



# 1. Brief introduction on Company / Building

- TCS Adibatla is an owned facility and is the IT Service Centre of Tata Consultancy Services which spreads across 78.475 Acres, with approx. 33% green cover, with a seating capacity of over 20000 Nos.
- TCS Adibatla is IGBC Gold Rated Green Building.
- Certified for ISO 9001/ 20000/27001/14001/45001/50001
- TCS Adibatla facility is powered with 100% Renewable Energy
- Facilities including Library, Data Center, Gymnasium, Cafeteria, Consulting /Video Conferencing /Training room , Indoor /out door games etc.
- Innovative Technologies: Energy efficient building envelop, Solar PV System, Solar water Heater, Energy efficient HVAC & Lighting System, Heat Recovery Unit ,Green IT technology, Zero discharge , Zero waste to Landfill site





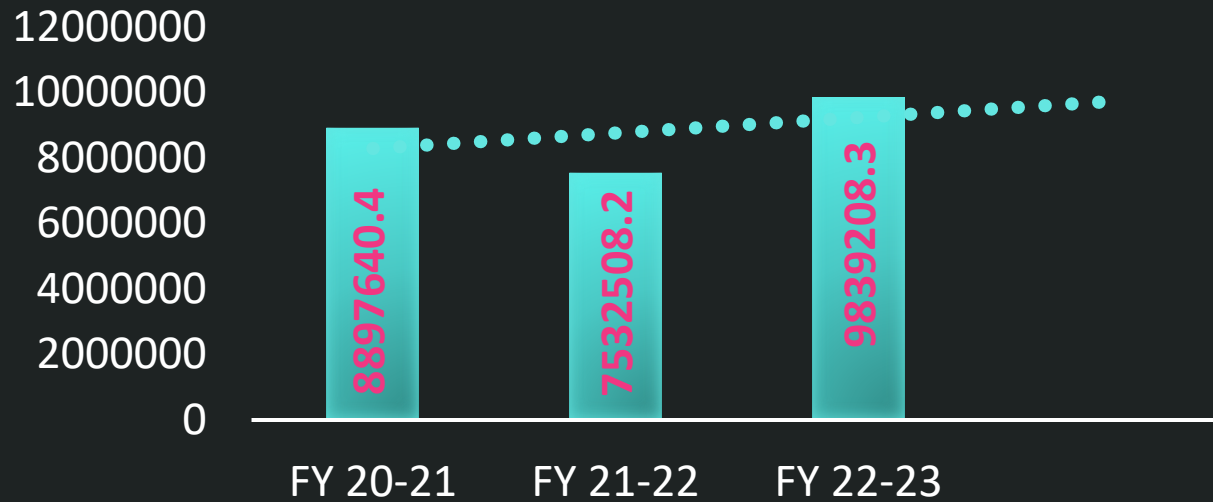
## 2. TCS Adibatla



## 2. Electricity Consumption overview

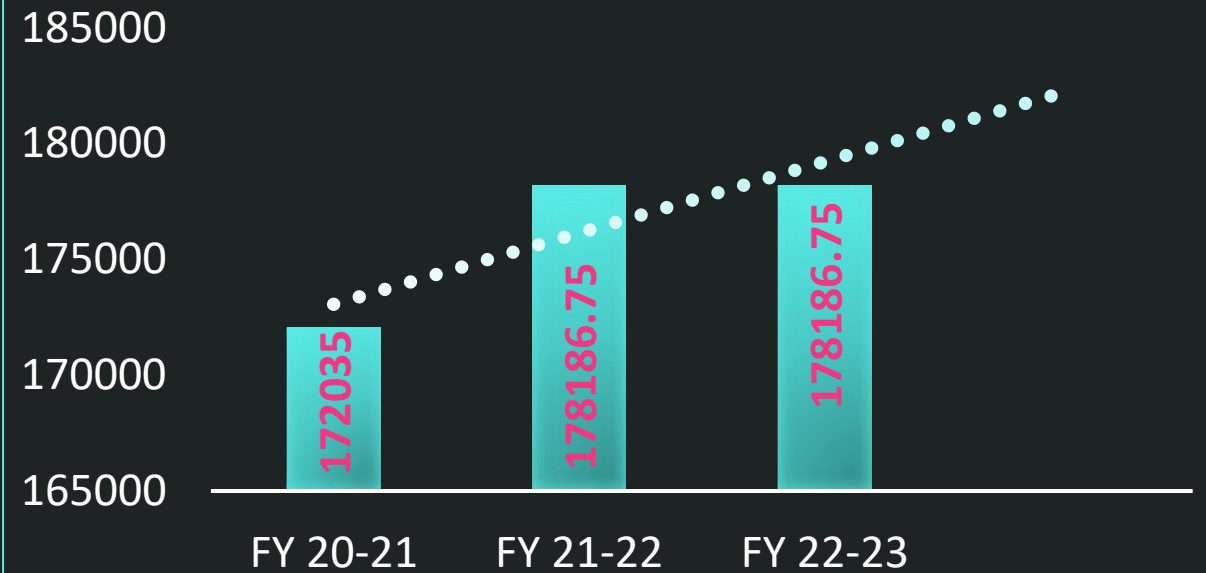
### ELECTRICITY CONSUMPTION (KWH)

- Electricity Consumption (kWh)
- Linear (Electricity Consumption (kWh))

