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23rd NATIONAL AWARD FOR EXCELLENCE IN ENERGY MANAGEMENT (2022)

PRAVEEN PANDA (PLANT HEAD)
SHIV NARESH SINGH (WORKS MANAGER)

GROUP PROFILE

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- Incorporation on 17th Feb-1942
- Handling Volume of polymer processed 4,00,000 MT
- 25 Nos. of advanced manufacturing plants, 3 plants are under constructions.
- 70 Cr Capex on Roof Top Solar
- **Debt Free** company having cash surplus of 533 Cr at en Jun-22.
- **Financial Details:-**

a) Market Capitalization 25,955 Cr

b) Group Turnover-7,840 Cr

Business Verticals

Vision

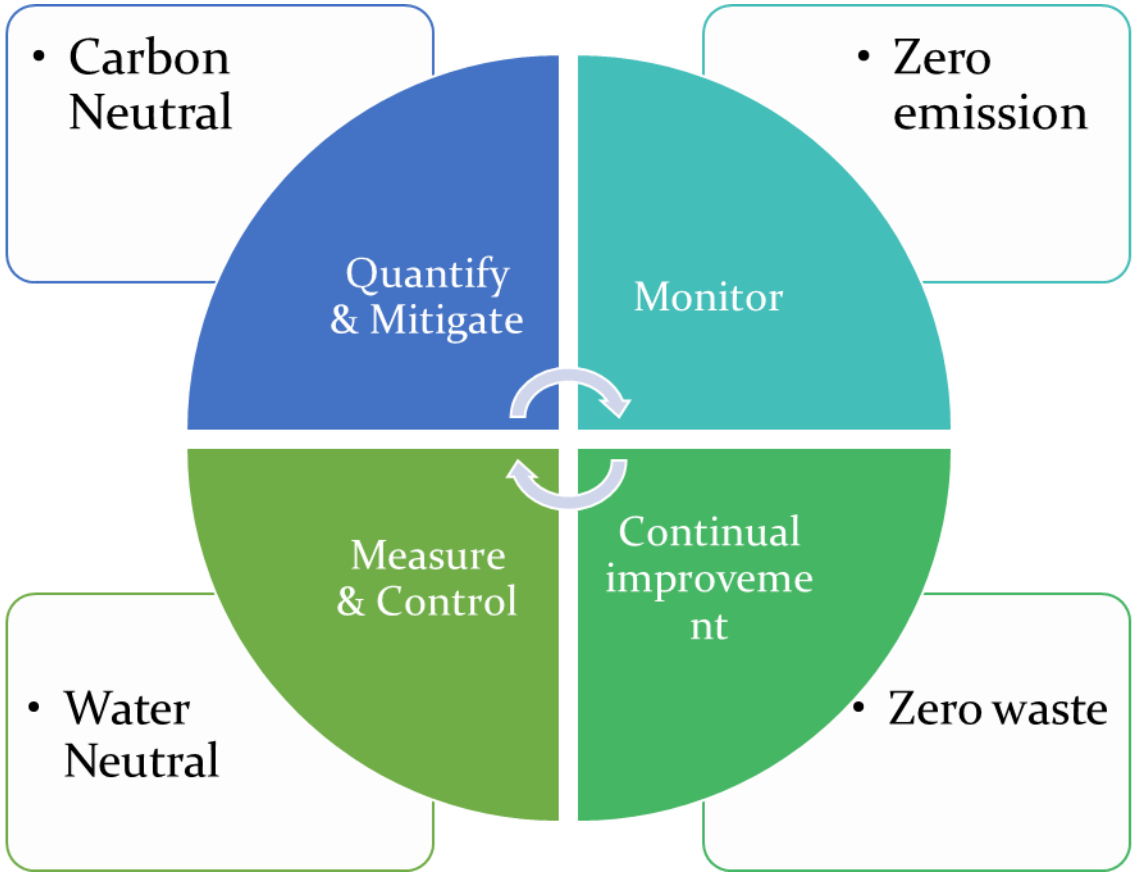
- **Energy Efficiency Improvement**
- Reduction in GHG Emission 60,000 TCo2 by **Renewable energy**
- **Carbon Neutral**
- **Zero Waste**
- **Extended Producer Responsibility (EPR)**
- **Sustaining** Water Withdrawal Sources
- **Zero Liquid Discharge**-Stop the drain
- Rain water Harvesting System-**Catch the rain**

