



**THE PHOENIX  
MILLS LIMITED**



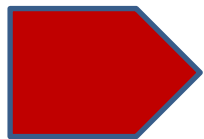
**Offbeat Developers Pvt Ltd**  
**Presenter : Mr. Gajanan Tekade**  
**DGM - Services**

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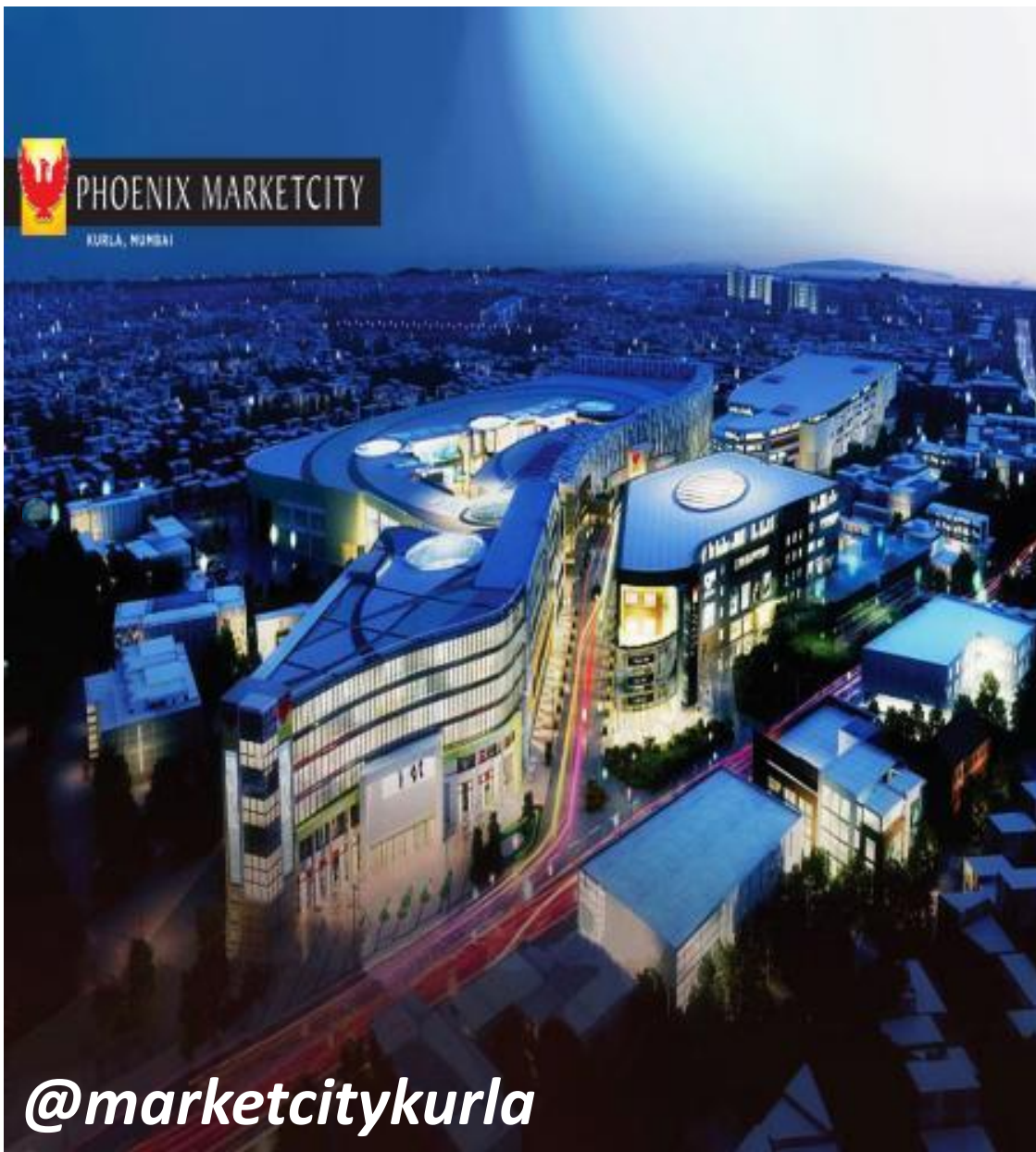


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Thank You !!!



