



**Mindtree**

A Larsen & Toubro Group Company

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

**Mindtree Limited – East Campus**

**Dhananjaya Papanna ( DJ ) | General Manager  
Purushothama Shetty | Associate Director  
Anbarasu | Senior Manager**

*Welcome to possible*

# Agenda

Mindtree Campus details

Mindtree Energy policy

Energy Management Strategic Path

Effective Monitoring Methodology

Energy Efficiency Summary

Best practices & Key Initiatives.

Future plans

# Mindtree Overview



Mindtree adopts the noble precautionary principles both for its ethical merits and its strategic potential.

We know the intrinsic connection between planet care and business benefits and adopt green practices as smart business practices.

Mindtree is aware of the risk of climate change that encounters all industries and approaches the risk response as a responsible corporate citizen of the world.

The strategy involves staying responsive and alert to the global risk and doing all that is possible for monitoring our own response, reducing the negative footprints and creating new, positive environmental value



**42100.48 Sq m**  
**Build up area**



**2400 seating Capacity**



**2.44 L Units/Month**



**87.98% Recycled through In-house & Authorized partner**



**ISO : 14K, 45K, 9K ,27K & ISO 22301 certified**

## Downtime of the equipment = Zero

- No overloading of equipment
- No compromise on maintenance of equipment

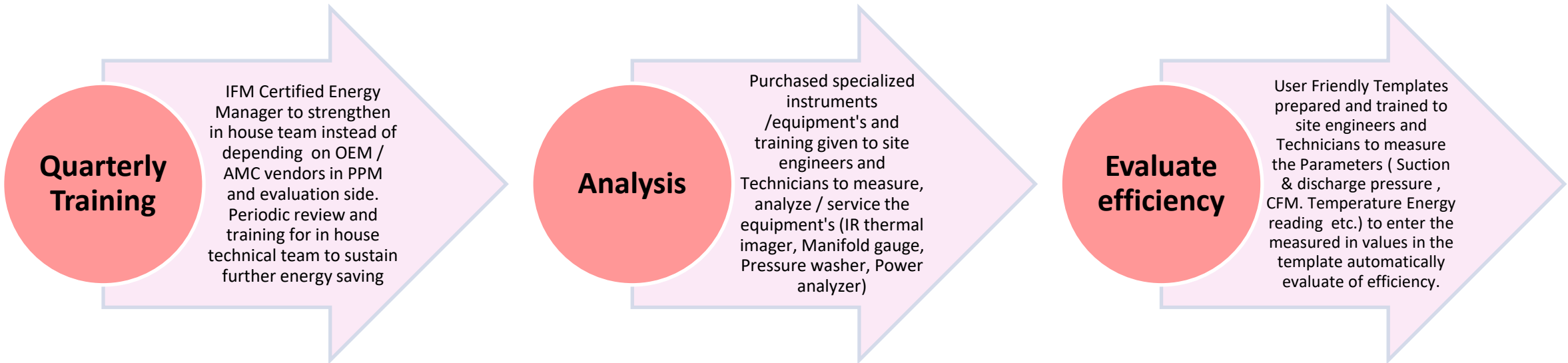
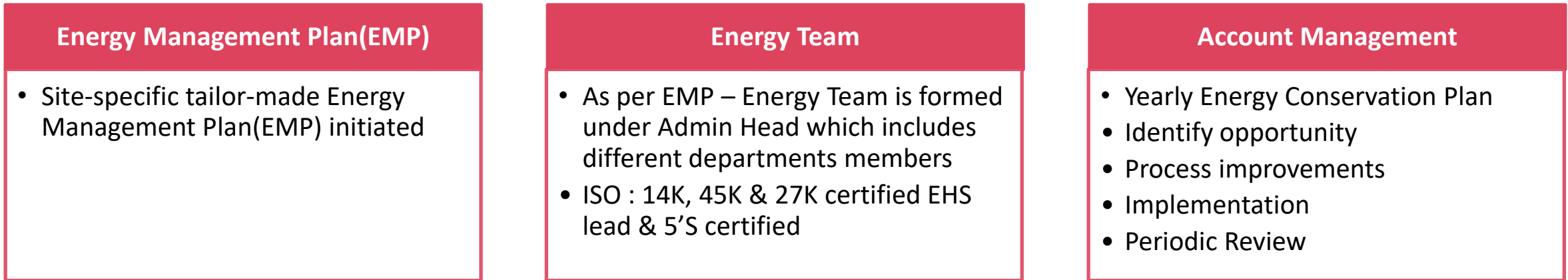
## Efficiency target = One (kWh/Sqft of builtup area)

