

CII National Energy Award - Excellence in Energy Management



Mindtree

A Larsen & Toubro Group Company

Welcome to possible

Profile – Mindtree Limited

Mindtree Limited

Purpose-driven business technology partner helping clients harness digital technologies and new ways of working to transform business models, experiences, and operations.

With 22 years of Delivering Excellence with more than 43000 of Delivering Mindtree Minds along with more than 275 Active Clients, We help the world's leading companies use cutting-edge digital and cloud solutions for competitive differentiation.

Mindtree has won the prestigious Platinum Award for its sustainability report at the Vision Awards Annual Report Competition 2020–21 organized by the League of American Communications Professionals (LACP).

Mindtree operations spreaded across globe & most of the facilities has been certified & integrated with ISO 14001:2015-EMS ISO 45001:2018- OH&S, ISO 27K- ISMS, and ISO 22301-BCM. ISO 9K – QMS , ISO27701 – PIMS and also Well HSR (Health Safety Rated) Certified.

To know more about Mindtree's sustainability efforts including excellence in the energy management & Waste management...etc. Mindtree's sustainability detailed report click [here](#).

Mindtree Chennai Multi Tenanted Facility @ TRIL – Ramanujan IT City



Commencement

Ph I - 2012 : Ph II – 2013



Authority

SEZ, Unit 10th Floor , TRIL, Info park Ltd, Ramanujan Intellion Park, Taramani.



Area

Super Built-up Area – 247369 sqft
Carpet Area – 232455 sqft



Floor Details

Ph I – 5th & 6th Floor
Ph II – 10th , 11th & 12th Floor
Total Seats - 2223



24 * 7
Operation Support

DG/UPS – N+1 Redundancy
Digital security & safety surveillance

Mindtree Chennai Multi Tenanted Facility @ TRIL – Ramanujan IT City

The TRIL Campus Spread over 25.27 acres, and it is strategically located at the heart of Chennai's ultimate IT business location at Taramani which is the gateway to the city's rapidly developed IT Corridor.

- ✓ 100% fully automatic backup DG with N +1 configuration provided for lighting ,power and air conditioning
 - ✓ Four levels of physical & digital security systems
 - ✓ Main Entrance – Visitor Management, Vehicle Checks and Boom Barrier system,
 - ✓ GF Lift Lobby- Security checks and Flap Barrier system.
 - ✓ Mindtree premises - Restricted access control system.
 - ✓ Mindtree premises– Visitor Management and Physical security checks.
 - ✓ Five levels of car parking.
 - ✓ TRIL Campus is a LEED certified Green building Gold rated for Ph- I & Platinum rated for Ph-II. Also, Well HSR (Health Safety Rated) Certified.
 - ✓ IMS certified
 - ✓ ISO 9001- Quality Management Systems
 - ✓ ISO 14001 – Environment Management Systems
 - ✓ ISO 45001 – OHSAS
 - ✓ ISO 50001 – Energy Management Systems
- Mindtree Chennai Facility is also certified & integrated as follows ;
- ✓ ISO 14001:2015-EMS ISO 45001:2018- OH&S, ISO 27K- ISMS, and ISO 22301-BCM. ISO 9K – QMS , ISO27701 – PIMS and also Well HSR (Health Safety Rated) Certified.