Mission

- **EnMS** ISO 50001:2018 PAN India Location by year 2027-28
- EnMS 50001 **certification** of Energy Intensive Unit by **2023-24.**
- Increase renewable energy mix by **12% to 25% by year 2024.**
- Reduce **Energy Intensity 10% by 2024-25**
- **Carbon Neutral** Chennai/Hosur- by 2024
- Resources **Conservations**

Water is the precious gift by creator, conserve for future Generation

TSIL GOALS

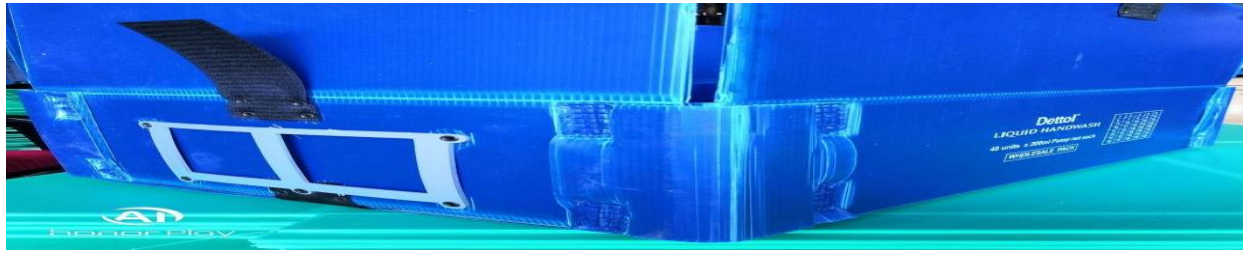

• Carbon Neutral
• Zero emission
Quantify & Mitigate
Monitor
Measure & Control
Continual improvement
• Water Neutral
• Zero waste

- The unit started operating in Nov 2000 catering to North India.
- The unit is in 8 acre land
- The manpower of the plant is 250
- Total annual process capacity volumes of : 12000 MT

a. Moulded Furniture : 7200 MT
b. MHD Crated : 3600 MT
c. PP Corrugated Sheet : 1200 MT