- Peak efficiency of equipment's
- Pro-active maintenance

## Complaints relating to Mind's comfort = Zero

- No compromise on associate comfort as defined by Admin workspace policy
- Focus on energy wastage – Just in time comfort

# Energy Management Strategic Path



# Monitoring and control methodology

Activity	Frequency	Responsible	Accountable	Consulted	Informed
Daily energy	Daily	Facilities Team	Admin Location Manager	Admin MEP POC	Admin Ops lead
MEP review	Monthly	Facilities Team	MEP Location POC	Admin MEP city lead	Admin Location Manager
City review	Quarterly	Admin MEP City lead	Admin India Energy manager	MEP E&M India lead	Sustainability Team
Update to Admin Operation Lead	Quarterly	Admin Location Head	MEP India lead	Admin Ops lead	Sr. Management Team

# Best Practices

## HVAC

- Workplace Temperature policy standardized : 24°C to 25°C as per Energy Policy.
- Adjusting the equipment operating hours in line with the occupancy –Just in Time cooling.
- Duct cleaning ,Duct joint / collar leakage arrested.
- Using green chemical in the chiller line to reduce/avoid the blowdown
- Cooling units replaced with the new technology or modifications for energy conservation

## UPS & Lighting

- Proposing new technology or modifications in the existing system for energy conservation
- Implementation of UPS battery monitoring system to extended battery life.
- Optimization of UPS batteries AH capacity as per site load calculation.
- Tracking energy data for analyzing
- Replacement of CFL to LED
- Dedicated lighting switches are provided in closed rooms like AHU rooms and electrical rooms.

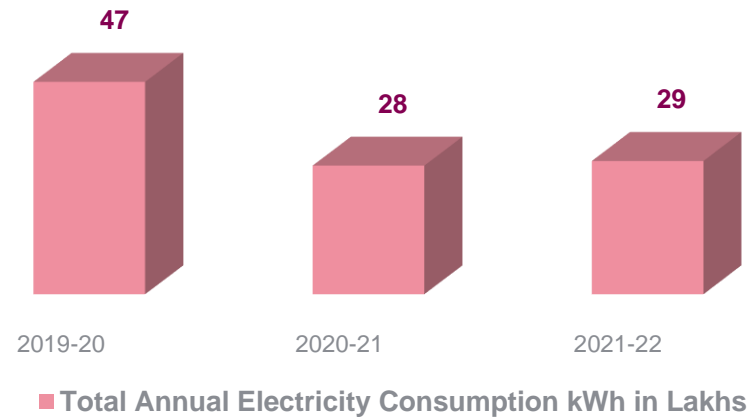
## Soft service

- Water less Urinals to reduce the water consumption.
- Installed Aero filters for reducing water consumption.
- Using Certified Green Seal Chemicals for HK activities.
- Feminine Hygiene System.
- No Plastic Zone-All plastic replaced with Steel
- Dry waste disposed through authorized recycler vendor
- Food waste and Garden waste converted to Compost by In-house team
- Monitoring and doing food & water tests periodically.
- Installed touch free Hand sanitizer dispensers at all entry points
- Placed social distance posters in various locations
- Sanitizing workplace areas on regular intervals.