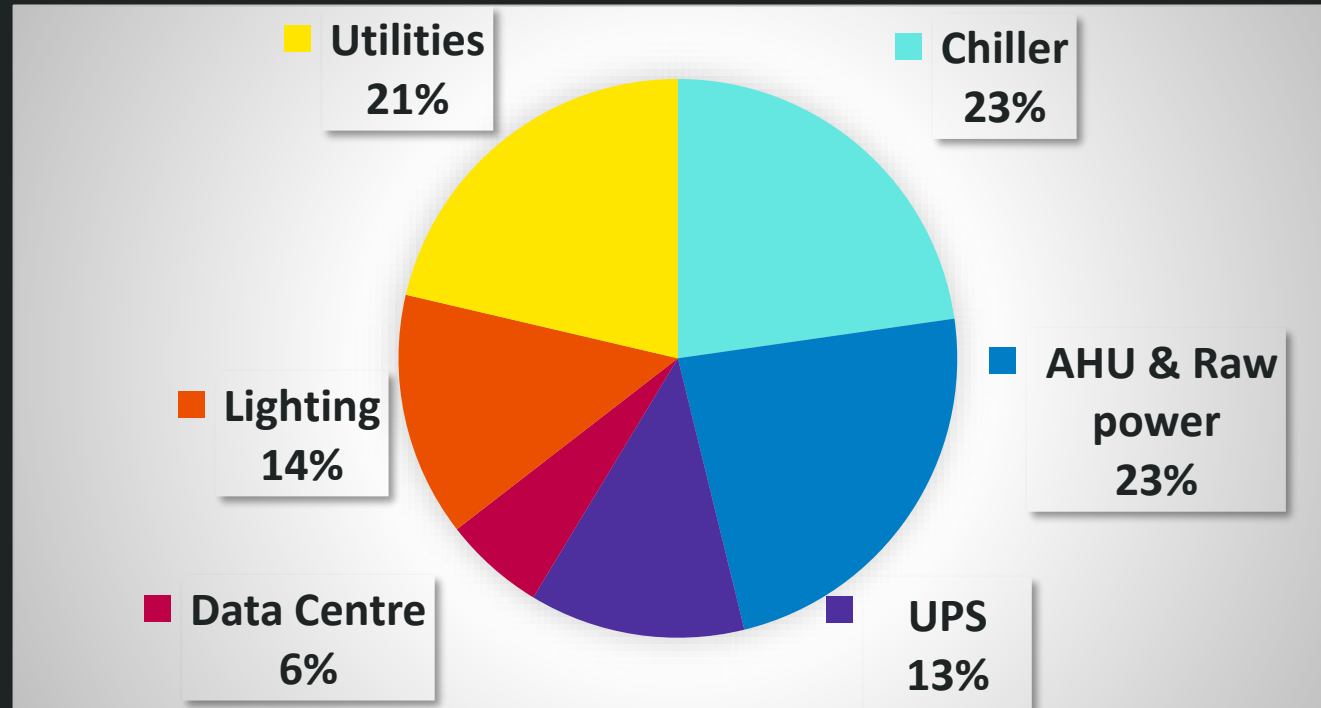


### BUILT-UP AREA (SQM)

- Built-up area (Sqm)
- Linear (Built-up area (Sqm))



## PIE CHART FY 22-23

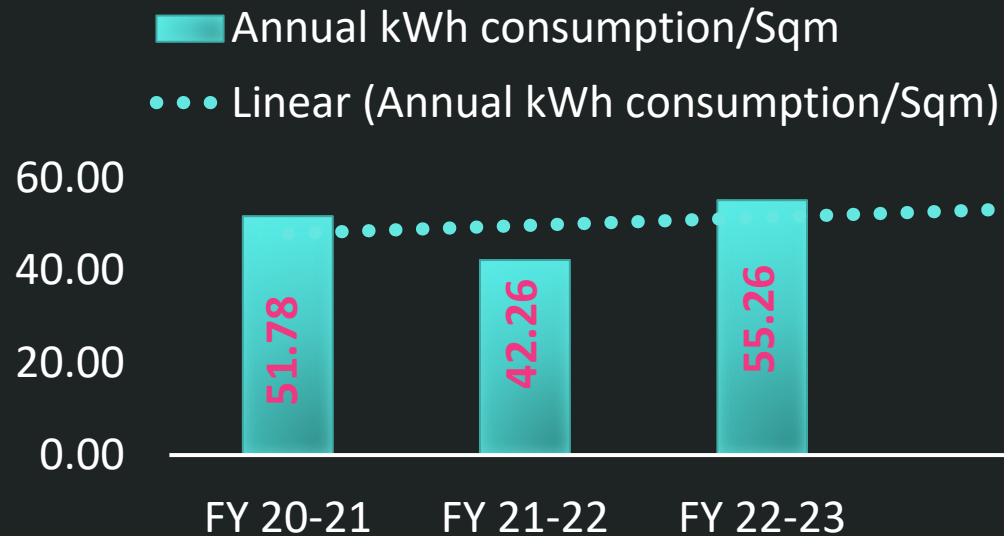


- Building has East-west orientation in a way to harvest maximum day light and utilize the natural day light.
- Double glazed glass was installed for allowing maximum day light into the building. SHGC of the Glass is 0.35.
- Perforated aluminum sheet was installed at around 3 ft from the double-glazed glass for reducing the heat load.
- Terrace is covered with China mosaic tiles of SRI 78.
- The location is in Composite climate zone.
- Energy consumption in FY 22-23 is 9839208.3 kWh.



