

Presentation - Olympia Technology Park

OLYMPIA



By
N.SENTHIL KUMAR
DGM

1. About Olympia Group



Background:

The **Olympia Group** was born out of the alliance of Two strong business houses –
The **Khivraj Group** & **The MK Group**.

The Chennai-based renowned **Khivraj Group**, has over 5 decades of successful business history spanning various industries such as Real Estate, Automobile, Retail and Wind Power Generation Led by Mr. Ajit Kumar Chordia & Mr Bharat Kumar Chordia.

Mr Ajit Kumar Chordia, the Managing Director is also an Founding member of IGBC and actively involved in IGBC.

The MK Group Kolkata have an impressive track record of large-scale property development in several sectors of Real Estate - MSB Residential Apartments, Clubhouses and Shopping Malls among others represented by Mr Chandrakant Kankaria.



Mr. Ajit Kumar
Chordia



Mr. Chandrakant
Kankaria



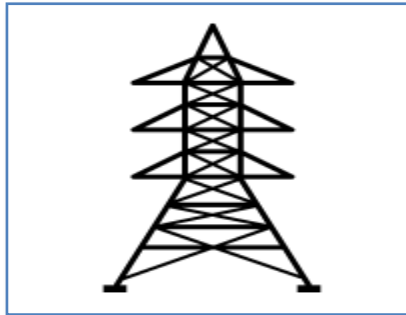
Mr. Bharat
Kumar Chordia



2. OTP Energy Consumption Overview

Energy Sources of Olympia Technology Park

TNEB GRID



WIND ENERGY



DG - CAPTIVE



**OLYMPIA
ENERGY
SOURCES**

ROOF TOP SOLAR

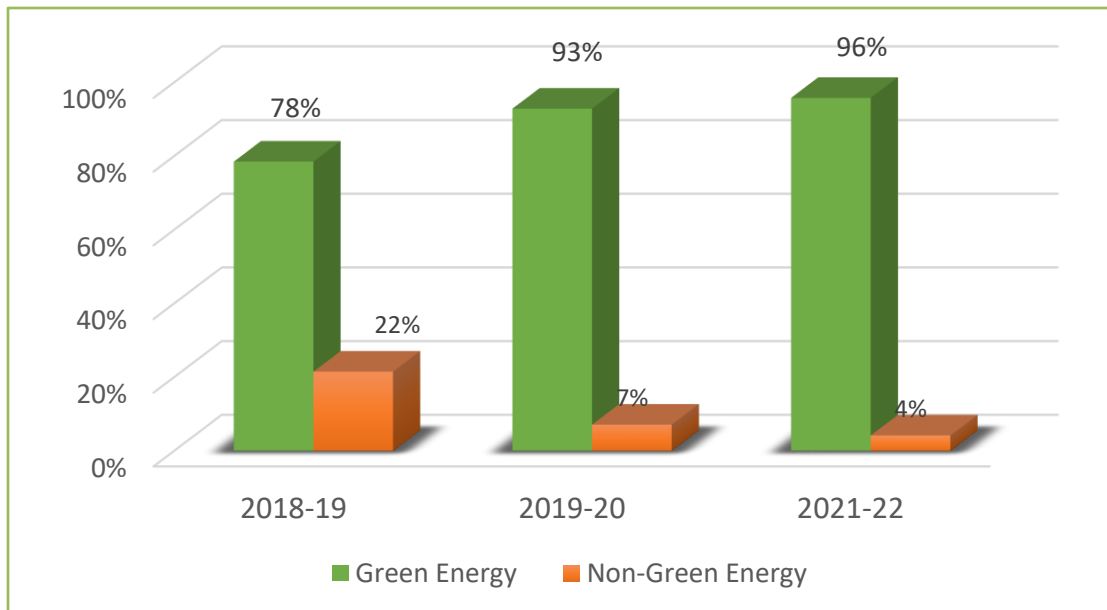


Energy Consumption Details for Past 3 Years



Source of Energy	Units in KWh		
	2019-20	2020-21	2021-22
TNEB	5612421	1090435	618329
Diesel Generators	705110	284610	117490
Solar Energy	1628935	1475860	1552610
Wind Energy	21433293	16454976	15260330
Total	29379759	19305881	17548759