# Energy Consumption Overview

Description	UOM	2019-20	2020-21	2021-22	%Change 2019 vs 22
Specific Electrical Energy Consumption	kWh /sq m	111	67.22	69.66	▼ -37%
Total Annual Electricity Consumption	KWh in Lakhs	46.732	28.299	29.325	▼ -37%
Total Annual Electricity Cost	INR in Lakhs	389.4	240.8	281.7	▼ -28%
Energy Saving	KWh in Lakhs	0.44	2.22	1.89	

### Energy Consumption Details

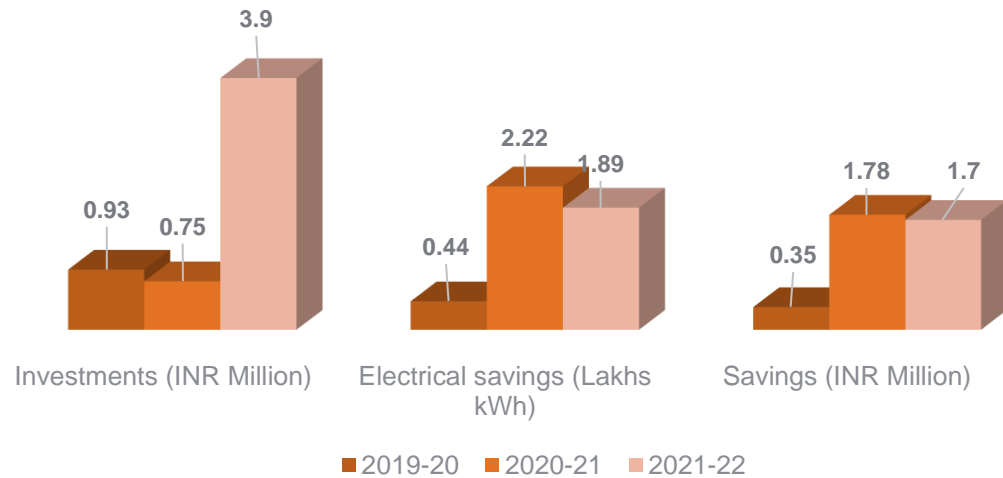




# Energy Saving Project Details

Year	No of Energy saving projects	Investments (INR Million)	Electrical savings (Lakhs kWh)	Savings (INR Million)	Impact on SEC (Electrical)
2019-20	1	0.93	0.44	0.35	0.93%
2020-21	2	0.75	2.22	1.78	7.85%
2021-22	2	3.9	1.89	1.7	6.45%
<b>Total</b>	<b>5</b>	<b>5.58</b>	<b>4.55</b>	<b>3.83</b>	