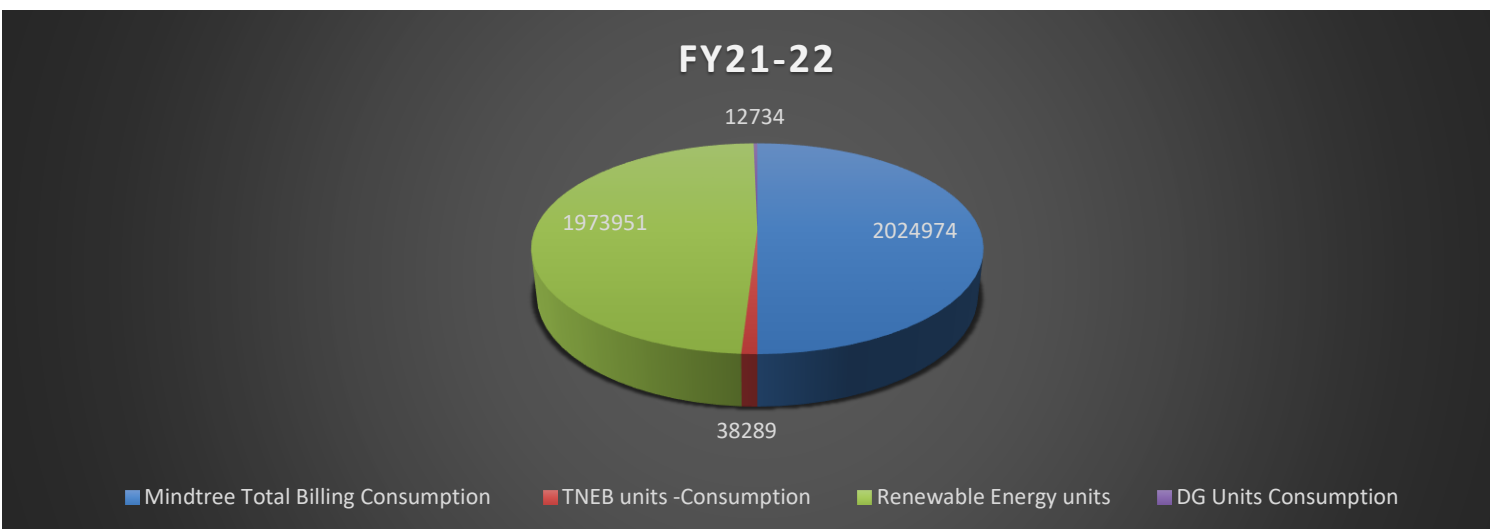
Energy Consumption Data FY- 2019-20 & 2020 -21

Month	Mindtree Total Billing Consumption	Mindtree Consumption breakup					
		TNEB units - Consumption	TNEB consumption %	Renewable Energy units	Renewable Energy consumption %	DG Units Consumption	DG units' consumption %
Apr-19	375514	285051	76%	88473	24%	1990	1%
May-19	380660	7868	2%	364062	96%	8729	2%
Jun-19	389508	18	0%	380139	98%	9351	2%
Jul-19	405878	1	0%	405877	100%	0	0%
Aug-19	358308	0	0%	358055	100%	253	0%
Sep-19	318610	0	0%	318446	100%	164	0%
Oct-19	351787	0	0%	349292	99%	2495	1%
Nov-19	374189	118228	32%	254903	68%	1058	0%
Dec-19	300199	218222	73%	81118	27%	859	0%
Jan-20	313392	206658	66%	105054	34%	1679	1%
Feb-20	305230	151242	50%	146578	48%	7410	2%
Mar-20	286960	139917	49%	147043	51%	0	0%

Month	Mindtree Total Billing Consumption	Mindtree Consumption breakup					
		TNEB units - Consumption	TNEB consumption %	Renewable Energy units	Renewable Energy consumption %	DG Units Consumption	DG units' consumption %
Apr-20	181188	27491	15%	153698	85%	0	0%
May-20	196816	0	0%	196816	100%	0	0%
Jun-20	185491	112	0.06%	185380	99.94%	0	0%
Jul-20	182637	18	0.01%	182411	99.88%	208	0%
Aug-20	183814	106	0.06%	183708	99.94%	0	0%
Sep-20	185704	198	0.11%	185506	99.89%	0	0%
Oct-20	186616	194	0.10%	185337	99.31%	1085	1%
Nov-20	161831	220	0.14%	159923	98.82%	1688	1%
Dec-20	145090	175	0.12%	144860	99.84%	56	0%
Jan-21	141862	156	0.11%	141706	99.89%	0	0%
Feb-21	143800	290	0.20%	138881	96.58%	4629	3%
Mar-21	165842	0	0%	165294	99.67%	549	0%