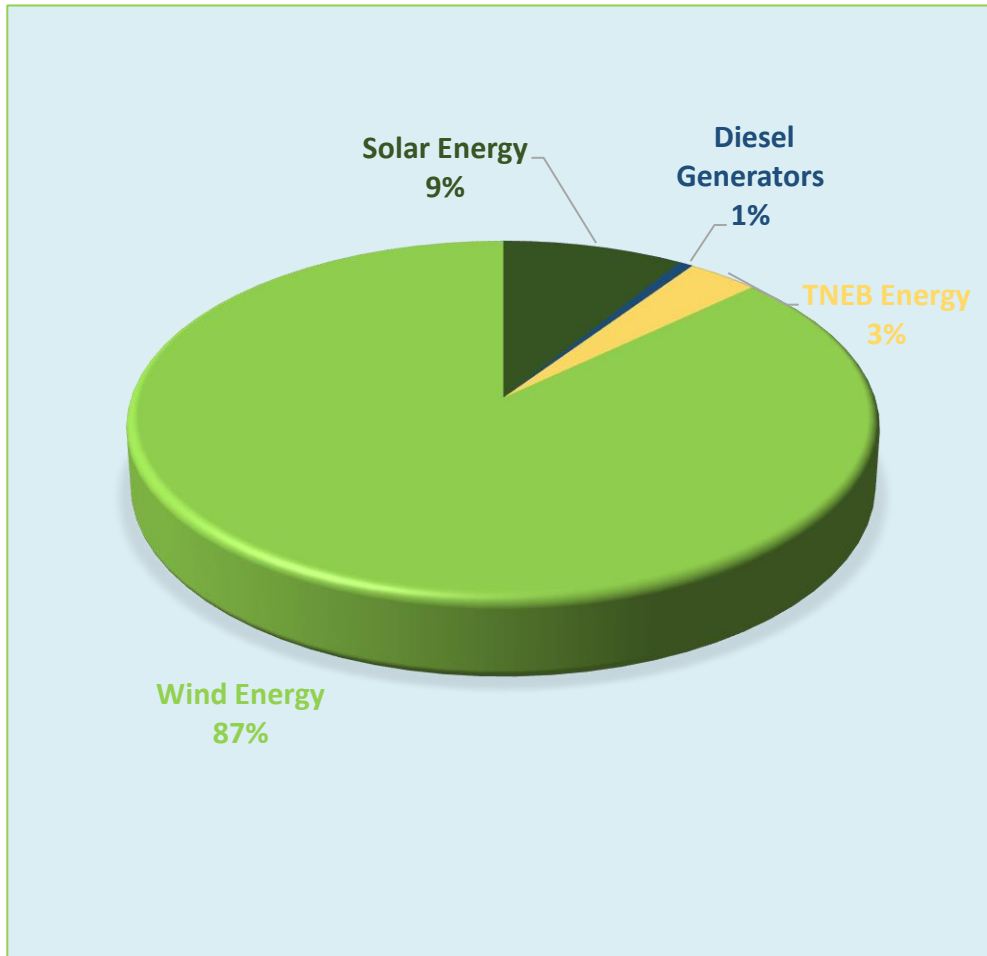
Description	Units in KWh		
	2019-20	2020-21	2021-22
Green Energy	23062228	17930836	16812940
Non-Green Energy	6317531	1375045	735819
Total	29379759	19305881	17548759



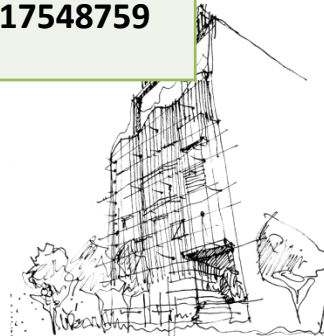
* Reduction of Energy Consumption FY 2021-22 in the view of employees continued the WFH option.



Energy Consumption FY 2021-22

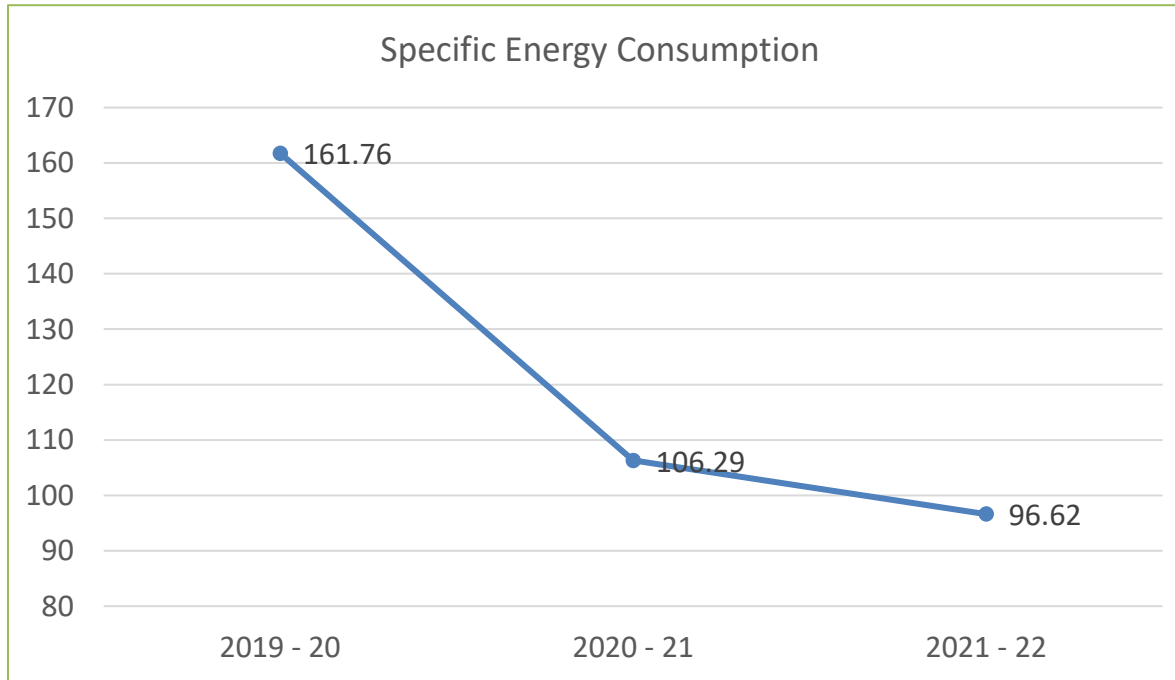


Description of Energy Source	Energy Consumption (in KWh)
TNEB	618329
Diesel Generators	117490
Solar Energy	1552610
Wind Energy	15260330
Total	17548759



3. OTP Specific Energy Consumption

Parameters	Units	2019 - 20	2020 - 21	2021 - 22
Total Annual Energy Consumption	KWh	29379759	19305881	17548759
Built Up Area	Sq. M	181631	181631	181631
Specific Electrical Energy Consumption	KWh / Sq.M	161.76	106.29	96.62



Year on Year Improvement of Specific Energy Consumption

Description	2019-20	2020-21	2021-22
Specific Energy Consumption	161.76	106.29	96.62
Variation	2.60	55.46	9.67
Improvement %	1.61%	52.18%	10.01%

Reasons for Improvement in SEC :

- Installation of Auto Condenser Coil Cleaning System for 750 TR Water Cooled Chiller -3 Nos.
- Conversion of LED lightings in Office Area at Altius – B & C Block 5th floor, 6th Floor and 9th Floor.
- Some of the Employees Continued the function through work from home option.