**Projects – Energy Saving details**



## 2019-20 : Ph-1 CFL (T5) to LED Replacement : 2019-20

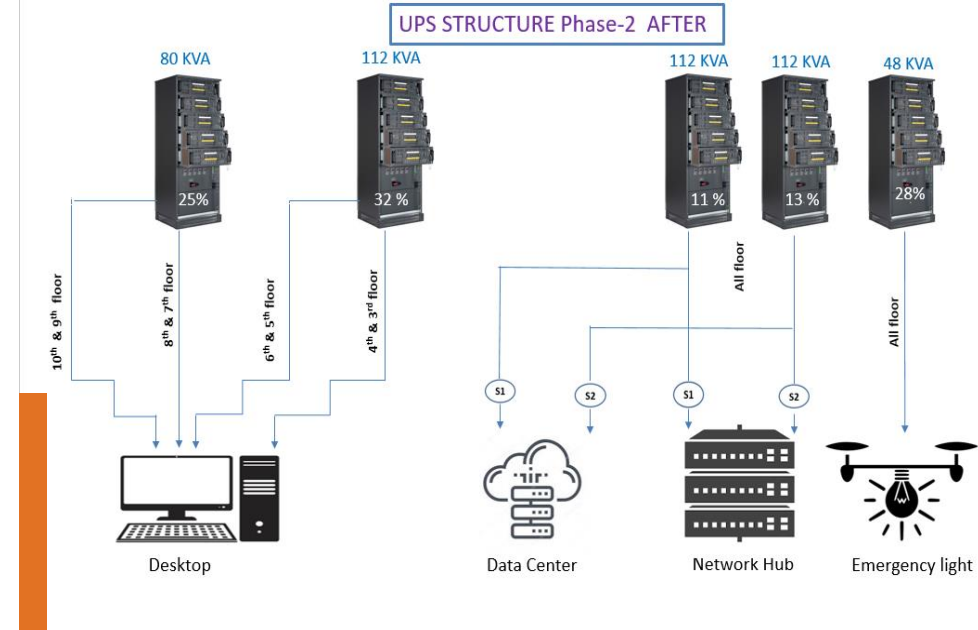
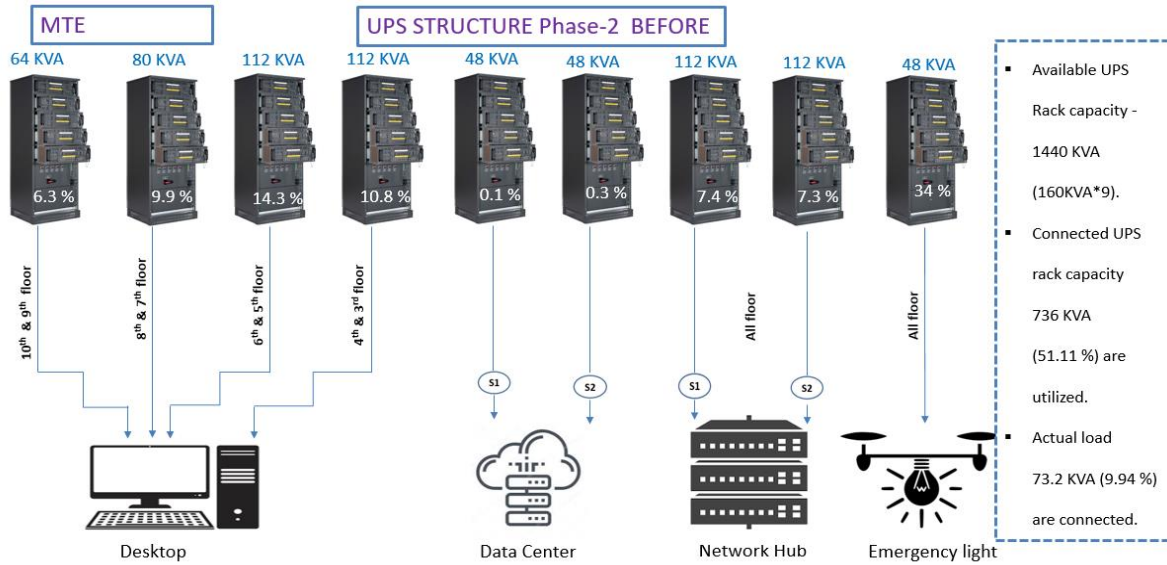


- ❖ CFL to LED – Changes of KW from 40.6 to 26.1
- ❖ Only replaced LED tubes and retained the fixture frames (Fittings 1450 Nos - 28w T5 tubes).

### Impact/Benefits

- Increase in Lux level
- E-Waste generation
- Metal waste generation avoided
- Lighting energy saving is **43500** KWH Per annum
- Cost saving on lighting energy consumption is INR **3.48** lakhs Per annum.
- Zero/No maintenance cost for **five year**.

# 2020-21 : UPS optimization at MTE



- ❖ Optimization programs towards power conservation, UPS of capacity 736 KVA and battery quantity 416 was reduced to 464 KVA and 256 no's respectively
- ❖ Finally UPS capacity 272 KVA and Battery quantity 256 numbers reduced
- ❖ Overall impact on the Environmental – Energy & waste generation is avoided

## Impact/Benefits

- AMC cost saving 6.7 Lakhs INR
- 0.41 Lakhs KHW Units saving per annum.
- 3.35 Lakhs INR Energy saving cost saving per annum.
- 9.68 Lakhs INR saving by reduction batteries

## 2021-22 : PAC Replacement



### Old System

- ❖ Precision Air Conditioning (PAC) units - capacity of **39 TR**.
- ❖ Outdated technologies – more than 10yrs old
- ❖ Power consumption being on the higher side

### Current System

- ❖ Replaced with New PAC – Capacity of 31TR
- ❖ Inverter technology - Variable speed compressors

### Impact/Benefits

- ✓ Driving efficiency up to 95%
- ✓ Modulate at compressor and EC fan levels to decrease the energy consumption.
- ✓ Energy saving **1.83 Lakh** units KWH per Annum
- ✓ Cost saving is INR **16.49** lakhs Per annum.