Energy Consumption Data FY- 2021-22

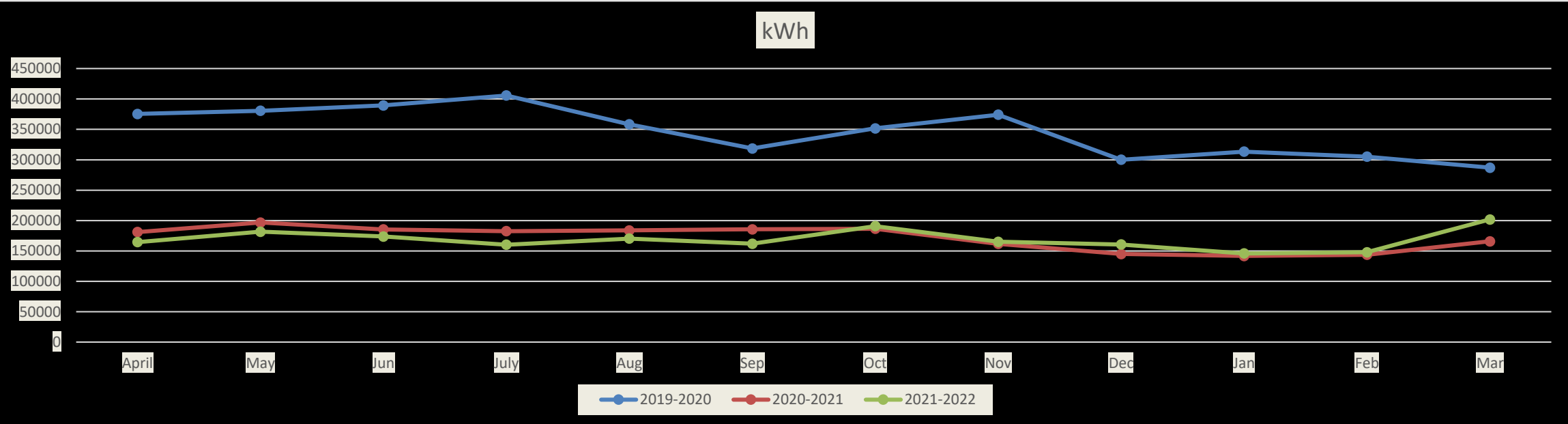
Month	Mindtree Total Billing Consumption	Mindtree Consumption breakup					
		TNEB units - Consumption	TNEB consumption %	Renewable Energy units	Renewable Energy consumption %	DG Units Consumption	DG units' consumption %
Apr-21	164702	35289	21.43%	128866	78.24%	547	0%
May-21	181628	1	0.00%	181627	100.00%	0	0%
Jun-21	173780	182	0.10%	173599	99.90%	0	0%
Jul-21	160284	165	0.10%	157361	98.18%	2758	2%
Aug-21	170400	0	0.00%	167614	98.36%	2786	2%
Sep-21	161909	619	0.38%	161290	99.62%	0	0%
Oct-21	190787	1904	1.00%	188680	98.90%	203	0%
Nov-21	165233	0	0.00%	165063	99.90%	169	0%
Dec-21	160724	128	0.08%	158341	98.52%	2255	1%
Jan-22	145925	0	0.00%	145496	99.71%	429	0%
Feb-22	147862	0	0.00%	147862	100.00%	0	0%
Mar-22	201739	0	0.00%	198153	98.22%	3586	2%



Building Design & Standards : Mindtree's Chennai Facility @ TRIL info park is combination of passive design and active systems provide compliance not only with Indian Energy Conservation Codes, but also the American Society of Heating, Refrigeration and Air-Conditioning Standards (ASHRAE). Energy consumption is approximately 15% lower than internationally recognized ASHRAE-energy compliance standards.