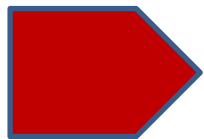
# 1.1 INTRODUCTION



@marketcitykurla

## OUR UNIQUE FEATURES

- **Phoenix Marketcity Kurla is born Nov 2011**
- **Ultimate destination** for shopping, dining, entertainment.
- **Ease of accessibility** to major express highways of the city
- Spread over 4 stories of retail space covering **2.1 million sq. ft.**
- Mall houses **over 400 premium** and high street brand
- Total **60 no's of Food Court outlet** and Restaurants
- The mall offers a **variety of entertainment** options
- Massive **entertainment hub-Dublin square** as the biggest indoor venue in the city
- Incoming Electrical – 2 Source 11 KVA
- Generators -1600 KVA \* 3, 1010KVA\*1
- Transformer – 1600 KVA \* 2, 1250KVA\* 2 , 1000KVA\*2
- Chiller Plants – 1500 TR \*3, 1000 TR \*1 , 500 TR \*2, 170 TR \* 2
- Fuels -PNG and HSD
- **Completes 10 years Experience the best of fashion and Lifestyle under one roof.**

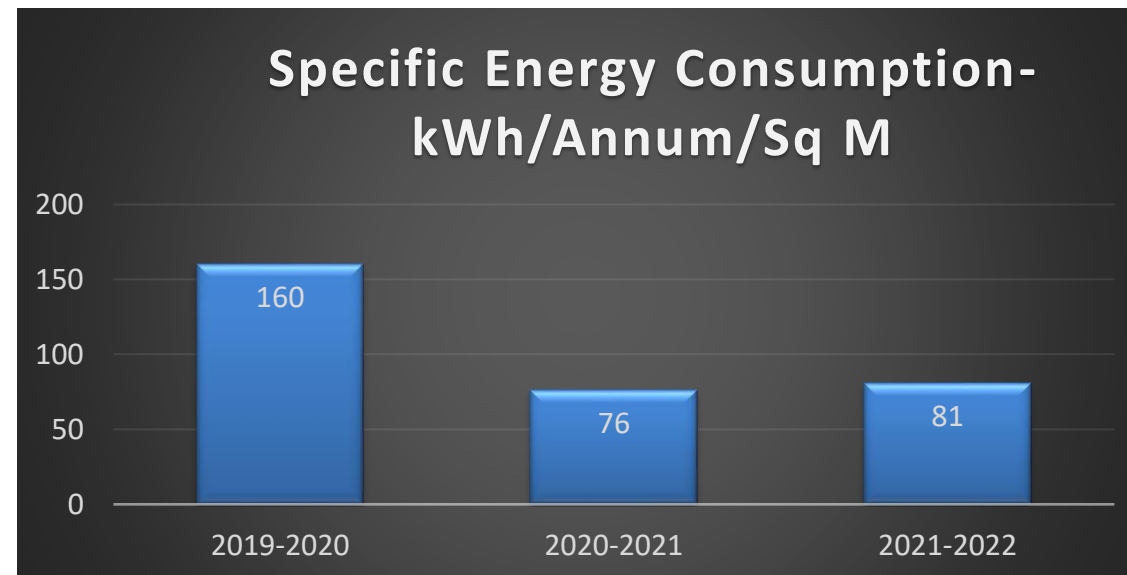
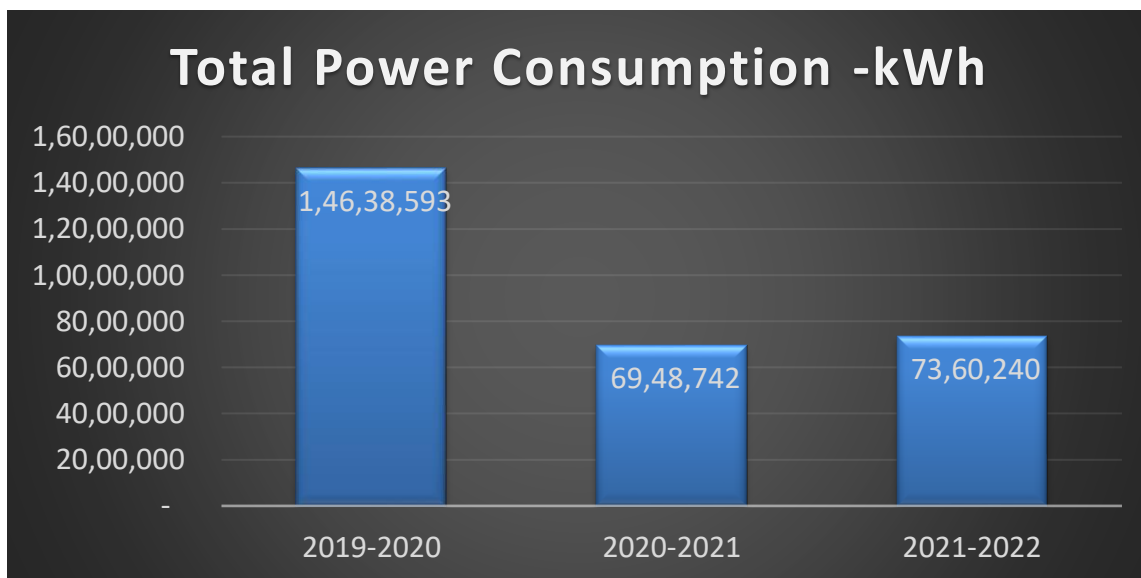