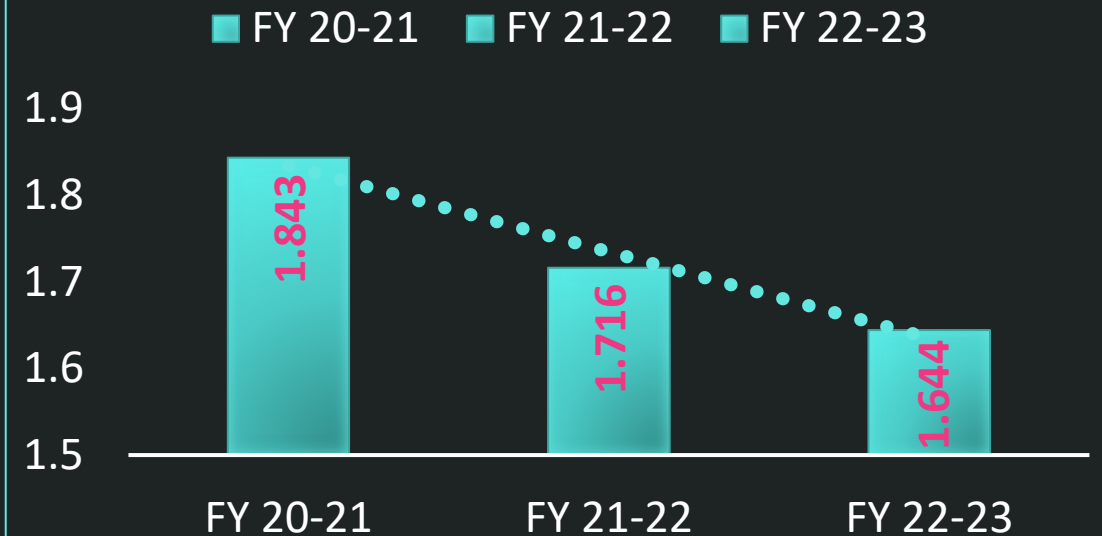
### 3. Specific Energy Consumption & Data Center PUE Pattern in last three years (FY 20-21 to FY 22-23)

#### SPECIFIC ENERGY CONSUMPTION



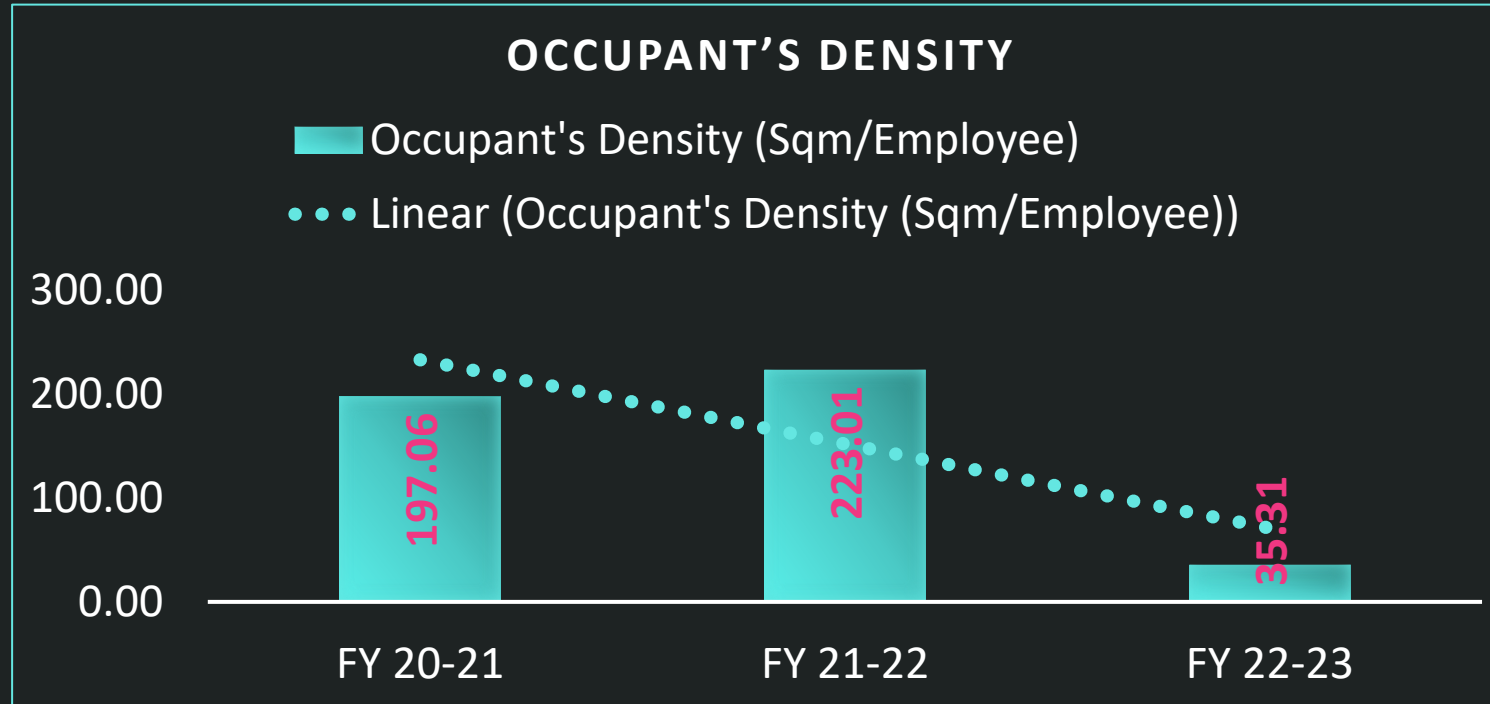
- The Specific Energy Consumption decreased by 18.39 % from FY 20-21 to FY 21-22 due to increase in operational area, reduction in occupancy.
- The Specific Energy Consumption increased by 30.7 % from FY 21-22 to FY 22-23, due to increase in occupancy.

#### DATA CENTRE PUE VALUE



- The Data center PUE values decreased by 6.89 % from FY 20-21 to FY 21-22 and further decreased by 4.19 % from FY 21-22 to FY 22-23 and the variation is due to initiatives taken such as
  - ❖ Virtualization of servers
  - ❖ Removing physical servers
  - ❖ Installation of cold aisle containment for effective cooling of servers.

## Occupant's Density in last three years (FY 20-21 to FY 22-23)



- The Occupant's density (Sqm/Employee) increased by 13.17 % from FY 20-21 to FY 21-22 due to increase in the operational area as well as reduction in occupancy.
- Decreased by 84.17 % from FY 21-22 to FY 22-23 due to increase in occupancy.

## 4. Information on Competitors, National & Global benchmark

Benchmarking details	Reference	SEC Values (kWh/Sqm)
National Level	BEE ( Bureau of Energy Efficiency	80
International Level	Lawrence Berkeley National Laboratory	60 - 90

- ❖ The specific energy consumption of the TCS Adibatla Facility in FY 22-23 is **55.26 kWh/Sqm.** and is well below the National and Internal benchmarks.