Overall Consumption (FY-2021-22) – 2024974 kWh

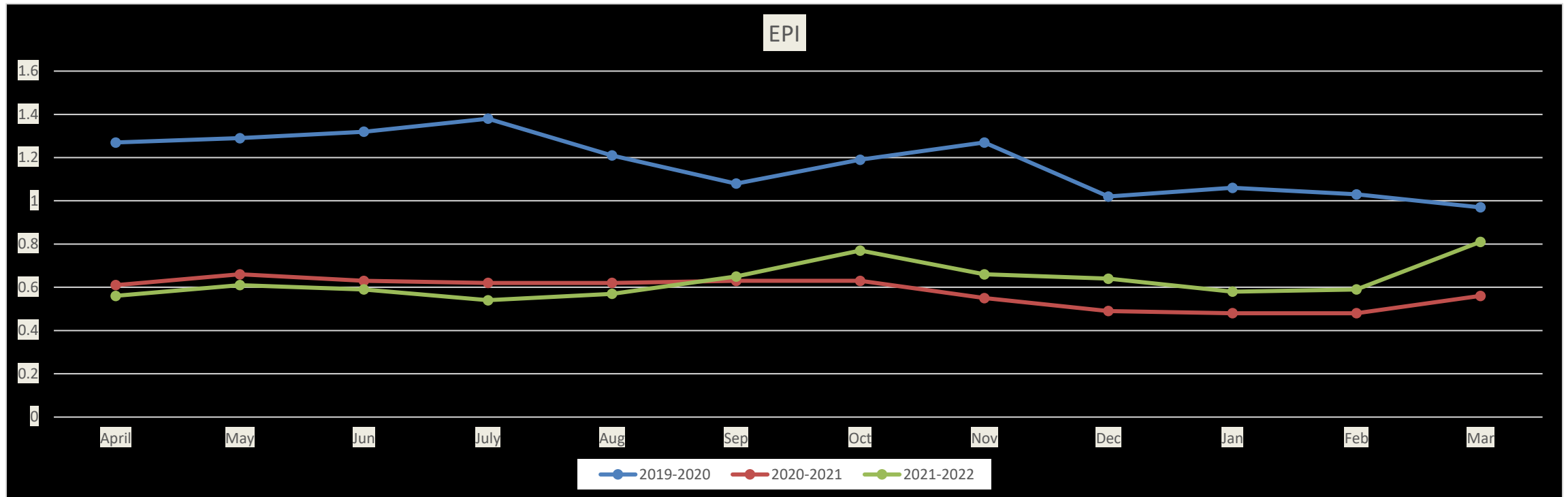
Energy Consumption Trend – kWh



FY /Month	April	May	Jun	July	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
2019-2020	375514	380660	389508	405878	358308	318610	351787	374189	300199	313392	305230	286960
2020-2021	181188	196816	185491	182637	183814	185704	186616	161831	145090	141862	143800	165842
2021-2022	164702	181628	173780	160284	170400	161909	190787	165233	160724	145925	147862	201739

Inference : Energy consumption is on peak during in pre covid period FY19-20 , Substantially reduced during post covid WFH period & gradual increase on the account of RTO/Office resumption during FY21-22.

Energy Consumption Trend – EPI



FY /Month	April	May	Jun	July	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
2019-2020	1.27	1.29	1.32	1.38	1.21	1.08	1.19	1.27	1.02	1.06	1.03	0.97
2020-2021	0.61	0.66	0.63	0.62	0.62	0.63	0.63	0.55	0.49	0.48	0.48	0.56
2021-2022	0.56	0.61	0.59	0.54	0.57	0.65	0.77	0.66	0.64	0.58	0.59	0.81

Energy saving projects implemented FY-19-20 , 20-21

No	Title of Project	Year	Annual Electrical Saving (kWh)	Annual Electrical Cost Saving (Rs million)	Annual Thermal Saving		Annual Thermal Cost Saving (Rs million)	Total Annual Savings (Rs million)	Investment Made (Rs million)
					Quantity	Unit of Measurement			
1	Installation & enhancement of LED down lighter from CFL lamps on the account of energy conservation	2019-2020	86247	0.8	0	0	0	0.8	1.2
2	Hybrid New UPS has been introduced by replacing the old higher capacity UPS at Hardy block. Which contributes to huge energy conservation	2019-2020	127503	1.16	0	0	0	1.16	1.4
3	Downsizing of Neville Block UPS systems & Batteries based on operational load requirement which results in energy savings of 73,213 KWH per Annum.	2020-2021	73213	0.5	0	0	0	0.5	1.9

Information on achieving National & Global Benchmark

Mindtree has been ranked 10th among Asia-Pacific's top 200 companies in Nikkei Asia's inaugural Asia-Pacific Climate Leaders survey, done in partnership with the Financial Times and data provider Statista.