# 2.ENERGY CONSUMPTION OVERVIEW

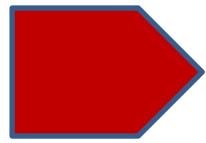


## Energy Data - Total Power Consumption

Years	KWH	Area Sq .M	SEC (kWh/Annum/ Sq M)	kWh/Month/ Sq M
2019-2020	1,46,38,593	9,1288	160	13
2020-2021	69,48,742	9,1288	76	6
2021-2022	73,60,240	91288	81	7



*Note : Due to Covid restriction less consumption data in month duration April to August in respective years 2020-21 and 2021-22*

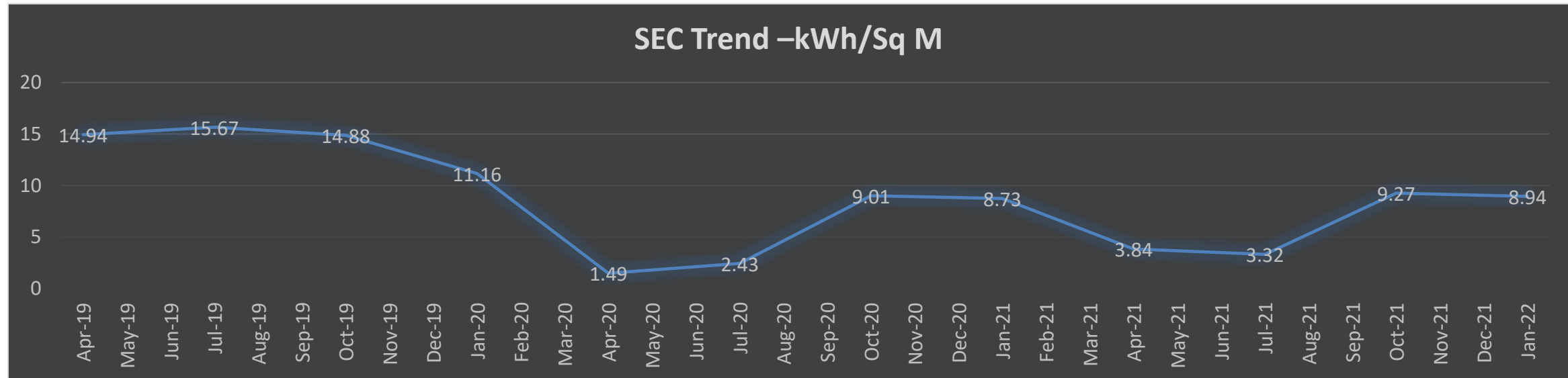


# 3.SPECIAL ENERGY CONSUMPTION IN LAST 3 YEARS (FY 19-20 TO FY 21-22)



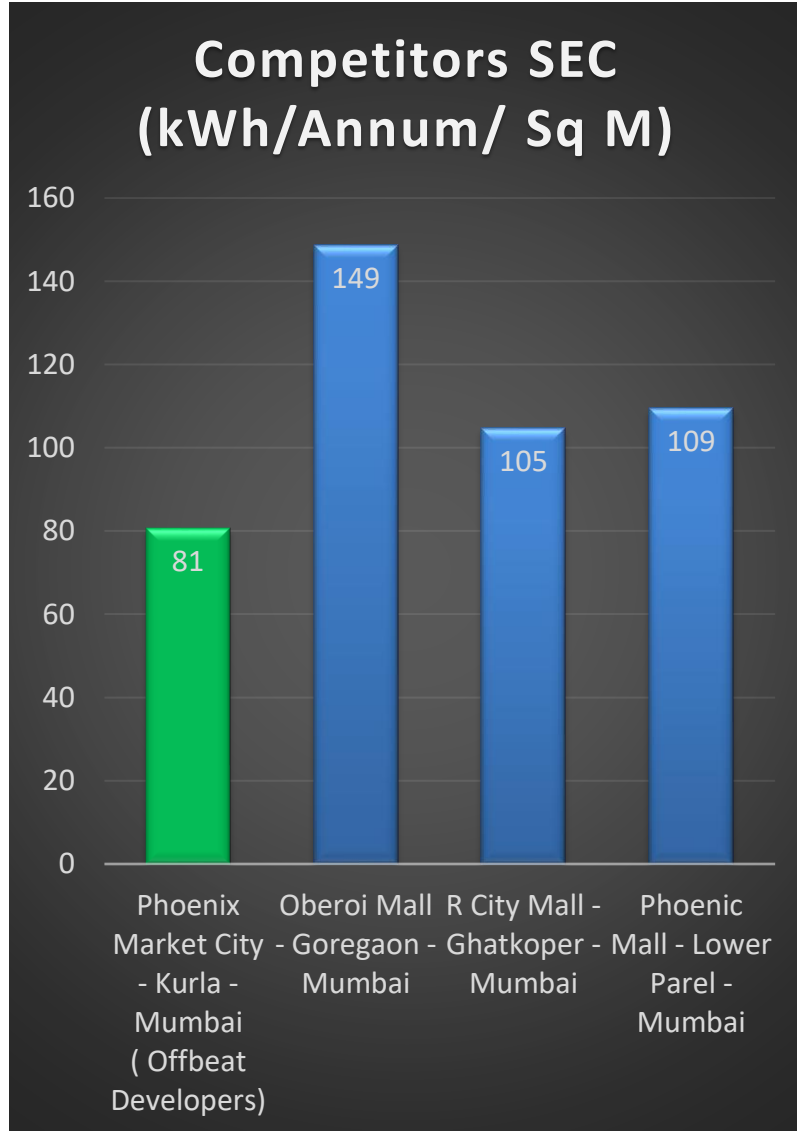
## Specific Energy Consumption Trend 2019-2021 (kWh / Sq M)