4. Information on Competitors, National & Global Benchmark

SEC Benchmark - Competitor:

Sl.No	Competitor Name	SEC
1	Cognizant Technology Solutions , SEZ, Siruseri, Chennai	70.24



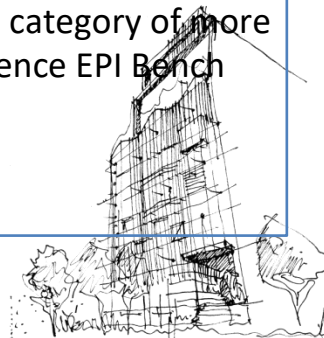
EPI Bench Mark

National SEC Bench Mark (BEE):

EPI Bench Mark for Office Buildings

Climate Zone	Less than 50% AC	More than 50% AC
Warm & Humid	101	182
Composite	85	179
Hot & Dry	90	173
Moderate	94	179

- Office Building EPI depends upon multiple factors like climate zone, operating hours, occupancy trends etc..
- Olympia Tech Park Campus comes under mixed category. Combination of Office, Data labs, Food court & Amenities, Banks, ATM and GYM etc. with 95% Air conditioned space.
- Chennai comes under Warm & Humid Climate Zone and our campus comes under the category of more than 50 % Airconditioned area. Hence EPI Bench Mark as BEE - **182**.
- Our EPI FY 2021-22 - **96.62**



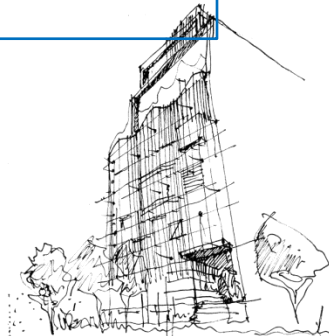
Road Map for Further Improvement of SEC

- Increase the usage of renewable energy from **95 %** to **100 %**
- Consistent Improvement of EPI on year on year.
- Enhancement of onsite solar energy from **1.1 MW** to **1.5 MW** by replacing the upgraded PV Panels in terrace area.

Major Encon Project Planned FY 2022-23

- Conversion of Existing PL Light Fittings into LED Light Fittings in 2nd,3rd,4th & 5th Floor Office Area at Fortius Block and 8th Floor in Altius B & C Block

Project Cost – INR **3.15** Millions.

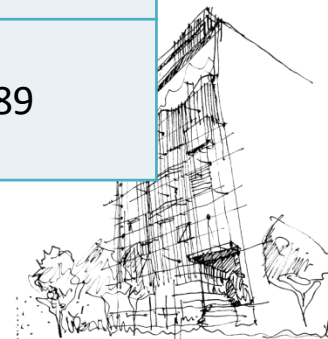


5. Energy Savings Projects Implemented in last 3 Years

Important Projects in 2019- 20, 2020-21 & 2021-22

- Conversion of PL light fittings into LED light fitting in various locations of Office Premises.
- Conversion of DX AC Units into Chilled water operated CSU units in lobby area .
- Installation of Auto Condenser Coil Cleaning System for 750 TR WCC Chiller -3 Nos

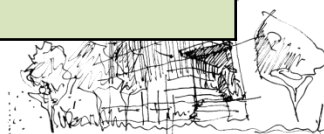
Year	No of Energy Saving Projects	Investments (in Million INR)	Energy Saving (in MWh)	Cost Savings (in Million INR)
2019 -20	2	1.42	83.32	0.75
2020 -21	3	1.63	135.49	1.22
2021 -22	4	4.39	362.24	2.89



Encon Project Implemented in 2021-22

Installation of Auto Condenser Coil Cleaning System for WCC Chiller -3 Nos

Source of Idea	Solution	Advantages
<ul style="list-style-type: none">• In our Tech Park, the STP recycled water is utilized as a heat exchanging media, so that the Water-Cooled Chiller condenser tubes got frequent fouling due to sediment, biological growth and corrosive products.• Due to above-mentioned reason, chiller performance got decreased by increasing of condenser approach and also the Electrical energy consumption is increased.	<ul style="list-style-type: none">▪ Reviewing this challenges, worked out the option and get the Management advice to Install ACC System.▪ Upon the approval, Installed and Commissioned the System in the Water-cooled chiller.▪ Systems cycles are programmed, and the sponge balls circulated in the tubes to take place automatically every 30 minutes.▪ The chiller is running constant condenser approach and saving the energy.▪ One Time Investment Cost is ₹14.63 L for 3 Nos of WCC.▪ Annual Operation Cost is ₹ 60 K	<ul style="list-style-type: none">▪ Extend the life of capital equipment and Optimize Heat transfer Performance.▪ Prevents Corrosion build up▪ Eliminates Mechanical or Chemical cleaning and costly downtime.▪ Minimum One Time Investment Cost▪ ROI 5.33 Months