Competitor	SEC Values (kWh/Sqm)
Wipro, Kodathi	58
Cognizant, Hyderabad	42
Mindtree, Bengaluru	62.5

\* Source - CII website



# Information on Competitors, National & Global benchmark

- The specific energy consumption in FY 22-23 is 55.26 kWh/Sqm. and is well below the National and Internal benchmarks.
- During FY 23-24, several energy efficiency and conservation initiatives were planned for further improvement in the specific energy consumption of the facility.

## List of Major Encon project planned in FY 2023-24

Title of Project	Annual Energy Saving (Million kWh)	Investment (Rs. in Million)
Flame proof LED light wattage Reduction from 96 Watts (88 Lumens) to 60 watts (100 Lumens)	0.0132	0.2961
Automatic light control in washroom using Motion sensors	0.0343	0.0959
Chemical free treatment for Cooling Towers by Scale Bio Remover ( SBR)	0.0536	6.9000
Workstation UPS Load optimization by integration of S1 & S2 block	0.1458	3.3920
Smart LED streetlight with automatic dimmer control	0.0468	1.0640

## 5. Energy Savings projects implemented in last three years

Year	No of Energy saving projects	Investment (INR Million)	Electrical savings ( Million kWh)	Thermal savings ( Million Kcal)	Total Savings ( INR Million)	Payback period ( in months-Avg)
FY 2020-21	4	0.8570	0.0375	0	0.2990	34
FY 2021-22	3	0.0046	0.0096	0	0.0783	1
FY 2022-23	6	0.9820	0.2171	0	1.7193	7

## List of major projects implemented in FY 20-21

Year	Name of Energy saving projects	Investment (INR Million)	Electrical savings ( Million kWh)	Thermal savings ( Million Kcal)	Total Savings ( INR Million)	Payback period ( in months)
FY 20-21	Lights modification in Meeting Rooms	0.2594	0.0092	0	0.0610	50
FY 20-21	Wind power generation by using STP exhaust system	0.0035	0.0016	0	0.0110	4
FY 20-21	Auto Tube Cleaning System for WC Chillers to improve condenser efficiency	0.5941	0.0240	0	0.2080	30
FY 20-21	Implemented earth hour activity for energy saving	0	0.0027	0	0.0190	0



## List of major projects implemented in FY 21-22

Year	Name of Energy saving projects	Investment (INR Million)	Electrical savings ( Million kWh)	Thermal savings (Million Kcal)	Total Savings ( INR Million)	Payback period ( in months)
FY 21-22	Energy savings through operational optimization – Operation controller for CSU units in common Hub rooms	0.0046	0.0067	0	0.0581	1
FY 21-22	Energy savings through operational optimization – Control of S2 East pantry lights BMS	0	0.0002	0	0.0012	NA
FY 21-22	Energy savings through operational optimization - Implemented earth hour activity for energy saving	0	0.0027	0	0.0190	NA

## List of major projects implemented in FY 22-23

Year	Name of Energy saving projects	Investment (INR Million)	Electrical savings ( Million kWh)	Thermal savings ( Million Kcal)	Total Savings ( INR Million)	Payback period ( in months)
FY 22-23	Technical retrofits - Flame proof LED light wattage Reduction from 90 watts to 60 watts at DG room	0.2820	0.0124	0	0.1080	32
FY 22-23	Technical retrofits - Installation of Cold Aisle containment system in Data center	0.7000	0.0300	0	0.2604	39
FY 22-23	Energy savings through operational optimization - Chiller operation optimization based on ambient temperature	0	0.0542	0	0.4705	NA
FY 22-23	Technical retrofits - Server virtualization & Decommissioning of 8 servers at Data Center	0	0.0900	0	0.7812	NA
FY 22-23	Energy savings through operational optimization - Implemented earth hour activity for energy saving	0	0.0097	0	0.0841	NA
FY 22-23	Energy savings through operational optimization - Optimize the artificial lighting by day light harvesting in S1 & S2 pantry area	0	0.0208	0	0.0151	NA

## 6. Innovative Projects Implemented

### I. Energy generation by using STP exhaust system

#### ❖ Project Description

Energy source was identified from STP Exhaust fan as it is running 24x7. In house team has developed a mechanism to convert the kinetic energy into Mechanical energy / Electrical energy by fixing the unused wheel of the Air-cooled chiller against the exhaust fan. Kinetic energy of the exhaust air is utilized for power generation. This equipment could generate a voltage of 17.6 VDC (Voltage in direct current). The Generated Power is now connected to 10 x 18W STP tube lights. The CFM of the exhaust fan is 32000.



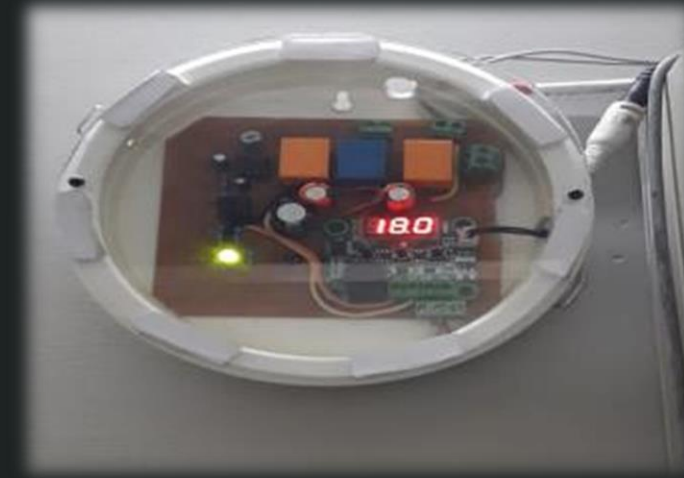
S.No	Description of project	Annul Energy savings ( kWh / annum)	Investment (INR Million)	ROI ( in Months)
1	Wind energy generation by using STP exhaust system	1555	0.0035	4



## II. Operation controller for CSU's in Common Hub rooms

### ❖ Project Description

Identified the opportunity to save the energy by operating of CSU's (Ceiling Suspended Unit) for common hub rooms. As per design Actuator valves are operating based on the supply temperature and there is no design of return temperature controller. In-house team had planned to switch off the blower automatically when the temperature reaches as per TCS standards (25+/-1°C). The controller will maintain the temperature by cutting off the Blower. Earlier the blower was running 24 Hrs, after installation of controller now it is running 3-4 Hrs in a day. Power consumption is reduced, equipment life will be increased.