Apr-19	Jul-19	Oct-19	Jan-20	Apr-20	Jul-20	Oct-20	Jan-21	Apr-21	Jul-21	Oct-21	Jan-22
14.94	15.67	14.88	11.16	1.49	2.43	9.01	8.73	3.84	3.32	9.27	8.94



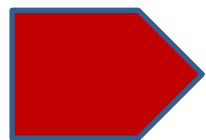
**Note : Due to Covid restriction less consumption data in month duration April to August in respective years 2020-21 and 2021-22**

# 4. Information on Competitors, National & Global benchmark

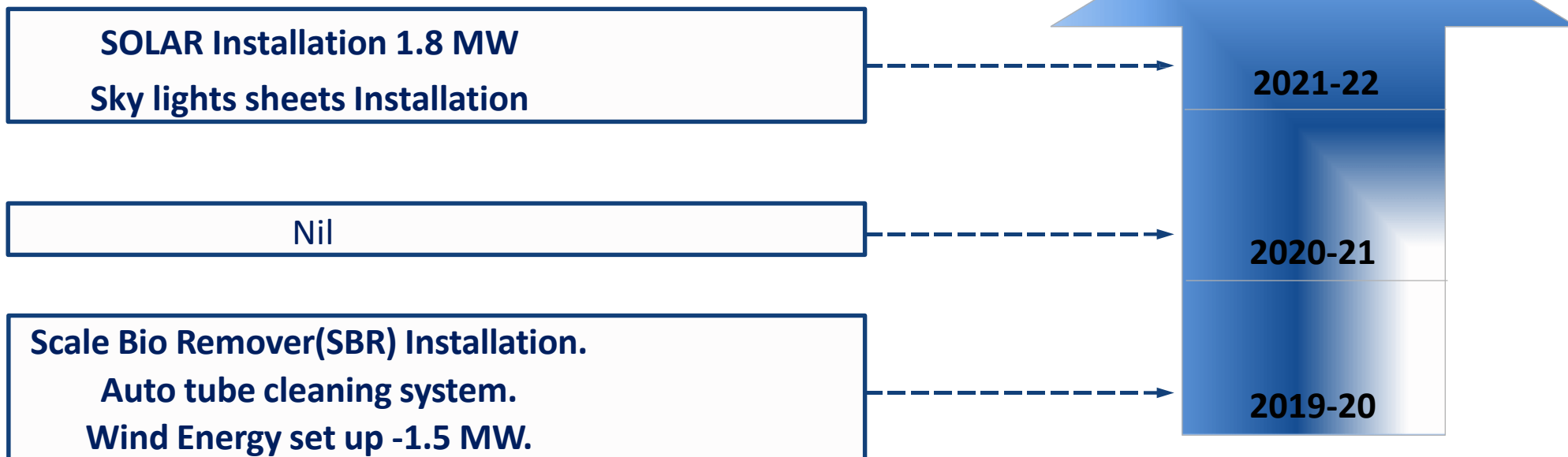


### Energy Data - Total Power Consumption 2021-22

Mall Name	KWH	Area Sq .m	Specific Energy Consumption SEC (kWh/Annum/ Sq M)	kWh/Month / Sq M	Benchmark
<b>Phoenix Market City (Offbeat Developers) - Kurla - Mumbai</b>	73,60,240	91288	<b>81</b>	<b>7</b>	<b>Best</b>
Oberoi Mall - Goregaon - Mumbai	58,35,152	39272	149	12	45.74%
R City Mall - Ghatkoper - Mumbai	78,65,602	75152	105	9	22.97%
Phoenix Mall - Lower Parel - Mumbai	71,29,050	65130	109	9	26.34%

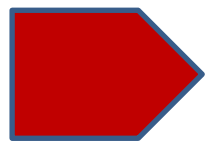


## 5. Energy Saving projects implemented in last three years



### Energy Saving projects implemented in last three years

Year	No of Energy Saving Project (Nos)	Investment (INR Million)	Electrical Savings ( Million kWh)	Savings (INR Million)
FY 2019-20	3	8.45	3.93	12.51
FY 2020-21	0	0	0	0
FY 2021-22	1	37.2	3.85	10.78