## Project implemented by In-house team - Kaizen



### Old System

- ❖ Water was pumped using Pressurized-pumping 3kg/cm<sup>2</sup> for cafeteria and hand washing
- ❖ Pump was running Constantly based on the usage
- ❖ Power consumption being on the higher side

### Current System

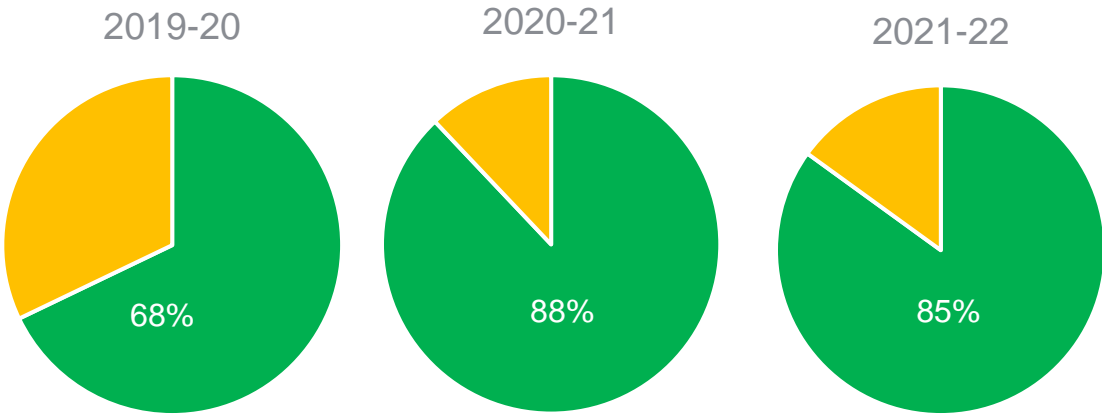
- ❖ Replaced with Gravitational pressure 2kg/cm<sup>2</sup> – Overhead tank
- ❖ Based on the consumption tank water refilled
- ❖ This currently act as an alternative source in case of emergency

### Impact/Benefits

- Energy saving **3380** units KWH per Annum
- Redundancy

# Renewable energy (RE) Utilization

Year	Type of Energy	Onsite/Offsite	Utilization Units	% of Overall Electrical Energy
2019-20	Solar	Offsite	3.17	68%
2020-21	Solar	Offsite	2.48	88%
2021-22	Solar	Offsite	2.49	85%



- RE Utilization Units
- Grid Units

- ❑ Our focus is on resource conservation and renewable energy
- ❑ We are striding on our clean energy approach with renewable energy component in the total energy mix stands healthy and robust at 87.8% for FY 2021-22
- ❑ We have committed to making our operations run through 100% renewable energy by 2025

**Impact :**

- Resource Conservation
- Carbon Emission reduction

# Mindtree Overall GHG Performance

Year	Scope 1 Emission	Scope 2 Emission	Scope 3 Emission	Ton of Co2 equivalent
2019-20	373.86	1276.37	1536.21	3186.44
2020-21	137.29	279.13	374.39	790.81
2021-22	462.2	404.84	478.54	1345.58

Scope 1 | Direct Emissions | Reduction due to better efficiency of our Diesel Generators

Scope 2 | Purchased Electricity | Reduction due to utilizing of renewable energy (Wheeling power) and efficiency improvement from the Energy Program .