S.No	Description of project	Annul Energy savings ( kWh / annum)	Investment (INR Million)	ROI ( in Months)
1	CSU's operation for controller	6696	0.0046	1

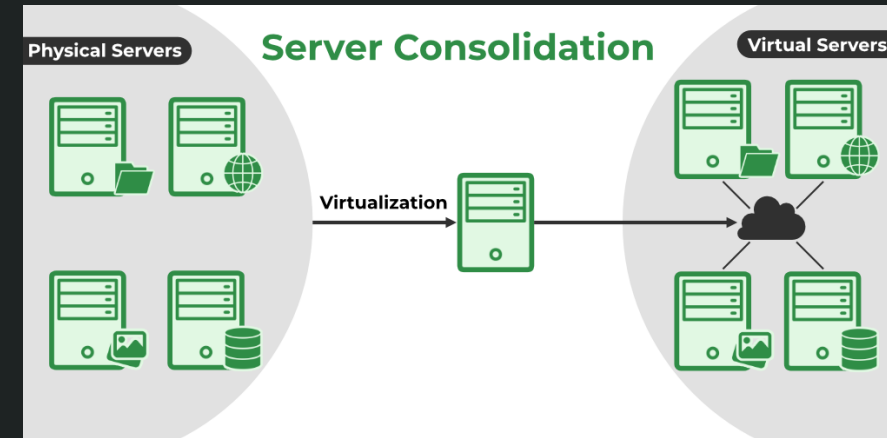
## III. Decommissioning of server at Data Centre

### ❖ Project Description

As part of Green IT initiative, energy saving opportunity has been identified by virtualization and subsequent decommissioning of 8 modules of the existing servers in the data center.

The physical removal of the server's project was identified based on the feasibility of the migration of the data to cloud. The cloud migration is a new technology introduced and the company utilized the same.

The project impacted in decrease of the energy consumption and the reduced the physical maintenance of the servers.



S.No	Description of project	Annul Energy savings ( kWh / annum)	Investment (INR Million)	ROI ( in Months)
1	Server virtualization	90000	0	NA

# Utilization of Renewable Energy Sources

- Offsite renewable energy is being procured from the TSSPDCL under Green tariff.

Year	% of Onsite Solar power	% of Offsite Solar power	% of Total Renewable Energy in total energy consumption of the location
FY 2020-21	3.5	0	3.5
FY 2021-22	15.1	0	15.1
FY 2022-23	25.2	74.76	≈100





## 7. Utilization of Renewable Energy Sources

➤ Onsite solar power generation is 100% utilized in the facility.

Year	Technology (solar/wind/bio mass etc)	Installed Capacity MW	Power Generation (Million kWh)	Power Consumption (Million kWh)	% of overall electrical energy consumption
FY 2020-21	Solar	0.245	0.323	0.323	3.5
FY 2021-22	Solar	2.4	1.339	1.339	15.1
FY 2022-23	Solar	2.4	3.309	3.309	25.2

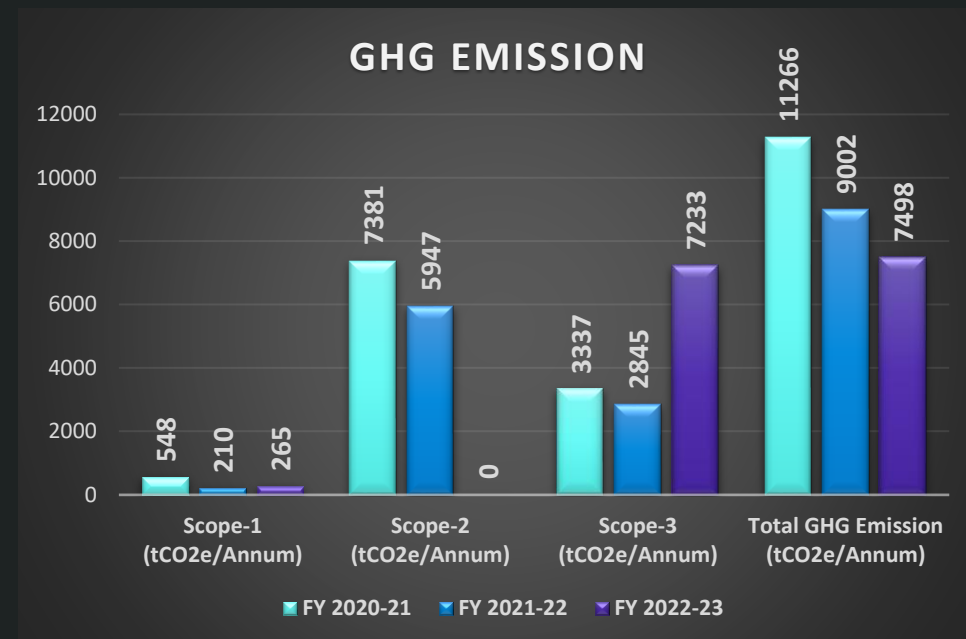
Year	Capacity MW	Capacity Addition MW	Investment ( INR Million)
FY 2020-21	0.245	0	0
FY 2021-22	2.4	2.154	80.775
FY 2022-23	2.4	0	0