Encon Project Implemented in 2021-22

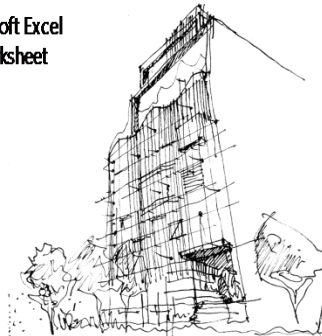
Installation of Auto Condenser Coil Cleaning System for WCC Chiller -3 Nos



Description	Before Installation of ACCCS	After Installation of ACCCS
Average Energy Consumption of WCC Chiller (in KWh) / Hour / Chiller	384.25	334.25
Savings in Kwh	50	
Average Chiller Run Hrs / Day	10	
Qty of WCC Chiller Available	3	
Savings in Kwh/Annum	468000	
Uni Rate in INR	8	
Savings in INR/Annum	3744000	
Expenses Spent for ACCCS (in INR)	1663000	
ROI in Months	5.33	

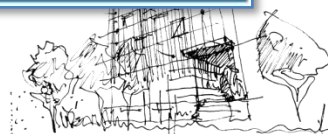
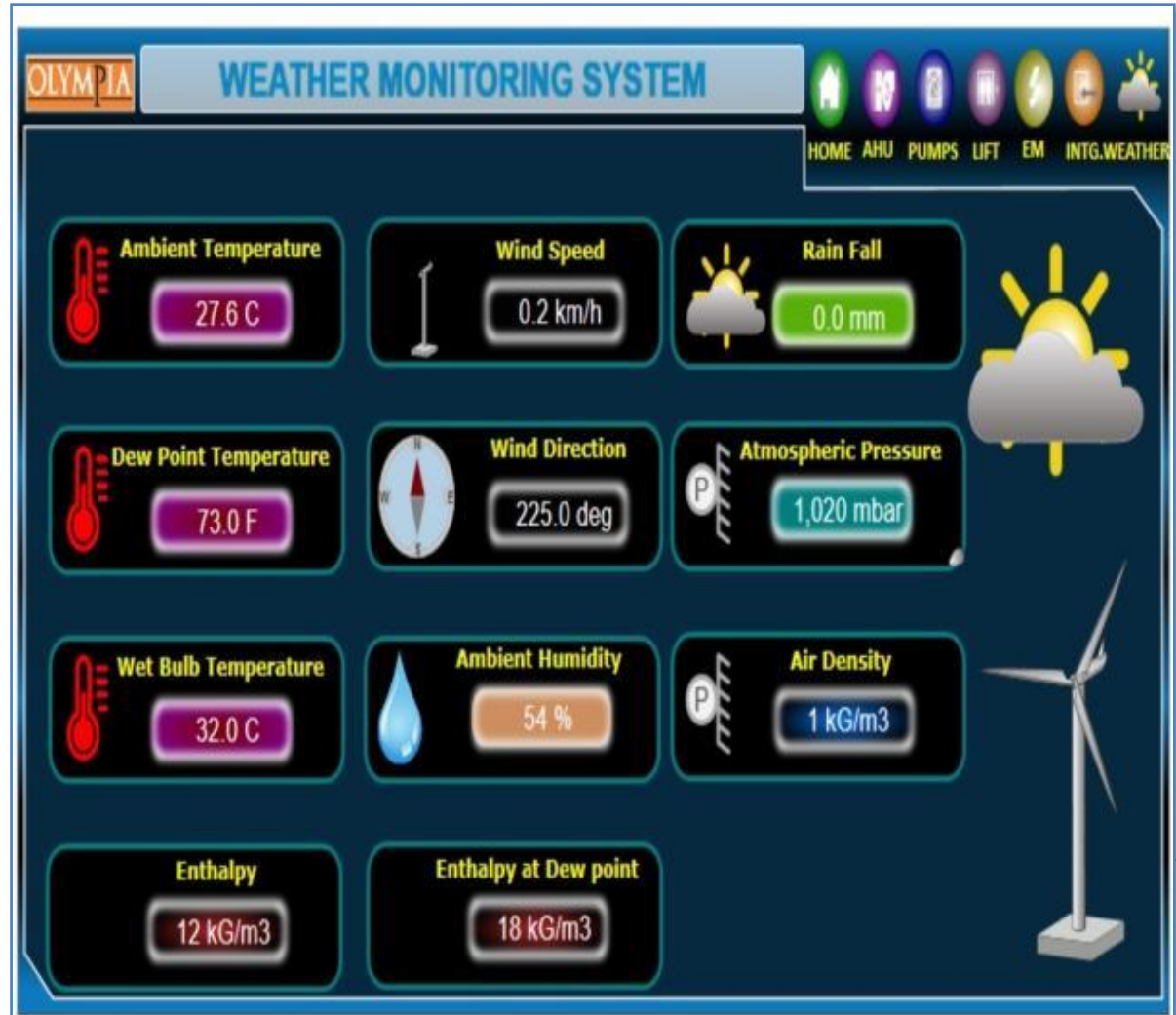