Moulded Furniture

Material Handling Division (MHD) Crates



PP Corrugated Sheet

MANUFACTURING PROCESS

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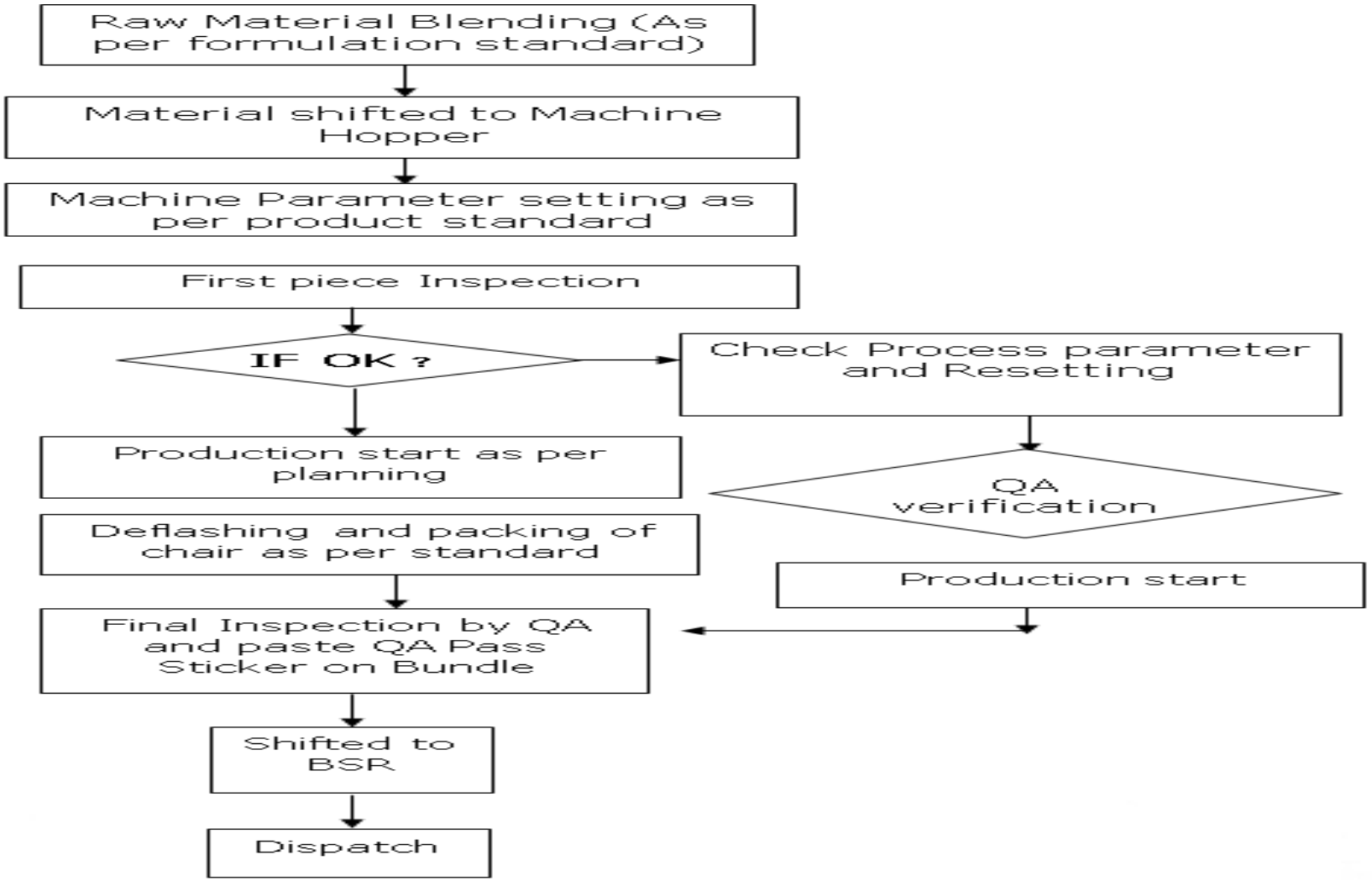
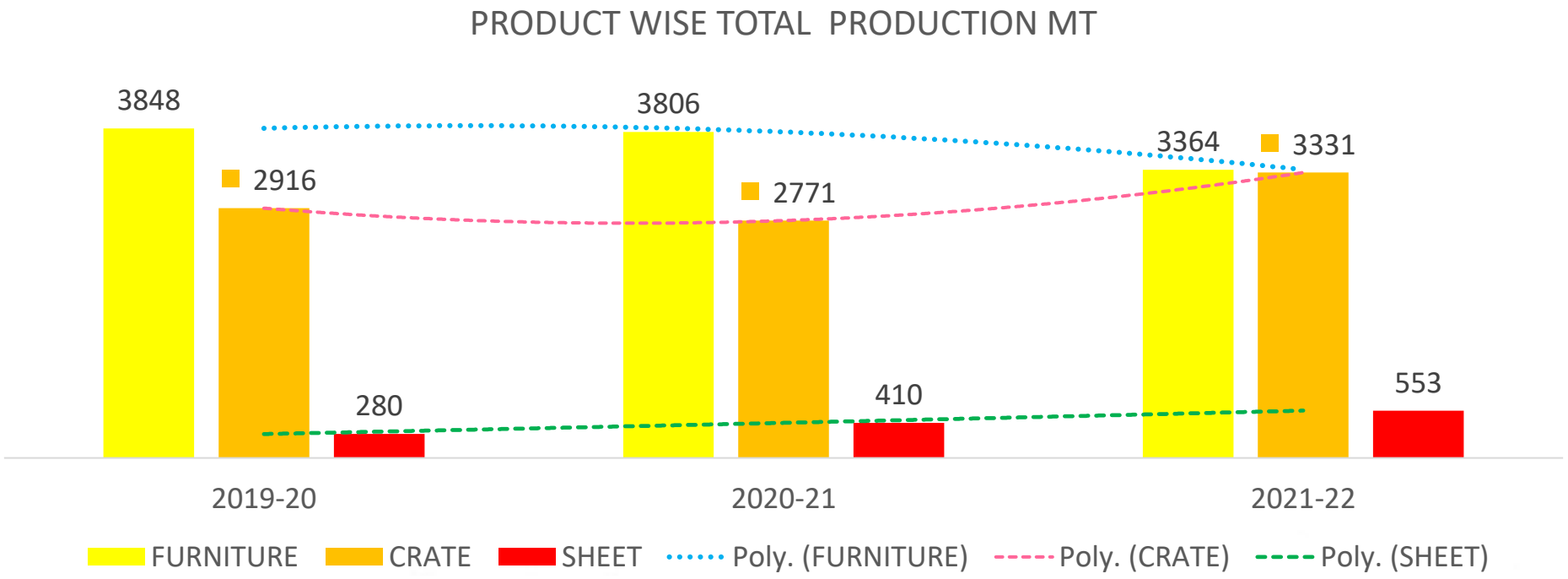