## 8. GHG Emission and indoor air quality

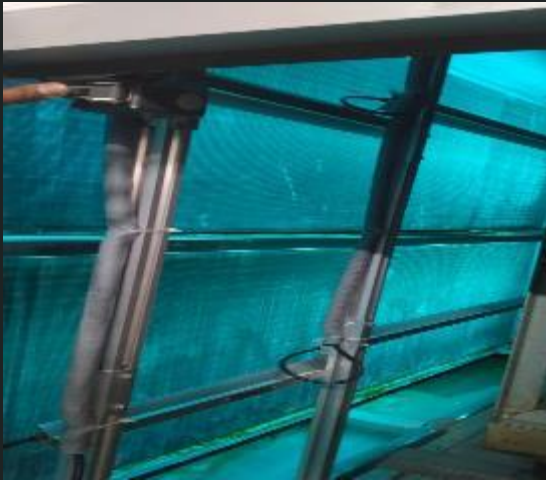
- GHG Emission assessment is being done through SOFI tool.
- The Scope-1, Scope-2, Scope-3 emissions were considered by the location and are published in annual report.
- The NET ZERO target commitment by 2030. Action plan for achieving includes Electrification of transport fleet, Energy Conservation Projects, Tree plantation drives, Using EV/CNG vehicles for employee commutation, Usage of less GWP refrigerant etc.,

Year	Scope-1 (tCO2e/Annum)	Scope-2 (tCO2e/Annum)	Scope-3 (tCO2e/Annum)	Emissions intensity (tCO2e/FTE)
FY 2020-21	548	7381	3337	12.9
FY 2021-22	210	5947	2845	11.26
FY 2022-23	265	0	7233	1.48



# Indoor air quality

- Indoor Air quality is being monitored on real time basis through Duct mounted return air CO2 sensor and fresh air supply is regulated accordingly.
- Parameters like PM10, CO, TVOC etc are being monitored by NABL lab on half yearly basis.
- UVGI, MERV filters are installed in AHUs for improving the indoor air quality at workplace.



UVGI for AHUs



MERV Filters in AHUs

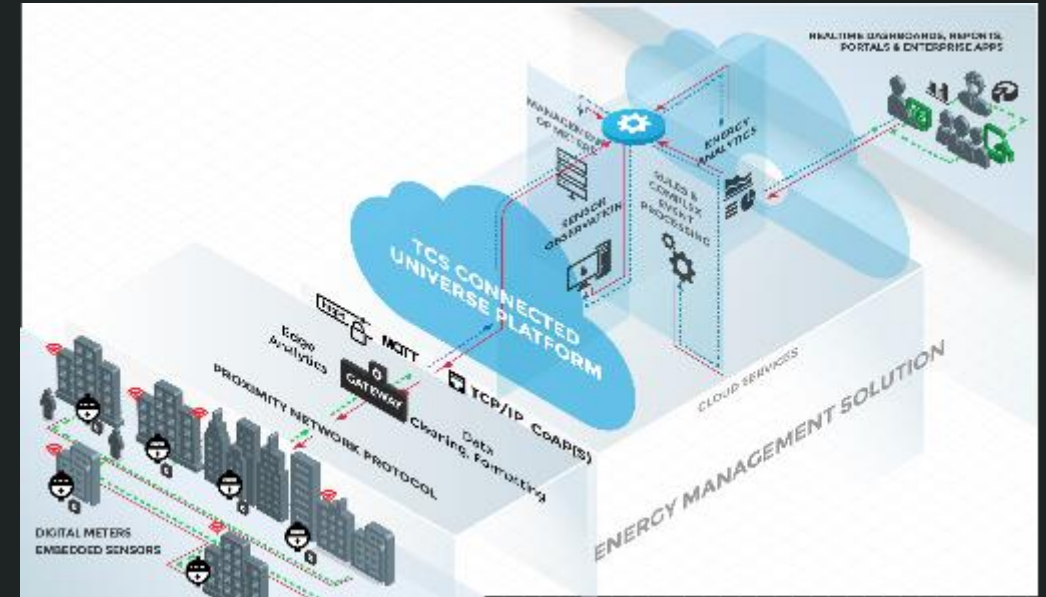


Duct mounted return air CO2 sensor for IAQ application

PARAMETER	AHU-2.1	AHU-2.2	AHU-2.3	AHU-2.4	AHU-2.5
CO2 (PPM)	400	400	400	400	400
CO2 (PPM) (Setpoint)	400	400	400	400	400
CO2 (PPM) (Alarm)	500	500	500	500	500
CO2 (PPM) (Status)	Normal	Normal	Normal	Normal	Normal
CO2 (PPM) (Unit)	PPM	PPM	PPM	PPM	PPM
CO2 (PPM) (Trend)	Stable	Stable	Stable	Stable	Stable
CO2 (PPM) (Alert)	OK	OK	OK	OK	OK
CO2 (PPM) (Last Update)	10:00	10:00	10:00	10:00	10:00
CO2 (PPM) (Min)	350	350	350	350	350
CO2 (PPM) (Max)	500	500	500	500	500
CO2 (PPM) (Avg)	400	400	400	400	400
CO2 (PPM) (Std Dev)	50	50	50	50	50
CO2 (PPM) (Range)	350-450	350-450	350-450	350-450	350-450
CO2 (PPM) (Trend)	Stable	Stable	Stable	Stable	Stable
CO2 (PPM) (Alert)	OK	OK	OK	OK	OK
CO2 (PPM) (Last Update)	10:00	10:00	10:00	10:00	10:00
CO2 (PPM) (Min)	350	350	350	350	350
CO2 (PPM) (Max)	500	500	500	500	500
CO2 (PPM) (Avg)	400	400	400	400	400
CO2 (PPM) (Std Dev)	50	50	50	50	50
CO2 (PPM) (Range)	350-450	350-450	350-450	350-450	350-450
CO2 (PPM) (Trend)	Stable	Stable	Stable	Stable	Stable
CO2 (PPM) (Alert)	OK	OK	OK	OK	OK
CO2 (PPM) (Last Update)	10:00	10:00	10:00	10:00	10:00
CO2 (PPM) (Min)	350	350	350	350	350
CO2 (PPM) (Max)	500	500	500	500	500
CO2 (PPM) (Avg)	400	400	400	400	400
CO2 (PPM) (Std Dev)	50	50	50	50	50
CO2 (PPM) (Range)	350-450	350-450	350-450	350-450	350-450
CO2 (PPM) (Trend)	Stable	Stable	Stable	Stable	Stable
CO2 (PPM) (Alert)	OK	OK	OK	OK	OK