Microsoft Excel Worksheet



6. Innovative Projects Implemented

Weather Monitoring Station



Innovative Projects Implemented

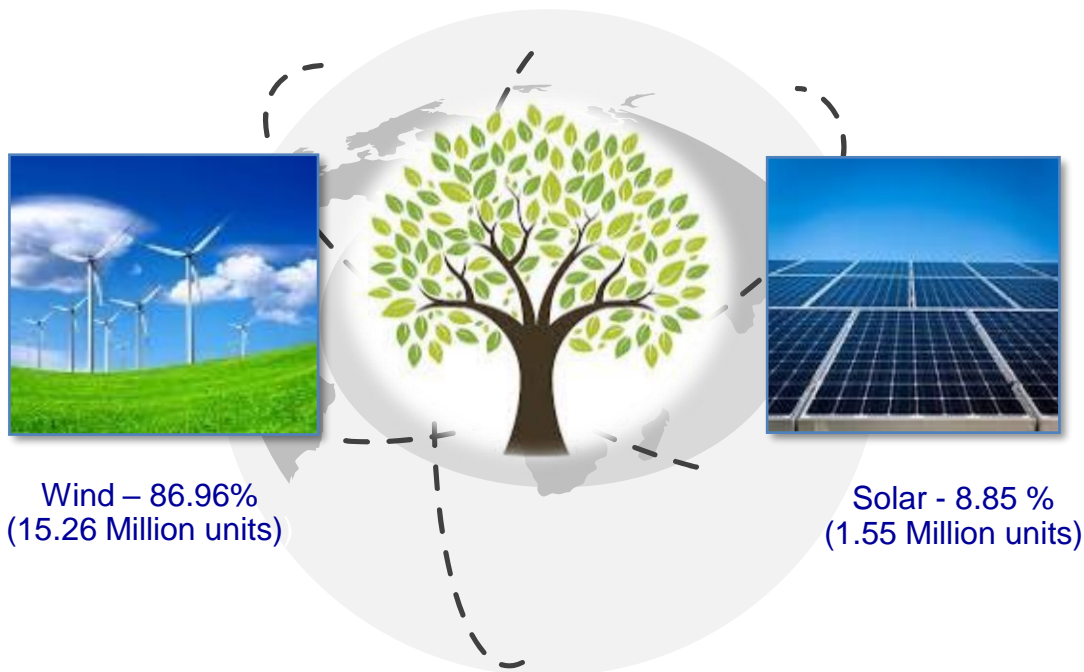
Weather Monitoring Station

Source of Idea	Solution	Advantage
<ul style="list-style-type: none">▪ Finding no mechanism available to track & know the status of rain fall and live wind speed, wind direction, atmospheric pressure, ambient temperature of site.	<ul style="list-style-type: none">▪ Worked out the option with BMS Team and installed the weather monitoring station at terrace site.▪ Also integrate the same with BMS for live monitoring & take the data.▪ Investment Cost – INR : 2.5 Lakhs.▪ Live Monitoring of Ambient Temperature, Wind Speed, Rain fall, Wind Direction, Ambient Humidity	<ul style="list-style-type: none">▪ Monitoring the live status of rain fall which helps us to take all precautionary measure during heavy rain and alert the site team.• Monitoring of live wind speed which helps us to caution the site team to secure loose / flying objects.



7.Utilisation of Renewable Energy Sources FY 21-22

Type of RE	Type of Energy	Onsite/Off site	Installed Capacity (MW)	Generation (Million Units)	% of Overall Electrical Energy
Solar PV	Electrical	Onsite	1.1	1.55	8.85 %
Wind	Electrical	Off site	13.85	15.26	86.96 %



RPO Obligation

RPO Target fixed for Tamil Nadu

Year	Solar	Non – Solar	Total
2019-20	6.75 %	10.25%	17 %
2020-21	6.75 %	10.25%	17 %
2021-22	10.5 %	10.5%	21 %

RPO Achieved at site

Year	Solar	Non – Solar	Total
2019-20	5.54 %	72.95 %	78.50 %
2020-21	7.64 %	85.23 %	92.9%
2021-22	8.85 %	86.96 %	95.8%

Reference Source

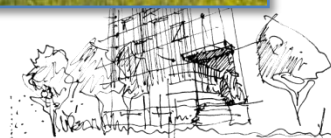
<https://www.iexindia.com/>



Group Total Capacity & Unit Capacity (MW)

Windmill Details – OFF Site

S.No	WEG HT SC NO	Capacity in MW	Location
1	79204721737	0.8	Theni, Tirunelveli, Udumalaipet.
2	59224760079	0.85	
3	59224760083	0.85	
4	79204720779	0.60	
5	79204720737	0.60	
6	79204720772	0.75	
7	79204720683	0.75	
8	79204720684	0.75	
9	39224340917	1.650	
10	79224723414	0.600	
11	79244700344	2.0	
12	79244700338	2.0	
13	79204721545	1.65	
Total Capacity (in MW)		13.85	



