bio-reactor (MBR) technology

Recycled water is used for irrigation

Rainwater harvesting for reuse

Grey water procurement for land scape usage

Sewage treatment plant with MBR technology

Water Management

Smart Water meter

Injection wells for RWH

Low flow sensor fixtures

BMS Screen of Smart metering

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Waste Management Goal: Zero waste to landfill

Organic waste

- Inhouse Biogas plant for treatment of food waste (1TPD)
- Garden Waste is disposed to identified vendor.
- Organic waste generated 137 tons of waste for FY 2023-24

In-organic, Non-Hazardous waste

- Segregated at the source
- Paper, Plastic, Glass, Metal, etc.
- Sent to authorized vendors for recycling
- Recycled 1073 tons of waste per annum

Hazardous waste

- Segregated and collected by authorized recyclers (pollution control board approved vendor).
- E-Waste, DG oil, Biomedical, Sanitary waste, etc.
- Recycled 9 tons of waste per annum.

Achieved reduction of waste generation at source level,100% waste segregation and disposed to authorized vendor for Recycle and reuse considering life cycle perspective

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Awards & Certifications

- Awarded **"Energy Management award 2009"** by **CII**
- Awarded **"Energy conservation practices"** by **TSREDCO**
- Awarded **"Gold Garden Awards"** by **TS Deportment of Horticulture**
- Awarded **"Commercial Design award 2023 "** by **Havells**
- Awarded **"Vishwakarma award 2017"** by **CIDC**
- Awarded **"Vishwakarma award 2018"** by **CIDC**
- Certified **"LEED EB Platinum"** by **USGBC**
- Certified **"BCMS 22301:2012"**
- Certified **"ISO 14001:2015"**
- Certified **"ISO 45001: 2018"**
- **98% Green Energy** Utilization from Sep-2022

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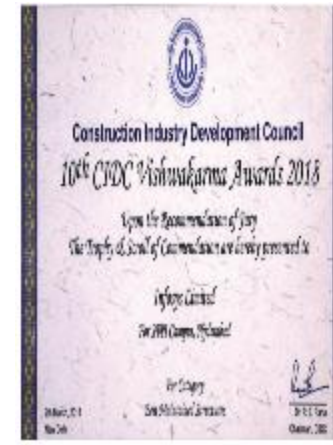
THANK YOU

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