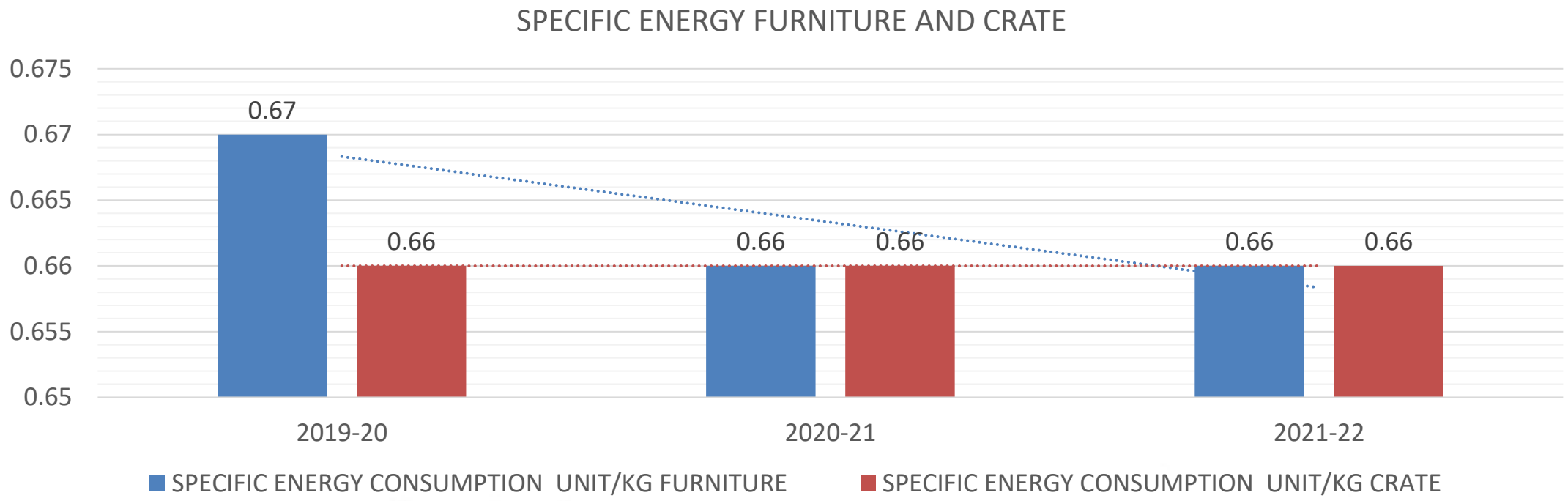
PRODUCTION IN LAST 3 YEARS

TOTAL PRODUCTION IN METRIC TON				
YEAR	FURNITURE	CRATE	PP SHEET	TOTAL
2019-20	3,848	2,916	280	7,043
2020-21	3,806	2,771	410	6,987
2021-22	3,364	3,331	553	7,249



ENERGY CONSUMPTION

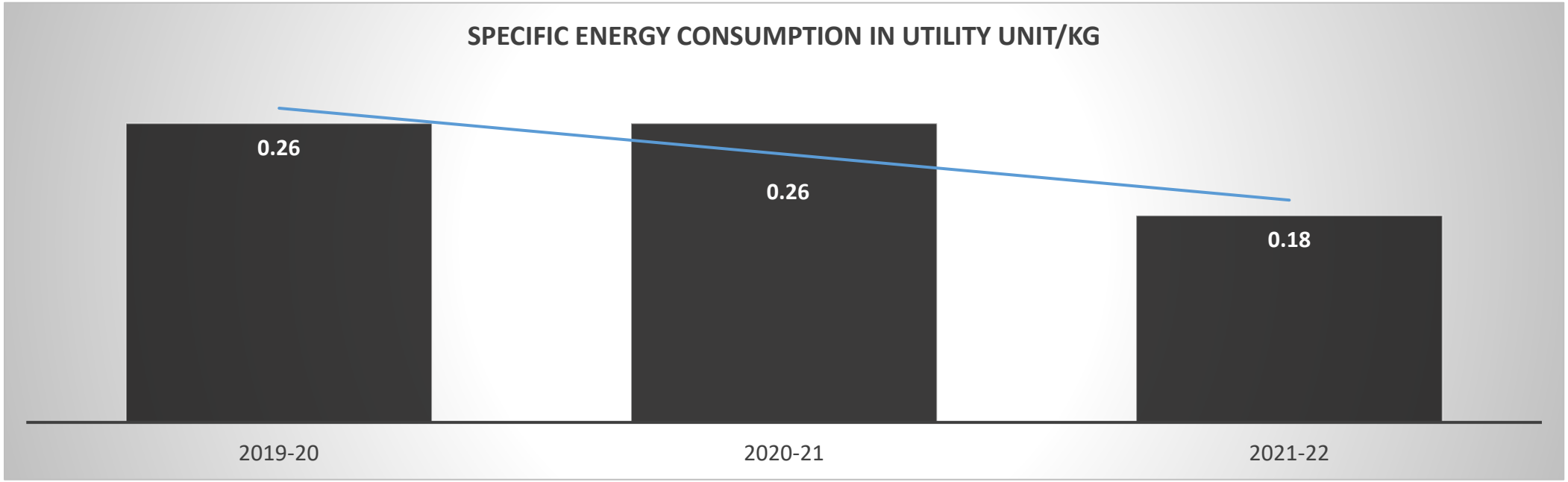
SPECIFIC ENERGY CONSUMPTION			
YEAR	UNIT/KG FURNITURE	UNIT/KG CRATE	BENCH MARK
2019-20	0.67	0.66	
2020-21	0.66	0.66	
2021-22	0.66	0.66	0.62