Mindtree achieved the distinction among businesses from 12 Asian countries and territories – and ranked the highest among Indian IT companies – for achieving the greatest reduction in greenhouse gas (GHG) emissions intensity over five years from 2015 through 2020. Aligned with its revenue growth, Mindtree's year-over-year reduction of core emissions during this period stood at 23.7%.

The application period ran from November 2021 to February 2022 during which Statista scrutinized publicly available data of more than 2,000 companies in the Asia-Pacific region.

Mindtree's ranking further validates Mindtree's commitment to the cause of climate change and the efficacy of our various initiatives, stringent governance, and transparent reporting towards ensuring that our ESG objectives are achieved.

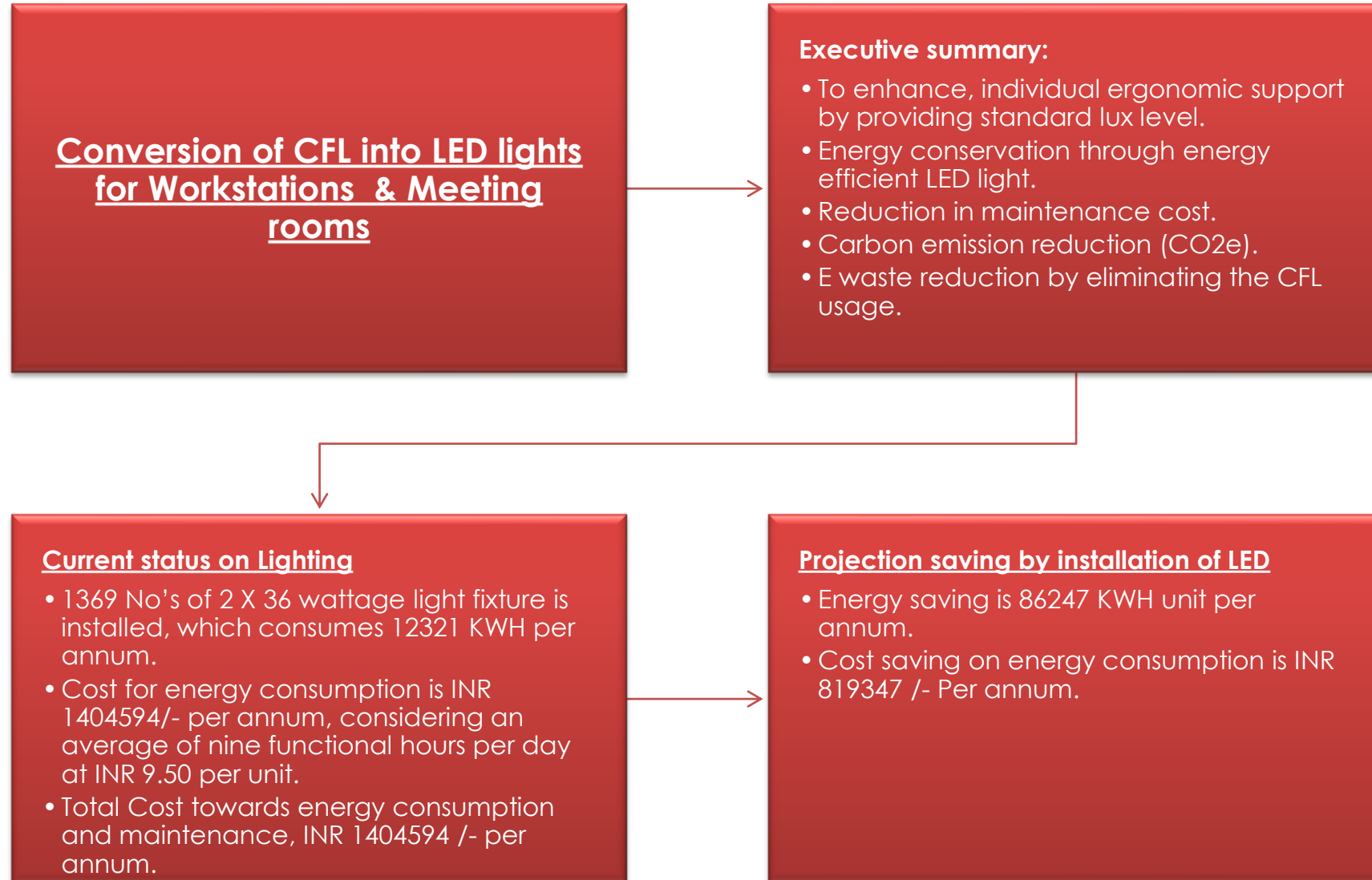
As a responsible organization, Mindtree have executed through the deployment of several self-implemented and self-owned carbon offset projects and programs towards carbon neutral. For more information, please visit [FT.com](https://www.ft.com) and [Nikkei Asia](https://www.nikkeiasia.com).