## 9. BMS & Certification

- The facility is equipped with BMS to monitor the parameters like Fire detection system, indoor CO2 etc.,
- All energy meters are connected to a monitoring platform ROC (Resource Optimization Center) and continuously monitored. ROC is an internal TCS energy management program and is one of the world's largest IoT based energy management application.
- The TCS Adibatla is an ISO 5001:2018 standard certified facility.
- The TCS Adibatla is IGBC Gold Certified.
- The investment done was Rs. 282000/- (INR) and the total turnover of the location (FY 22-23) is Rs. 1,141,174.92 Lakhs (INR). The % investment is 0.000247%. In FY 21-22 an investment of Rs. 809 Lakhs INR was made on onsite renewable energy.





# 10. NET ZERO Commitment

## NET ZERO Target year

The TCS NET ZERO target commitment by 2030. Published in TCS Integrated annual report 21-22; sub section Natural capital; page no 31.

## Voluntary initiatives, commitments

Committed to use 100% RE by FY 24-25 but achieved in FY 22-23.

### Natural Capital

TCS is in a unique position to combine its heritage of purpose along with digital leadership and innovation to drive its own journey to more sustainable outcomes, as well as partner with customers, civil society and governments to lead and shape solutions towards the achievement of the UN Sustainable Development Goals.

#### Energy Management and GHG Emissions Reduction

**Target:** 70% reduction of Scope 1 + 2 emissions by 2025 (vs base year 2016) and **Net Zero** by 2030

- Prioritized energy optimization and carbon footprint mitigation
- 89% of emissions across Scope 1 and Scope 2 due to purchased electricity for office blocks
- Use of Clever Energy to optimize energy consumption and greater use of renewable energy
- 5 large campuses in India certified with ISO 50001:2018 standards for Energy Management Systems (EnMS)

7 **RENEWABLE AND CLEAN ENERGY**

11 **SUSTAINABLE CITIES AND COMMUNITIES**

9 **INDUSTRY, INNOVATION AND INFRASTRUCTURE**

12 **RESPONSIBLE CONSUMPTION AND PRODUCTION**

13 **CLIMATE ACTION**

#### Achievements

<b>64.4%</b> % Total office space (for India) as per IGBC standards	<b>1.65 PJ/c</b> Energy efficiency initiatives at TCS data centers in Mumbai and Chennai	<b>10.2 MW</b> Roof-top solar capacity across campuses	<b>37.2%</b> Renewable electricity as % of total electricity consumed
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#### Outcomes

Category	FY 2016	FY 2022	Change
Total Energy Consumed in GWh	572	300	49% ↓
Renewable Energy Consumed in GWh	1.6	11.2	6x ↑
Total Scope 1 + 2 emissions in '000 tCO2e	10	3.5	66% ↓
Value chain emissions in '000 tCO2e	46	21	46% ↓

**Scope 3 emissions**  
Employee commutes and business travel cause ~50% of these value chain emissions. Remote working and reduced business travel resulted in a sharp reduction.



Committed to SBTi targets in June 22. Currently in the process of setting targets for validation by SBTi



Carbon neutrality (Scope 1 and Scope 2) in APAC (excluding Japan), Europe & NA in FY22 as per PAS 2060 standard



# Road Map for NET ZERO commitment

## FY 2022-23

100 % Green grid energy  
Procurement from TSSPDCL.

ISO 50001:2018 certified.  
Achieved “zero” Scope 2  
emissions

## FY 2017-18

ISO 14001:2015 &  
ISO 45001: 2018  
certified

## FY 2014-15

Green building  
certification

## FY 2014-15

Started operation  
with 245 KwP  
roof top

## FY 2021-22

2154 kWp onsite  
solar added

## FY 2023-24

Electrification of  
transport fleet, Energy  
Conservation Projects,  
Tree plantation drives.  
Sustain 100% recycling  
of regulated and other  
recyclable wastes.  
100% recycling of  
plastic waste.

## Net Zero Target

70% reduction in scope  
1+2 emissions by 2025  
(Vs base year 2016),  
which is already  
achieved in the FY 22-  
23 & Net Zero by 2030

### CLIMATE CHANGE

*Responding To The Call*

TCS has responded to its Net Zero commitment through SBTi's urgent call for corporate climate action by committing to align with 1.5°C and net-zero through the Business Ambition for 1.5°C campaign. This is published on SBTi website under 'Companies Taking Action'. We are working on getting our targets validated by SBTi. In recognition of the growing significance of climate change as a global challenge that affects stakeholders across our value chain, we have disclosed climate-related risks and opportunities in line with the recommendations of the Taskforce on Climate Related Financial Disclosures (TCFD).



Committed to SBTi targets in June 22. Currently in the process of setting targets for validation by SBTi.



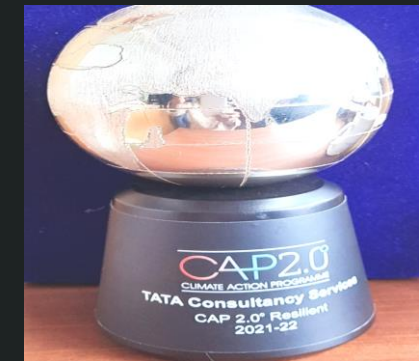
Climate Change Scores Rated A- in 2022. In Leadership Band and in top 17% of sector.