ENERGY CONSUMPTION - UTILITY

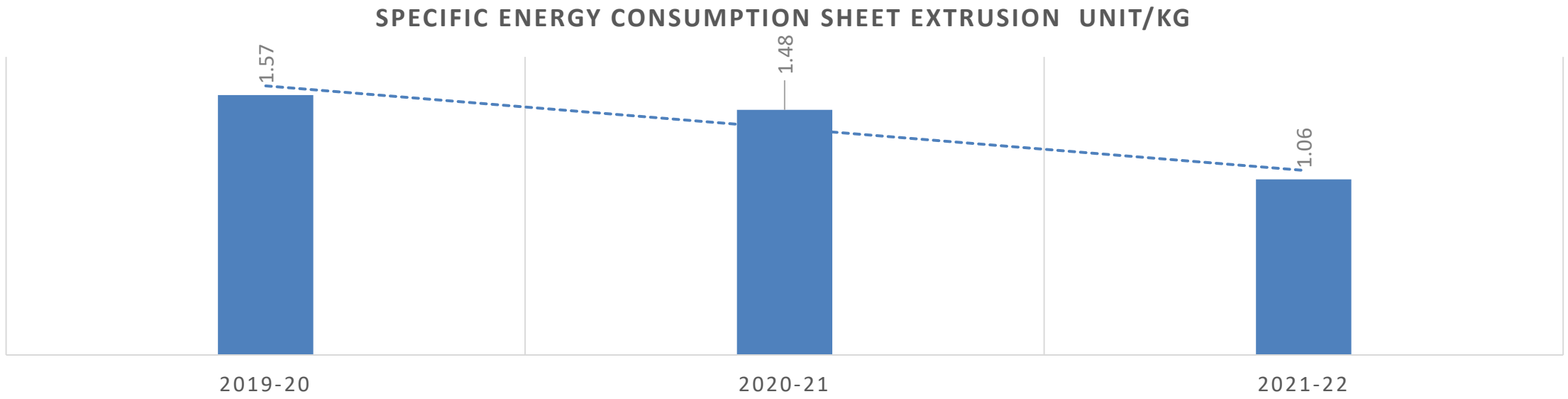
SPECIFIC ENERGY CONSUMPTION IN UTILITY		% improvement
YEAR	UNIT/KG	
2019-20	0.26	
2020-21	0.26	
2021-22	0.18	29