To know more about Mindtree's sustainability efforts including excellence in the energy management & Waste management...etc. Mindtree's sustainability detailed report click [here](#).

Teamwork, Employee Involvement & Monitoring

- ✓ Mindtree's MEP team ensured to achieve excellence in the energy management ,regular monitoring & tracking system has been governed through the fully digitalized including IOT systems are in place. Same process has been synchronized with centralized IBMS system by TRIL.
- ✓ Regular scheduled top management's review meetings are conducted properly as per the defined framework.
- ✓ As per the framework of ESG program dedicated budget has been allocated towards implementation of energy management programs
- ✓ Have trained and encouraging frontline team members of Electricians and HVAC for energy conservation in day-today operation and having regular consistency of monitoring consumption pattern and taking proactive measures by cutting down the unnecessary power elements based on the usage & occupancy level wherever possible. Pre published Annual weekly training calendars has been tracked appropriately.
- ✓ Same kind of training programs are conducted for supervisory / executive level team members as well by the internal & external Team's.
- ✓ To Ensure all employees involvement there are several internal & external awareness training programs has been conducted as per the scheduled framework.

Energy Saving Projects implemented in last two years (FY-19-20, 20-21)



Energy Saving Projects implemented in last two years (FY-19-20, 20-21)

Energy Saving Calculations & ROI

SI No	Description	CFL	LED
A	CFL details of all Location	2x18W	10W
	Dimension in mm (Outer dia)	194	175
	Dimension in mm (Inner dia)	164	NA
1	MTC Phase-1	894	894
2	MTC Phase-2	475	475
B	Luminaire Quantity in Total No's	1369	1369
	Total power consumption per luminaire in W	49284	20535
	Usage of lamp per day in hours (Average)	12	12
	Total working days/annum	250	250
	Total power consumption per luminaire in KW per year	12321	5134
	Total usage of system per annum in hours	3000	3000
	Total energy consumption per annum in KWH	147852	61605
	Electricity charges in Rs	9.5	9.5
	Total electricity charges per annum for system in Rs	1404594	585248
	Price per LED luminaire in Rs		768
	Installtion cost		105
	Total amount of LED luminaire in Rs		1195137
	Energy saving		86247
	Cost Saving		819347
			Cost summary
			Pentagon
	Total amount of LED luminaire in Rs		1443069
	Total Energy saving		86247
	Total Cost Saving		819347
	ROI in months		21.13

Energy Saving Projects implemented in last two years (FY-19-20, 20-21)

Conversion of static UPS to Modular UPS system / Semi Modular system

Executive summary:

- Attaining energy optimization through Modular UPS system / Semi Modular UPS System
- Equipment warranty is effective for 3 yrs from installation there by saving AMC cost for 3 yrs for the old equipment.
- Redundancy in case of failure / fault in one module as the standby power can be obtained from other modules
- Loads can be connected to the UPS only according to the present occupation of the floor by inserting required modules.
- Carbon emission reduction (CO₂e).