# 6.1 Innovative Projects implemented



## Project Name : Scale Bio Remover (SBR) System

Year of Installation-2019-2020

Savings :- 29,811 KL (Perpetual)

### Benefits:

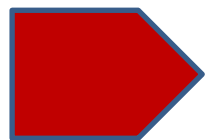
The implementation of SBR in the long run is will offer advantages in;

- Savings on chemicals.
- Decrease in water usage.
- Lower energy costs
- Reduction in labor costs

Water Savings by SBR	
Month	Qty - KL
Jun-19	4617
Jul-19	4454
Aug-19	2327
Sep-19	3585
Oct-19	3331
Nov-19	3837
Dec-19	2637
Jan-20	2249
Feb-20	2775
<b>TOTAL</b>	<b>29811</b>







## 6.2 Innovative Projects implemented



### Project Name : Automatic Condenser Tube Cleaning System

Year of Installation-2019-2020

Savings :- 4,75,373 kWh (Perpetual)

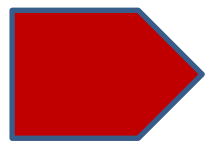
#### Benefits:

- Reducing energy consumption by improving heat transfer efficiency
- Reducing costs associated with manual cleaning of the heat exchanger
- Reduce downtime and improve availability
- Reduce operations and maintenance costs
- Protect and extend the life of heat exchanger
- Reduce environmental impact.



**Tubes With Fouling**

**After ACC installtion**



# 6.3 Innovative Projects implemented



## Project Name :Wind Energy 1.5 MW x 2 nos

Year of Installation-2019-2020

Savings :- 34,53,004 kWh (Annual)

### Benefits:

- Free Fuel.
- One of the Cleanest Forms of Energy.
- Reduces Our Dependence of Fossil Fuels

HT Meter	900000040748	900000040761
Month	Wind Unit credited in Monthly Bill	Wind Unit credited in Monthly Bill
Jun-19	3,17,337	0
Jul-19	5,92,169	5,98,465
Aug-19	3,66,468	3,20,755
Sep-19	2,00,359	1,17,500
Oct-19	1,46,817	35,850
Nov-19	94,499	36,714
Dec-19	72,682	38,885
Jan-20	70,106	49,297
Feb-20	66,213	88,011
Mar-20	1,06,746	1,34,131
<b>Total Amount</b>	<b>20,33,396</b>	<b>14,19,608</b>
<b>Total Wind Units Credit</b>	<b>34,53,004</b>	

Month	Feb-20	Credit to be given to Consumer	(3,05,253.00)
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Consumer Name	OFFBEAT DEVELOPERS PVT LTD
Number of Days	28
Consumer no	900000040748
Transmission Losses	3.30%
Tata Power-D's Wheeling Loss	0.90%
Tata Power-D's Wheeling Charges	1.48
	Non-Captive

**Adjustment in Case of Wind OA**

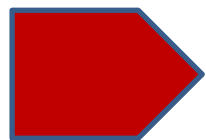
	Total kWh	TaD-A (kWh)	TaD-B (kWh)	TaD-C (kWh)	TaD-D (kWh)
As per Credit Note	69,295	25,323	25,887	11,577	6,607
Less- Transmission Losses	2,280	826	854	382	218
Units available at ToD	66,815	24,498	25,033	11,195	6,389
Less- Tata Power-D's Wheeling Losses	602	238	225	301	58
Net Credit received during the month (A)	66,213	23,980	24,808	11,094	6,331
Net Credit carried forward from previous month (B)	-	-	-	-	-
Units Metered (C)	5,62,320	1,14,720	2,22,180	92,940	1,32,480
Total Units Billed (C-(A+B))	4,96,107	90,740	1,97,372	81,846	1,26,149
Energy Banked (Closing)	-	-	-	-	-
Banking charges 2%	-	-	-	-	-
Net Energy banked (Closing)	-	-	-	-	-
Total Units Billed after adjusting Energy Banked (Closing) Net	4,96,107	90,740	1,97,372	81,846	1,26,149
Banked units adjustment in TGD Slot After units adjustment	-	-	-	-	-

Open Access Units	(66,213.00)	(23,980.00)	(24,808.00)	(11,094.00)	(6,331.00)
TPC Units	4,96,107.00	90,740.00	1,97,372.00	81,846.00	1,26,149.00

Total kWh	38,480	Billed Maximum Demand	1,762
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<b>With Wind Credit</b>				
<b>Details of Electricity Duty</b>				
Units (kWh)	Amount (Rs.)			
4,96,107	11,25,486.78			
<b>Units Credit</b>	<b>66,213</b>			