8.Waste Management



BINS PROVIDED IN INTERNAL AREA



BINS PROVIDED IN EXTERNAL AREA



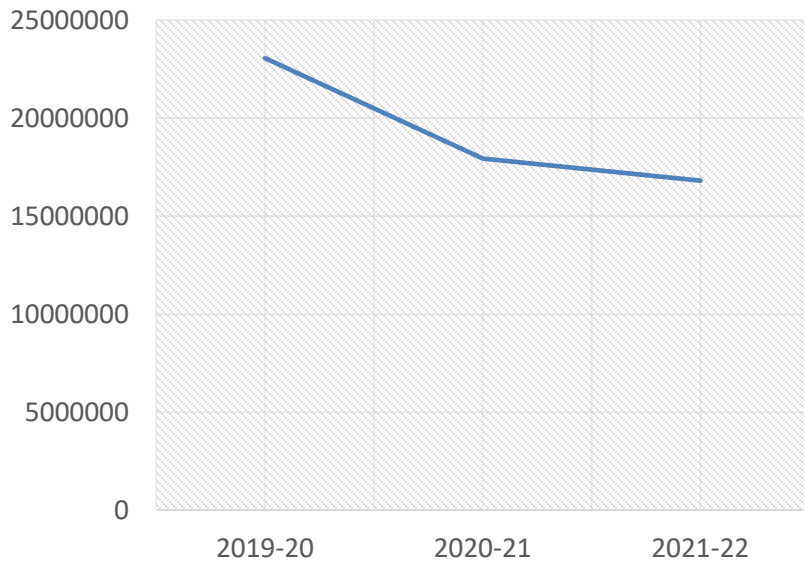
ORGANIC WASTE COMPOSTER



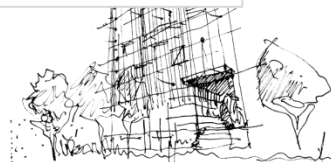
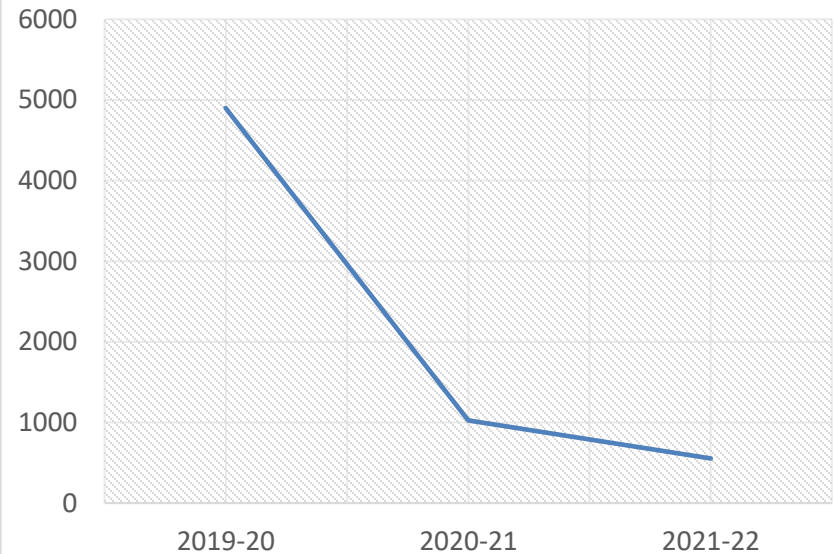
9.GHG Inventorisation

Year	Energy Consumption Details (in Kwh)					Ton of CO 2 Emission		
	TNEB	Wind	Solar	DG	Total	TNEB	DG	Total
2019-20	5612421	21433293	1628935	705110	29379759	4489.9	409.0	4898.9
2020-21	1090435	16454976	1475860	284610	19305881	861.4	162.2	1023.7
2021-22	618329	15260330	1552610	117490	17548759	488.5	67.0	555.4

Renewable Energy Usage in KWh

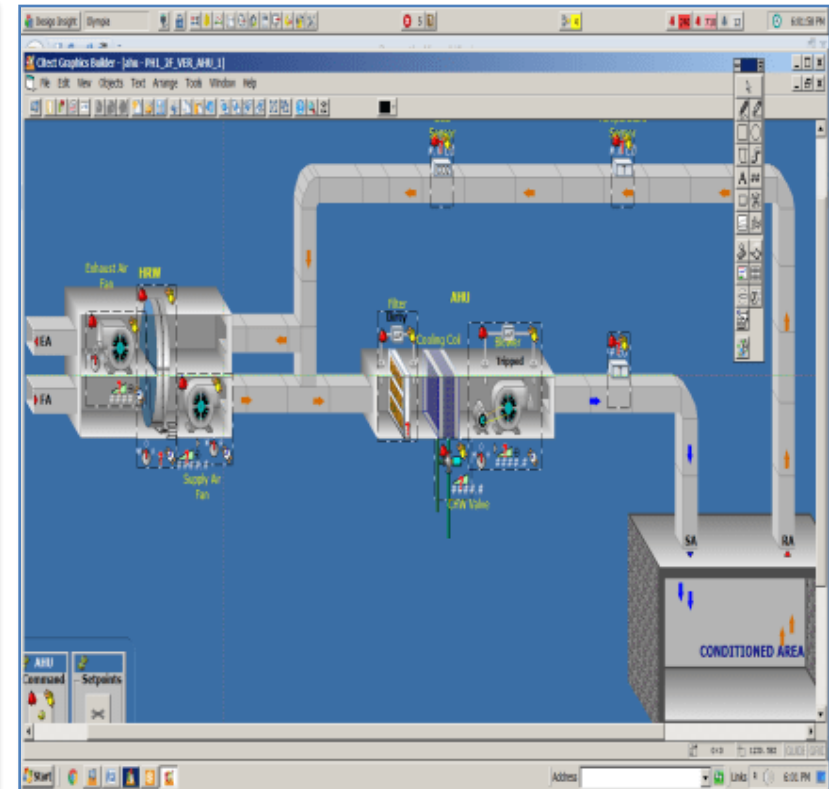


Reduction of CO -2 Emission in Tons



10. Team Work, Employee Involvement & Monitoring

Integrated Building Management System for Monitoring and Control.



Team Work, Employee Involvement & Monitoring



Integrated Building Management System for Monitoring and Control.