### Sustainability disclosure

We have aligned our Integrated Annual Report to GRI (Global Reporting Initiative) & SASB (Sustainability Accounting Standard Board) while also meeting the Business Responsibility & Sustainability Report (BRSR) requirements as per SEBI.

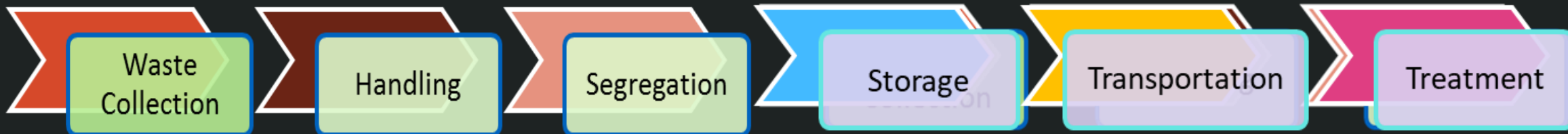
## 11. Awards, acknowledgements/achievements

- TCS received “KPMG India ESG Excellence Award 2023” under Environment category toward reducing Carbon Footprint.
- TCS received “National Award for Environmental Best Practice 2023 s” as Most Innovative Environmental Project & Most Useful Project under category
- TCS has regained its ‘EcoVadis Gold’ rating for the supplier sustainability assessment in 2023
- TCS received CAP 2.0 Resilient Award 2022 from Confederation of Indian Industry (CII) – ITC Centre of Excellence for Sustainable Development (CESD) 2022
- TCS – Adibatla, Hyderabad received International Safety Award 2022 by British Safety Council
- TCS Hyderabad received HYSEA (Hyderabad Software Enterprises Association) 2023 first prize under category Environmental Protection
- TCA-Adibatla Certified for ISO 50001:2018 in FY 2022-23.

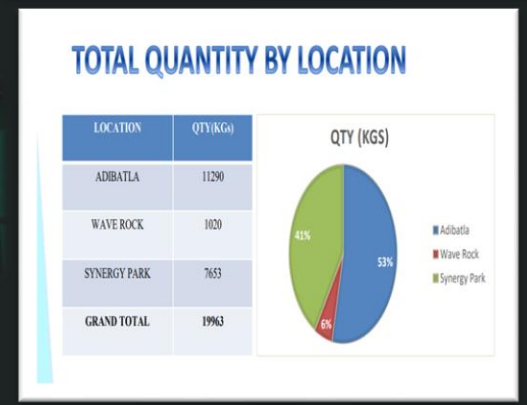
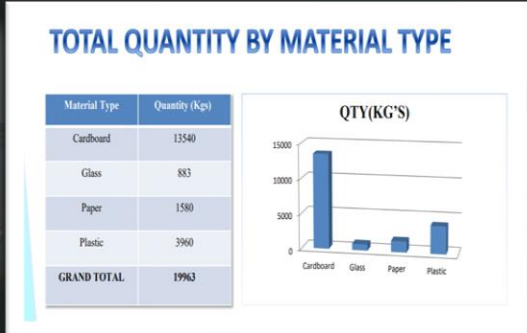
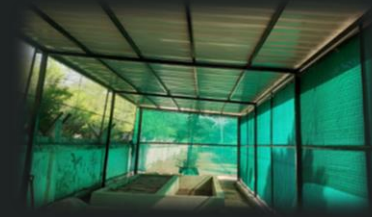
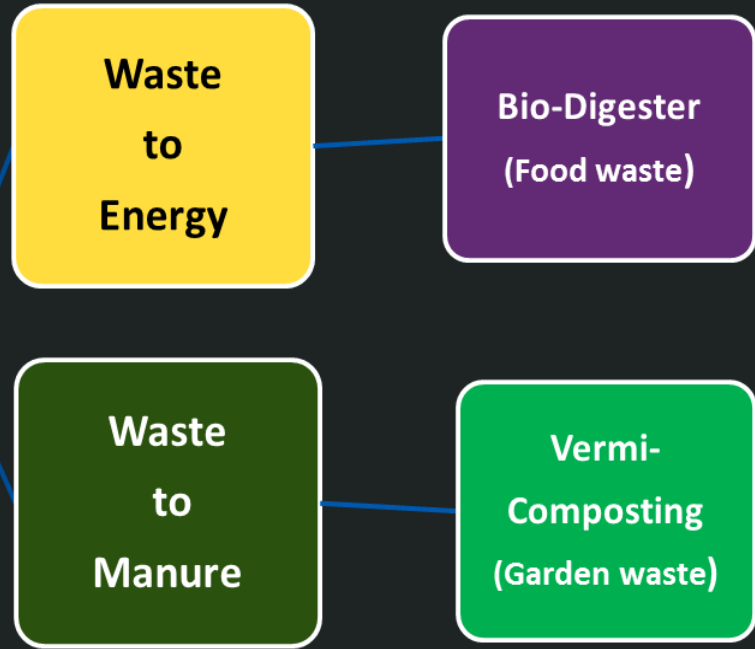


# Achievements

## Road Map on Sustainable Waste Management



- All segregated waste is recycled, and diversion rate is more than 95%.
- Sustainability Impact Report from recycle vendor.



**elima**  
Effcycle Management

**ENVIRONMENTAL**  
IMPACT CERTIFICATE

This is to certify that  
**TATA CONSULTANCY SERVICES (Adibatla)**  
has disposed the below quantities responsibly and  
contributed to the well being of environment.

**11290**  
KGs RECYCLED  
Nov-2022 to Mar-2023

**SAVED**

- 250904 Liters of water
- 26459 kWh Energy
- 11252 Liters of Oil
- 125 Trees

**ELIMINATED**

- 13567 KGs of air pollutants
- 4050 Cubic Feet of landfill

Kashyap  
Co-Founder & CCO



**Thank You**

**Name: Jithesh.K**

**Email: [jithesh.kolamannathodi@tcs.com](mailto:jithesh.kolamannathodi@tcs.com)**

**Phone no.: 8897183999**