Current Status on UPS System

- Hardy block 4 nos of 80 KVA Stand-alone UPS batteries life span period got over as it reached more than 6 years ,
- Based on the life span of the batteries IR test has been conducted to identify weak batteries considering age factor , In addition to that Battery monitoring system were installed in all the battery to indicate the battery condition instantly.
- As a result of the reports , 15 nos of batteries were found to be weak as per the IR test report from M/s Socomec and it has been replaced from the existing buffer batteries which has been connected previously for additional back up purpose, Now that considering the lesser load on UPS system additional healthy batteries were removed and replaced in the place of weaker batteries, Now the batteries and UPS system working seamlessly with Battery monitoring system in place.

Energy Saving Projects implemented in last two years (FY-19-20, 20-21)

- considering the age factor of batteries and stand-alone UPS and the present requirement of load were found under utilization of UPS system with higher on power consumption. And there were no scope for requirement on additional loads with this existing infrastructure in near future.
- Considering the above factors, it has been proposed for installing only 2 no's of 40 KVA (80 KVA) Modular UPS instead of 4 no's of 80 KVA (320 KVA) existing UPS system to cater the actual requirement of the load and this would create remarkable impact on energy conservation.
- Following were the quantifiable energy conservation can be attained through this changes.



- In Hardy Block UPS system 80KVA * 5 No's.
- Existing load availability in 80 KVA UPS is: 10% (Average) Cost for energy consumption is INR 1640012/- per annum and consider INR 9.10 per unit cost.
- **Projection saving by installation of UPS**
- Energy saving is 127503 KWH unit per annum.
- Cost saving on energy consumption is INR 1160284/- Per annum.
- Total Cost saving energy consumption and maintenance, INR 1560284/- per annum
- AMC cost for Old UPS (4 X 80 KVA = 320 KVA) can be saved for one year and further AMC charges for new UPS 2 X 40 KVA will be only the AMC charges for next consecutive years.

Energy Saving Projects implemented in last two years (FY-19-20, 20-21)

Downsizing of UPS for Neville block

Executive summary:

- To enhance effective utilization of UPS as per the actual load requirement, Present UPS Capacity of 760 KVA has been downsized to 520 KVA.
- Energy conservation in terms of 73213 KWH per annum units by Optimizing, Transformers & batteries which impacts directly on cost saving.
- Reduction of excessive batteries & Carbon foot print

Existing system:

- At Neville block 10th, 11th & 12th floor (A3), Total 11 no's (760 KVA) of UPS system has been operated and planned to minimize the system to 6 no's (520 KVA) of UPS.
- Batteries of Total existing 448 no's are due for replacement and it has been replaced with 280 no's as per the UPS optimization plan.

Energy Saving Calculations & ROI

ROI Calculation			
Power Loss calculation			
Description	Proposed	Existing UPS	
Installed KVA	520	760	
Load PF	0.9	0.9	
TOTAL LOAD IN KVA	101	101	
TOTAL LOAD IN KW	91	91	
Running period in hrs	8760	8760	
Average % load	19.4%	13.3%	
AC-AC EFFICIENCY	82.0%	80%	
Input power consumption in KW	111	114	
Average Power Tariff EB= Inr 8, DG = Inr 19 Avg= 8	8.43	8.43	
TOTAL Electricity charges for the power	Rs. 8,186,188	Rs. 8,390,843	
Total power consumption	KWH 1,023,273	KWH 1,048,855	
COOLING LOSSES CALCULATION			
AC required in TR= UPS Loss in KW/3.517	15.30	19.60	
Cooling Unit power consumption AC in TR X 1,2 KW	18.36	23.52	
TOTAL Electricity charges for cooling the UPS	Rs. 1,355,827	Rs. 1,736,877	
Total power consumption	KWH 169,478	KWH 217,110	
Total power consumption UPS +HVAC/ Annum	KWH 1,192,752	KWH 1,265,965	
Total power Energy costUPS +HVAC / Annum	Rs. 9,542,015	Rs. 10,127,719	
Total Energy Saving per annum	KWH 73,213	NA	
Total energy cost saving per annum	Rs. 585,704	NA	
SAVINGS CALCULATION			
Saving cost (AMC+Byback)	INR1,485,160	NA	
Energy Cost saving	Rs. 585,704		
Total Cost saving	Rs. 2,070,864		
Total Investment Cost	Rs. 1,994,535	NA	
ROI IN YEAR	1.0		
ROI IN MONTHS	12		