OLYMPIA PH-2 ALTIUS(B&C) ALL ENERGY METERS

HOME AHU PUMPS LIFT EM INTG. WEAT

METER NAME	Total Energy (KWh)
EB INCOMER	1,201,633.8
DB INCOMER	109,958.0
RM-SEBOIG	430,411.8
RM 4_EB_OIG	744,732.2
ELEVATORPANEL	31,277.3
SPARE01	0.0
BMS UPS	4,087.6
GATE-4 MLTP LDB	2,481.8
SPARE04	25.5
ALTIUS-A-LDB	1,285.8
LOBBY_POWER_PANEL	4,517.6
COMMON_AREA VC	375,209.5
SPARE05	0.0
2KVA UPS LOBBY	1,975.9
IDEA	0.6
SPARE07	413.5

METER NAME	Total Energy (KWh)
UB WATER BODY	1.1
STP_PLANT	2,637.0
SPARE09	122.9
SPARE10	0.0
LB_LDB(ALTIUS-A)	5,515.4
LIFT LOBBY(PH-2 UB)	3,459.2
SPARE11	2.7
KTFL_OFFICE MAIN PANEL-1	251.6
KTFL_OFFICE MAIN PANEL-2	1,651.4
FOOD COURT	2.1

METER NAME	Total Energy (KWh)
2NDFLOOR	1,026.3
3RDFLOOR	511.8
4THFLOOR	1,383.6
5THFLOOR(PH-2A)PANEL	0.0
5THFLOOR(PH-2B)	409,731.0
6THFLOOR(PH-2A)PANEL	18,390,922.0
6THFLOOR(PH-2B)	7,313,430.0
7THFLOOR(PH-2A)PANEL	3,008,128.0
7THFLOOR(PH-2B)	18,616,444.0
8THFLOOR	0.0
8THFLOORUPS	0.0
9THFLOOR	25,665,670.0
9THFLOORUPS	602.1

METER NAME	Total Energy (KWh)
10TH_FLOOR-SOURCE_1	72,097.1
10TH_FLOOR-SOURCE2	0.0
10F SOLAREM-1	621,244.0
10F SOLAREM-2	0.0

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36°C Partly sunny 4:18 PM 8/13/2022



Team Work, Employee Involvement & Monitoring



Integrated Building Management System for Monitoring and Control.

BTU METER INTEGRATION PAGE-01

HOME
 AHU
 PUMPS
 LIFT
 EM
 INTG.
 WEATHER

PAGE 01 02 03 04 05

AHU NAME	KWH	KW	FLOW	SUPPLY TEMP	RETURN TEMP	RUN HRS
PH-1 VER SHAFT-1 (W)	7,586,000.0	0.0	0.0	8.0	8.0	0 hrs
PH-1 VER SHAFT-2 (S)	7,810,200.0	16.0	0.0 m3/h	8.0	8.0	0 hrs
PH-1 DXC SHAFT-3 (W)	2,382,800.0	154.0	0.0 m3/h	8.0	11.0	0 hrs
PH-1 DXC SHAFT-4 (S)	4,163,100.0	0.0	0.0	8.0	12.0	0 hrs
PH-1 VER SHAFT-5 (N)	6,090,100.0	9.0	19.0	8.0	8.0	0 hrs
PH-1 DXC SHAFT-6 (N)	7,272,500.0	229.0	49.0	9.0	13.0	0 hrs
WIPRO 2nd AHU-1	829,200.0	0.0	0.0	11.0	10.0	19324:15:53 hrs
WIPRO 2nd AHU-2	879,530.0	1.0	3.0	8.0	8.0	16631:37:40 hrs
WIPRO 2nd AHU-3	2,733,870.0	0.0	0.0	12.0	20.0	11356:00:17 hrs
WIPRO 3rd AHU-1	821,174.0	0.0	0.0	12.0	17.0	22758:43:59 hrs

AHU NAME	KWH	KW	FLOW	SUPPLY TEMP	RETURN TEMP	RUN HRS
WIPRO 3rd AHU-2	705,624.0	0.0	15.0	8.0	8.0	15964:33:35 hrs
WIPRO 3rd AHU-3	610,413.0	0.0	0.0	13.0	20.0	15159:40:27 hrs
WIPRO 4th AHU-1	3,197,770.0	0.0	0.0	23.0	25.0	15416:31:26 hrs
WIPRO 4th AHU-2	457,681.0	0.0	0.0	10.0	15.0	17638:13:42 hrs
WIPRO 4th AHU-3	410,501.0	0.0	0.0	16.0	24.0 °C	10839:03:59 hrs
MASTECH 5th AHU-1	453,299.0	57.0	11.0	8.0	12.0	17130:21:33 hrs
MASTECH 5th AHU-2	292,285.0	0.0	21.0	0.0	0.0	14115:43:12 hrs
MASTECH 5th AHU-3	2,421,892.0	9.0	13.0	8.0	9.0	16321:28:47 hrs
FUNDINFO 6th AHU-1	86,261.0	1.0	1.0	14.0	13.0	24167:30:43 hrs
FUNDINFO 6th AHU-2	2,112,846.0	0.0	0.0	12.0	13.0	17416:58:11 hrs