- As a conscientious organization, we believe in and practice environmental stewardship.
- Our path involves energy conservation, emission reduction, renewable energy, and waste management practices, each with its own strategy and range of initiatives.
- We focus on making our operations and locations sustainable, in the true spirit of environmental responsibility



**E**

**Climate Change**  
**2030**  
Achieve carbon neutrality

**Green Tech & Innovation**  
**\$10 Mn**  
Cumulative investment to promote green tech by 2025

**Water Management**  
**2030**  
Achieve water neutrality

**30%**  
Reduction in Scope 1 & 2 emissions by 2025<sup>1</sup>

**20%**  
Reduction in Scope 3 emissions by 2025<sup>1</sup>

**100%**  
Renewable energy for internal operations by 2030

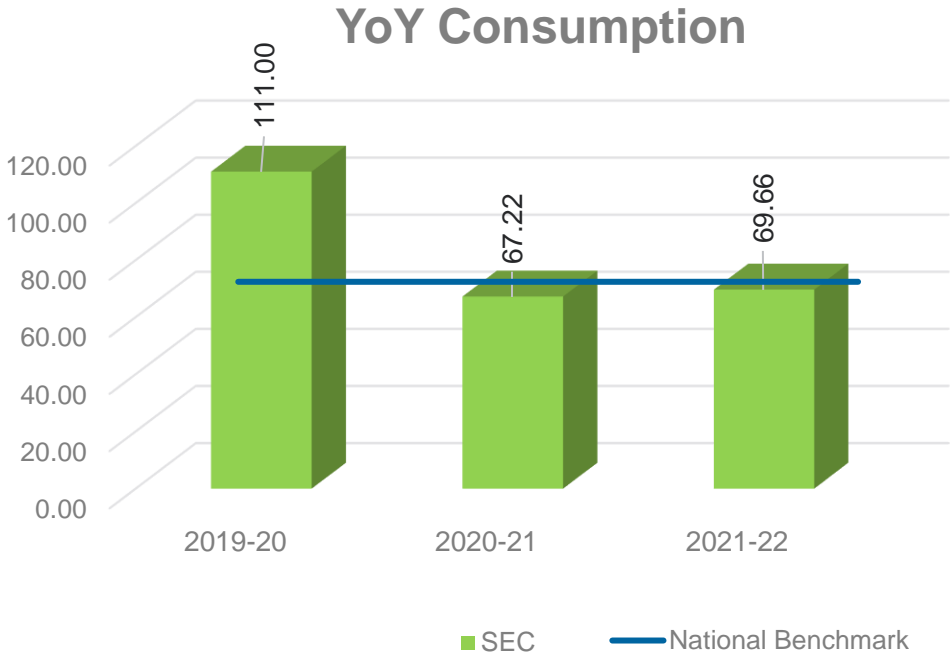
**Green Tech Offerings**  
Enable and support our clients with green-tech offerings to help them achieve their ESG targets

**25%**  
Per-capita water consumption reduction by 2025<sup>1</sup>

**100%**  
Water recycled in dedicated campuses by 2025

# Energy Benchmarking - SEC

Description	National Benchmark	2019-20	2020-21	2021-22	%Change 2019 vs 22
Specific Electrical Energy Consumption	84.76	111	67.22	69.66	-37%



Doing various energy trend analysis equipment wise ( UPS, Pumps, Chillers, AC Units Etc) Implemented the new technologies, best practices to conserve more energy.

Setting goals every year for energy savings with planned initiatives and allocating budget to execute the plan

The Competitor SEC (Specific Energy Consumption) of the building is 84.76 Kwh / Sqm