<b>Bill Details</b>		Units	with OA/TPC Billing	Open Access Credit
Energy Charges	6.75	4,96,107	33,48,722.25	(4,46,937.75)
TGD-A (1200 to 2600)	-0.75	90,740	(68,955.00)	17,985.00
TGD-C (0900 to 1200)	0.5	81,846	40,923.00	(5,547.00)
TGD-D (1400 to 2300)	1	1,26,149	1,26,149.00	(6,791.00)



# 6.4 Innovative Projects implemented



## Project Name : Solar System 1.8 MW

महाराष्ट्र शासन राजपत्र असाधारण भाग चार-क, मार्च ३०, २०१६/खेत्र १०, शके १९३८  
175  
ANNEXURE III : FORMAT FOR SHORT-TERM OPEN ACCESS FORMAT - ST1

9	Details of PPA / MoU		Date of PPA / MoU	Validity Period		Capacity
	Name & Address of Parties			Commencement	Expiry	MW
	Seller	Buyer				
	RENEW SURYA KIRAN PVT LTD	OFF BEAT DEVELOPERS PVT LTD	20.01.2022	20.01.2022	19.01.2047	1.80

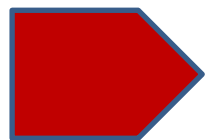
  

10	Injecting Utility details (Repeat for every injection point)	
	Name:	RENEW SURYA KIRAN PVT LTD
	Point of Injection:	132 KV ARANVIHRA PSS
	Name of the concerned Discom / Licensee:	MSEDCL
	Details (path to the nearest sub-station) :	132 KV ARANVIHRA PSS
	Meter No.: 21008127, 21008128	Pooling Station : 132 KV ARANVIHRA PSS

11	Drawing utility details	
	Name:	OFF BEAT DEVELOPERS PVT LTD
	Point of Draw:	PHEONIX MARKET CITY MALL, OLD MUKUND PREMIS, KURLA(W), MUMBA
	Name of the concerned Discom / Licensee:	TPC
	Details (path to the nearest sub-station) :	KURLA

Solar Estimated & Actual Units Generation		
Month	Estimated Generation For designed Capacity	Actual Units generation at PSS End
Apr-22	3,78,675	3,78,185
May-22	3,81,225	4,07,612
Jun-22	2,73,275	2,96,184
Jul-22	2,24,995	2,04,236
Aug-22	2,37,745	
Sep-22	2,88,745	
Oct-22	3,31,755	
Nov-22	3,20,450	
Dec-22	3,38,215	
Jan-23	3,46,800	
Feb-23	3,39,235	
Mar-23	3,94,995	
<b>Total</b>	<b>38,56,110</b>	<b>12,86,217</b>



## 6.5 Innovative Projects implemented



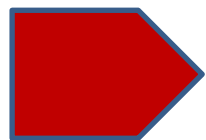
### Project Name : Sky light sheets

Year of Installation-2021-2022

#### Benefits :-

- Improved lux level 200% increase, helping save on day time lights
- Floor temperature reduce 1.5 C.

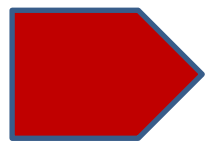




## 7. Utilisation of Renewable Energy sources



Year	Technology (Electrical)	Type of Energy	Onsite/ Offsite	Installed Capacity (MW)	Generation (Million kWh)	% of overall electrical energy
FY2019-20	Electrical	Wind	Offsite	3.00 MW	3.45	23.57%
FY2021-22	Electrical	Solar	Offsite	1.80 MW	3.85	33.00%