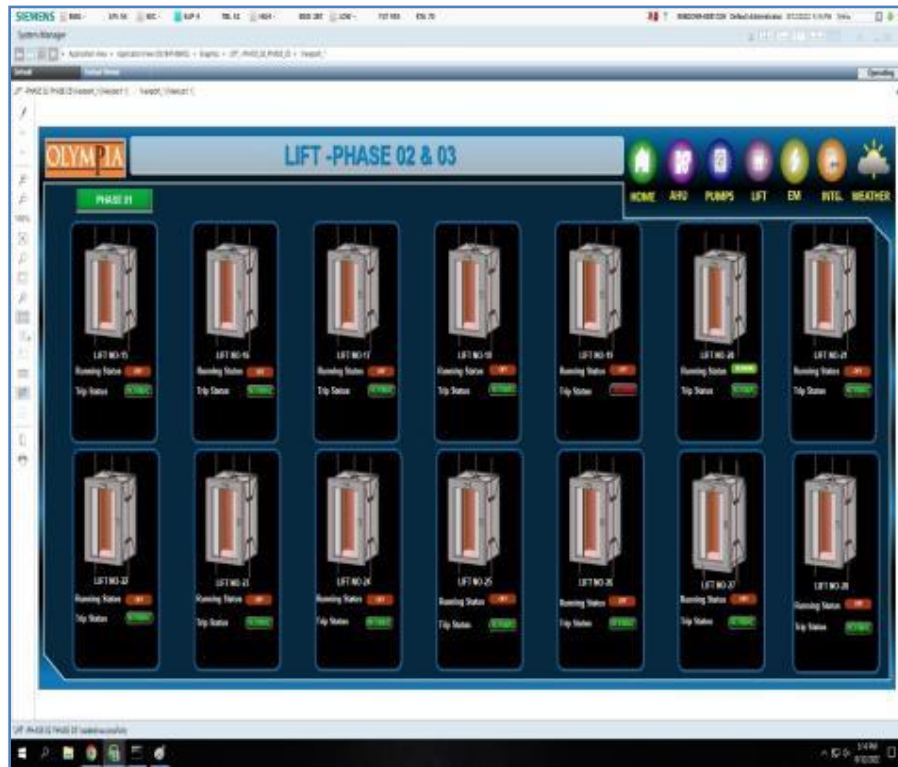
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10. Team Work, Employee Involvement & Monitoring



Integrated Building Management System for Monitoring and Control.



Review Meeting Chaired by

Level -1 Review Meeting  by Shift Engineer on weekly basis.

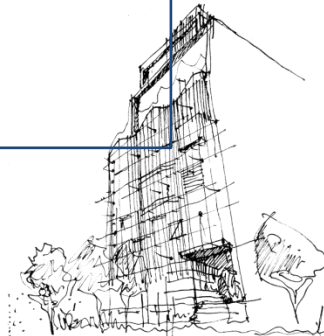
Level -2 Review Meeting  by Technical Manager once in two weeks.

Level -3 Review Meeting  by Property Manager once in a Month.

Level -4 Review Meeting  by Top Management once in 3 months.

Discussion Points :

- Further improvement of building operations.
- Optimisation of Energy & Water Consumption.
- Awareness training on energy & water conservation measures.



Energy Efficiency/ Awareness Training Program



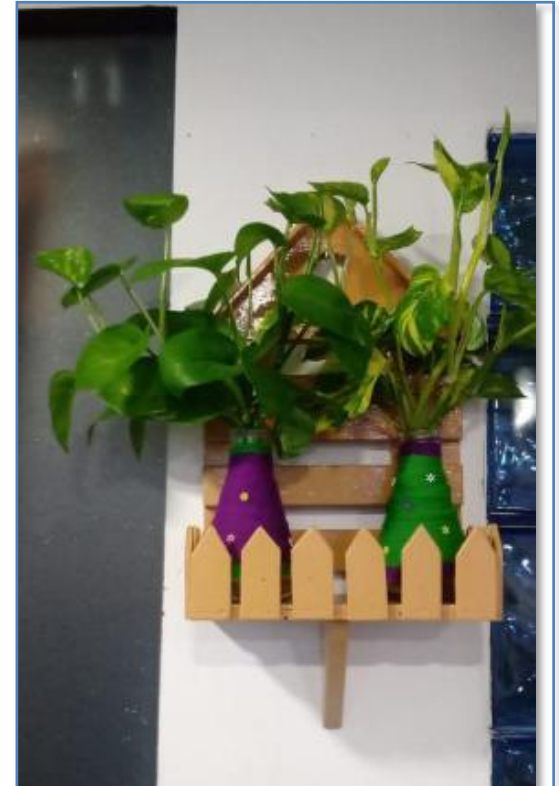
Raise Awareness

Management organizes activities, seminars, forums and events regularly to share information on best practices of energy review mechanism, understand what common issues exist, and take steps to improve energy efficiency.



11. Projects Implemented through Kaizens

Creation of Wall Mount Plants, Pot Minion & Creepers Using Waste Materials



12. Implementation of ISO 50001 / IGBC Rating

IGBC Rating

Olympia Technology Park has obtained Platinum Certification in June -2020 from IGBC for existing building category



13. Learning from CII Energy Award

- Radial Cooling System and its advantages.
- Net Zero Energy Buildings.
- ISO 50001 Certification from IGBC.
- GreenCo rating system.
- Innovation implemented by other companies.



14. Other Relevant Information

USGBC LEED Certification for GOLD



Other Relevant Information

Excellent Energy Efficient Unit Award-2019



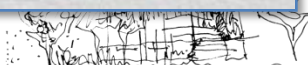
Excellent Energy Efficient Unit Award-2020



Excellent Energy Efficient Unit Award-2021



National Energy Leader - 2021



Other Relevant Information

Postal Dept. has released the special cover with Olympia Tech Park image on 29.12.2006



Best Green Building Award



Best HVAC Design Award



Giream Award was conferred upon Olympia Technology Park for the best green building in India - 2009.

Olympia Technology Park was awarded "The BRY AIR AWARDS 2008" for the "Best HVAC Design" and this award is in its 3rd year and considered as prestigious for it certifies excellence in Energy conservation & Innovative design in HVAC.



Thank you

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