# Encon Projects FY2022-23

## UPS Optimization



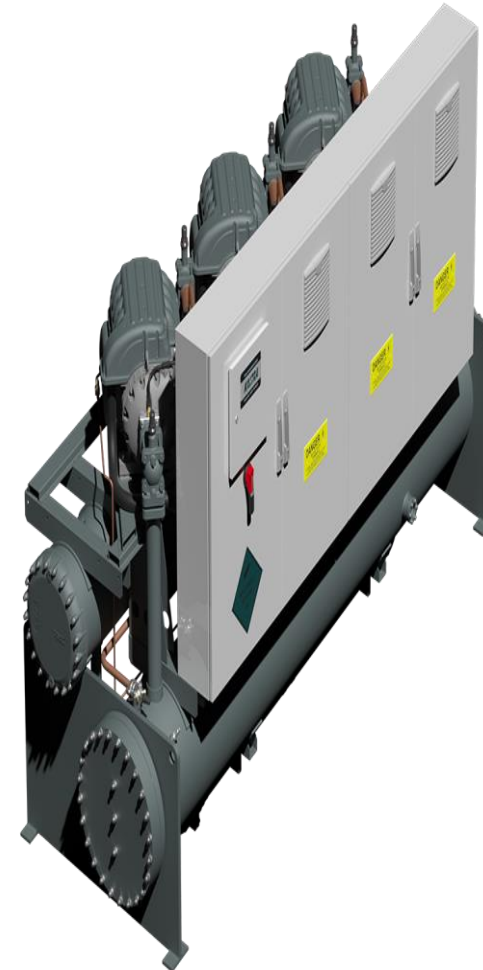
Plan :

- In Phase-1 we are planning to reduce installed capacity to 320 KVA from 500 by analyzing the load pattern from last two years including the future, there is scope for optimization of UPS by reducing the installed capacity.
- it will be of 36% lesser than the existing UPS capacity, in addition with reducing the cost of AC and DC capacitors.

Impacts

- New UPS will have an intelligent monitoring system
- HVAC and Space optimization
- Reduction in carbon footprint

## Installation of centrifugal Turbocore Compressor Chiller:



- Planning to replace the chiller due to efficiency and consuming high electricity.
- Existing compressors mechanical parts also has gone through wear and tear, most of the parts are not available in the market due to outdated model.
- Condensers are running with higher discharge pressure due to less efficiency and such condensation will leading to higher chiller water temperature.
- In summer we have to run Additional chiller with 300TR to meet the required temperatures.
- The existing Screw Chillers are less efficient and consumes more than 1.0kW/TR

# Earth Hour



**Mindtree**  
A Larsen & Toubro Group Company

**SUSTAINABILITY**  
Co-creating a meaningful future

Environment Social Governance

**60+**  
EARTH HOUR

An hour for **Earth** and for us  
**Switch off your lights for a brighter future**

**When?**  
Saturday | March 26, 2022  
8:30–9:30 p.m. (Your local time)

## 2022-Energy conserved in earth hour

Location	Unit saved in KW	Co2e reduced in Kgs
MTE	21	19.3

# Innovative approach – Interactive Garden



# Waste Management



**We recycled 96.09% of the waste generated in FY 2021-22**

- We approach waste management with the intent of generating less waste and minimizing the input to the landfill.
- The strategy is to adopt responsible disposal and maximize recycling and reuse.
- Periodic monitoring enables us to track our progress and meet our overall objective of reducing landfill burden.





Seek Safety

Aim Safety

Follow safety

Ensure Safety

Teach Safety

Yield Safety



## Nurture Young Minds & Develop Safety Culture

As we celebrate the *51<sup>st</sup> National Safety Day*, let us pledge to ensure the safety of our younger generation.

This year's theme is dedicated towards nurturing young minds and developing safety culture from an early age.

Let us commit to educate children about safety to help them take informed decisions and create a safe environment for them.

Their safety is our responsibility!

*Welcome to possible*

# Annual shutdown activity

## Annual Shutdown Maintenance | MTE

To ensure high availability of our critical equipment's & systems that are installed at our Workplace, Server room and Data center, We have carried out annual maintenance shutdown for the first time for all power systems at Mindtree MTE Facility.

### Key Highlights of Pre ASDM



Risk assessment



Thermography test



Collaboration with CIS, Projects and Partners



51 activities covered



Pre Shutdown for Non-critical equipment's



Logistic arrangements PPE, Tools & materials

### Key Highlights of ASDM

- Data Center and Labs - 250 KVA and 2\*30 KVA UPS AC and DC Capacitor replacement activity
- Redundancy /additional UPS supply to Data center server
- Hub room UPS display replacement
- UPS Panels and DB's preventive maintenance activity



78 Team members seamlessly completed this activity.



*Welcome to possible*