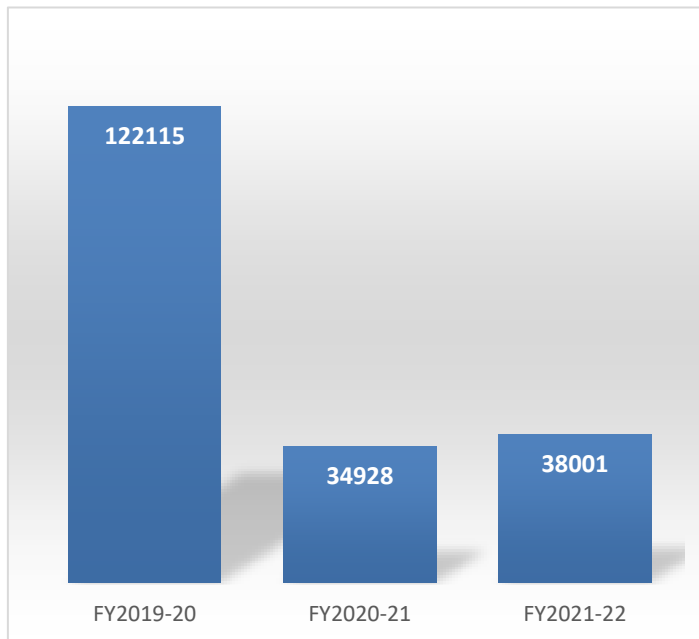


# 8. Waste management

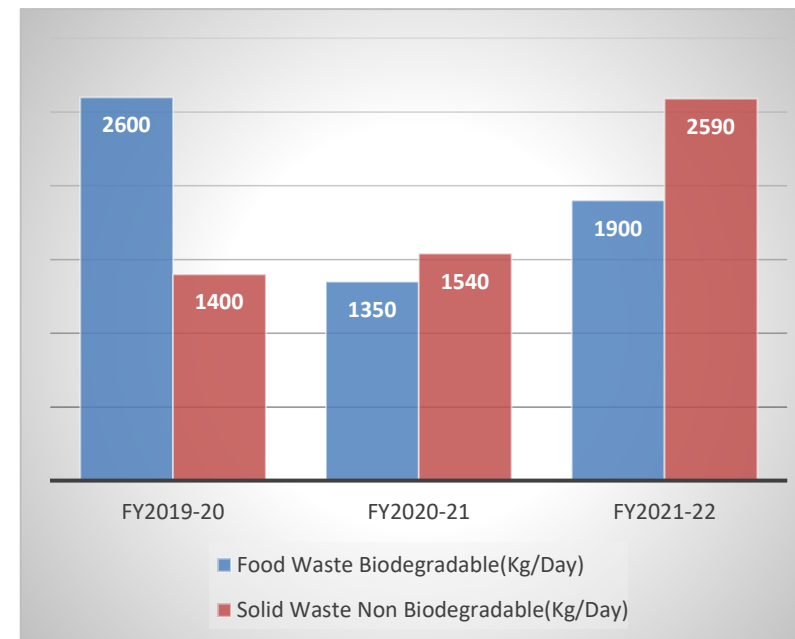


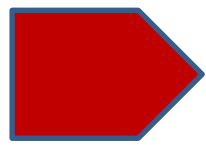
- Installed 900 KLD Sewage Treatment Plant for recycle of waste water
- In year 2021-22 period 38001 KL water has treated and used for Flushing , HVAC and Gardening. Cooling Towers.
- Installed Organic Waste Convertor of 2000 Kg per day .
- In Year 2021-22 period converted 1900 Kg/Day wet waste into manure and use for Gardening.
- Recycled 2590 Kg/day dry waste paper plates, cup, cardboard and shredded papers.
- As an initiative to recycle plastic Installed Pet Bottle crusher .

STP Treated water - KL



Waste collection and process – KG/Day





# 8. Waste management

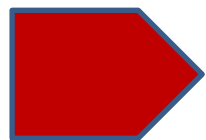


**Bottle crusher OWC Set up 2000 KG**



**Operating Team**



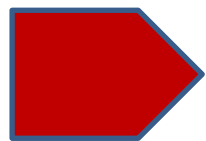


## 9. GHG emission and indoor air quality



Year	Scope 1 Emission (LPG & PNG)	Scope 2 Emission (Electricity)	Scope 3 Emission (Water)	Ton of Co2 equivalent
2019-20	34.55	12442.80	146.17	12623.52
2020-21	23.03	5906.43	94.21	6023.67
2021-22	27.72	6256.20	94.16	6378.08





# 10. Teamwork, Employee Involvement & Monitoring

IOT and BMS based Monitoring and Control -  
Chiller, AHU and UPS



BMS based Monitoring and Control - Chiller and AHU

and UPS



Daily consumption & efficiency reporting Monthly  
Energy review – Chaired by Location Head



Planned to Installation the IOT and EC Fan motors in  
AHU in year 2022-23



# 10.1 Teamwork, Employee Involvement & Monitoring



3 keys of success : Motivation, Training and Briefing to Technical team

## Motivation



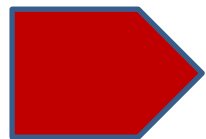
## Training



## Briefing



Briefing and training on daily bases To be a successful engineer is to develop strong teamwork skills in order to ensure a smooth workflow process.



# 10.2 Teamwork, Employee Involvement & Monitoring

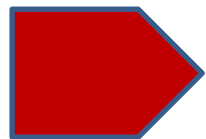


Centralisation of BMS, Energy Monitoring System and Complaint module .



## ➤ Benefits

- Precise monitoring of operating parameters on a real time basis.
- Data comparison can be done on a hourly, monthly & annual basis.
- Fault indication and analysis of the utility system is easy.
- Indoor parameters of temperature, relative humidity, IAQ can be monitored & controlled without time delay.
- Energy losses was immediately identified & actions initiated.
- Using complaint module android and web base app for Raise Ticket, Work permit, Checklist on time review and attend in minimum TAT.