Waste Management – Key highlights

Eradication of Plastic waste /Dustbins by replacing with common SS bins along with waste segregation compartment all around inside the premises.

Garbage liners are upgraded with Biodegradable inline with the GCC policies.

Organic waste compositor plant installed at builder premises to recycle the food waste and generating manures out of it.

Tissue waste & Carton waste are sent for recycling from the builder end.

Regular monitoring of Mixed Solid waste is being carried out and segregated at the yard by the dedicated team from the builder end.

Annual Targets are evaluated against waste reduction/recycling percentage YOY.

Common utility @ TRIL -MTC - Utilization of Renewable Energy Sources by the Base builder

Description	FY19-20	FY20-21	FY21-22
Onsite solar power in units	8,71,983	7,78,973	7,73,312
Offsite solar power in units	-	-	51,63,932
Offsite wind power in units	5,55,33,128	3,45,80,573	2,90,04,041

GHG Emission and indoor air quality

GHG Emission is covered on the following parameter as GRI regular reporting in terms of Employee Commute , Refrigerant gas , Freight & Generation of waste.

Indoor Air quality checks conducted at premises and evaluation is carried out based on the below parameters.

To know more about Mindtree's sustainability efforts including excellence in the energy management & Waste management...etc. Mindtree's sustainability detailed report click [here](#).

S. NO	SCOPE OF ANALYSIS	UNITS	STD
1	Air movements (At work station with in occupied zone)		≤ 0.25m /sec
2	Carbon Di oxide (CO ₂)	PPM	< 850
3	Carbon Mono oxide (CO)	PPM	< 9
4	Oxides of Nitrogen (NO _x)	µg/m ³	NS
5	Oxygen (O ₂)	%	NS
6	Relative Humidity %	%	20-60
7	Respirable suspended Particulate Matter(PM 10)	µg/m ³	NS
8	Temperature	°C	21-23
9	Volatile Organic Compound (VOC)	PPM	NS
10	Bacterial Total Viable Count (TVC)*	cfu/m ³	NS
11	Yeast Count*	cfu/m ³	NS
12	Mould Count*	cfu/m ³	NS
13	Legionella spp.*	cfu/m ³	NS
15	Streptococci	µg/m ⁸	
16	Staphylococci*	cfm/m ³	

Achievements

Mindtree chennai received Guinness world record organized by TRIL management on the effective participation for sustainability program. By which Mindtree name has been reflected first time in Guinness world record book.



Dear Participant,

I am delighted to present you with this Certificate of Participation to recognize your important contribution to this GUINNESS WORLD RECORDS title.

At Guinness World Records, we have been measuring, verifying and recording the world's achievements since 1954. Today, our mission is to maintain an archive of records that inspires, engages and entertains people across the globe, and celebrates the world's best.

The record that you participated in is now one of the 40,000 world records that are held on the GUINNESS WORLD RECORDS database. Of the thousands of applications we receive every month, less than 5% actually make it to become an official entry in our archive. As a member of this select group, you should be extremely proud of your achievement.

On behalf of Guinness World Records, I would like to personally congratulate you on your GUINNESS WORLD RECORDS achievement.

Allyson





Welcome to possible

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