## 10.3 Major encon Projects planned :2022-23

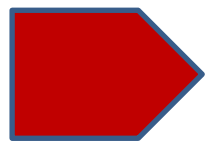


Proposed & Mock up : EC motors installed in AHU's to achieve higher energy savings



### ➤ Benefits

- Reduction in AHU energy consumption.
- Improvement in quality of air inside the workplace.
- Improvement in efficiency of occupants.



# 10.4 Major encon Projects planned :2022-23



## Proposed & Mock up : IOT Solution to achieve higher energy savings

Year 2022-23 - mock up- WIP

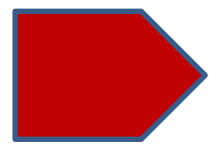
Estimated Benifits:-

### Benefits

- ✓ Energy saving by 20 To 40 %
- ✓ Maintenance & Operation cost reduced by 10 to 12%.
- ✓ Efficient Man power utilization

## IoT SOLUTION CAPABILITIES





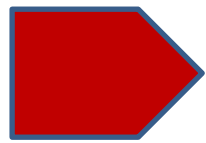
# 11. Implementation of ISO 50001/Green Co/IGBC rating



## Green Supply Chain Management

- To reduce the exposure of building occupants and maintenance personnel to potentially hazardous chemicals, biological and particulate contaminants which adversely affect air quality, human health, building finishes, building systems and the environment.
- Phoenix Mall Management has created its Green Cleaning Policy.
- Our aims to progressively move towards 100% sustainable cleaning procedures and products/equipment



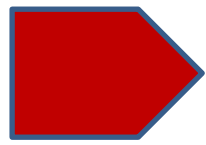


## 12. Any other relevant information – Way Forward



### Sustainability Initiatives undertaken

- LED lights installation.
- VFD for HVAC pumps , cooling tower and Hydropneumatic system
- Timers for common area and street lights
- Recycle water utilization in washrooms, horticulture etc.
- Sensor based taps for wash basins.
- Rainwater harvesting.
- Usage electric Car and bikes is some of the initiative undertaken to reduce on the carbon footprint through transportation.
- OWC plant.
- Plastic Bottle Crusher
- Renewable energy utilization.



## 12. Any other relevant information – Way Forward



All lighting fixtures are with LED's



- All existing lights in base building are converted to LED lights.

Recycle water utilization in Horticulture



- All surround building landscaping and horticulture irrigation with recycle water.





## 12. Any other relevant information – Way Forward



### Rooftop solar plant



- The installed capacity in the common area passage is 5 Kw.
- The annual energy generation from solar plant is 7,200 units

### High Volume Low Speed (HVLS) AC Fans



- In Phoenix Mall , inefficient wall fans have been replaced with High volume low speed fans VFD based.
- Less energy consumption, Noiseless, better ventilation and comfortable environment.
- Courtyards 40,000 Sq ft. area – Fans 9 no's



## 12.Any other relevant information – Way Forward



### Sensor Based Water Taps For Wash Basin

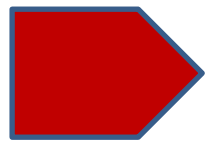


Existing wash basin water taps have been replaced with arrestor and sensors with 50 % reduced capacity .

### Rain Water Harvesting



- It will help to increase water table .
- There are nos.12 of operational rainwater harvesting pits in Phoenix Mall campus.



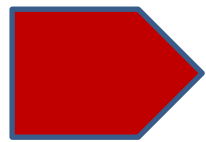
## 12.Any other relevant information – Way Forward



### Electric Vehicle Charging Station



Electric vehicle charging stations have been established. As the transportation sector is a major contributor of air pollution, shifting the masses to a cleaner energy mode of transportation such as electric vehicles will result in lesser conventional energy dependencies.



# 12. Any other relevant information – Major Achievements.



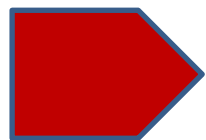
HSE Excellence Safest Mall of Year 2019.

TATAPOWER Energy Conservation Award 2019

IRF TRUSTED MARK

FIST AWARDS 2020

ICONIC SHOPPING CENTRE OF THE YEAR



## 13. Learning from CII Energy Award or any other award program



Sustainability Roadmap 2030-

- Our commitment to achieving carbon neutrality in our India operations has been operationalized through a host of initiatives, including enhancing resource efficiency as well as moving to renewable alternatives.
- We are also helping our communities become more carbon resilient through afforestation efforts.
- We have made our employees a part of this journey by including them in volunteering activities and reducing their travel footprint.

The build up towards the nomination process has helped us to recognise and identify projects which has helped our company's excellence in the reduction of energy consumption and innovation. Our mission towards use of clean energy and reduction of carbon footprints is helping us scout for new avenues and techniques of resource conservation.

We appreciate the organizer for providing this platform to share our experience, implementations and concepts, we believe that our efforts at mitigating climate change and prioritising a circular economy will ensure our sustained growth in the future.

This exercise has been enriching in more ways than one.



# Thank You

***Mr. Gajanan Tekade***

***Designation – DGM Services***

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