PLANT BENCH MARK IS 0.16 UNIT/KG BY IMPROVING PRODUCTIVITY TONNAGE



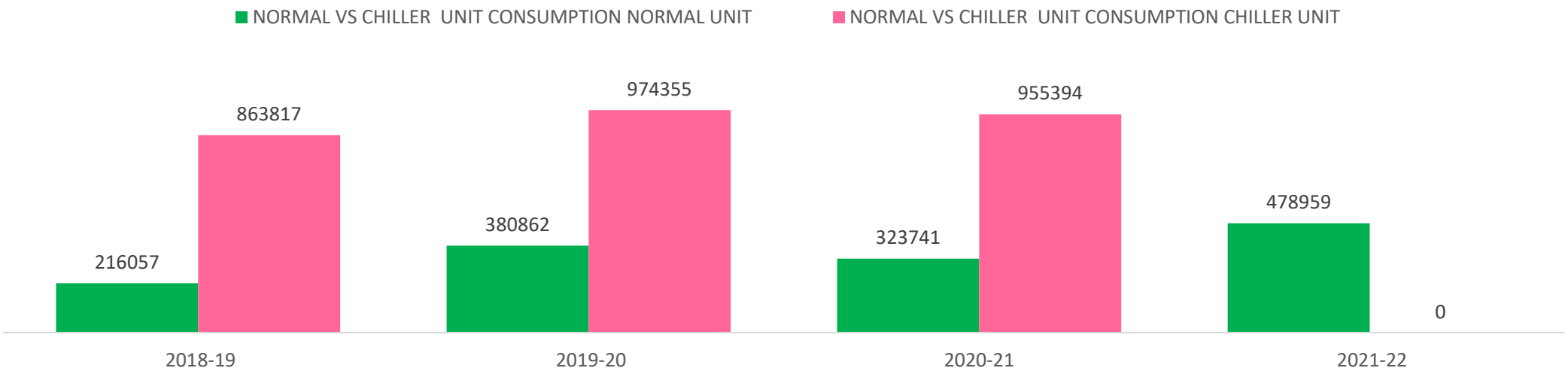
ENERGY CONSUMPTION - PP SHEET EXTRUSION

SPECIFIC ENERGY CONSUMPTION SHEET EXTRUSION	
YEAR	UNIT/KG
2019-20	1.57
2020-21	1.48
2021-22	1.06



UNIT CONSUMPTION : NORMAL VS CHILLER

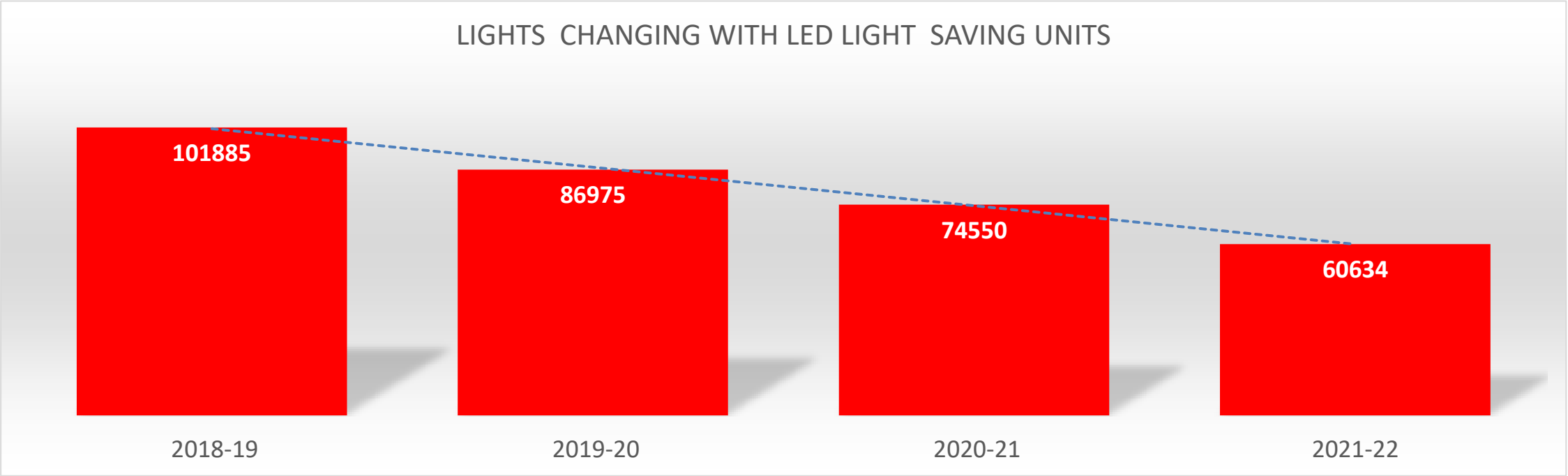
NORMAL VS CHILLER UNIT CONSUMPTION		
YEAR	NORMAL UNIT	CHILLER UNIT
2018-19	216057	863817
2019-20	380862	974355
2020-21	323741	955394
2021-22	478959	0



1- Optimize the pipe line sizes of the plant to reduce the pressure drop & efficient utilization of Pump.
2- Separate high pressure Ckt for the Mould for efficient cooling reduce the cycle time.
3- Separate Low Pressure Ckt For The Heat Exchanger.
4- Replaced water pump with energy efficient pump as per the duty parameters.
5- Cooling tower capacity increased as per the process requirement

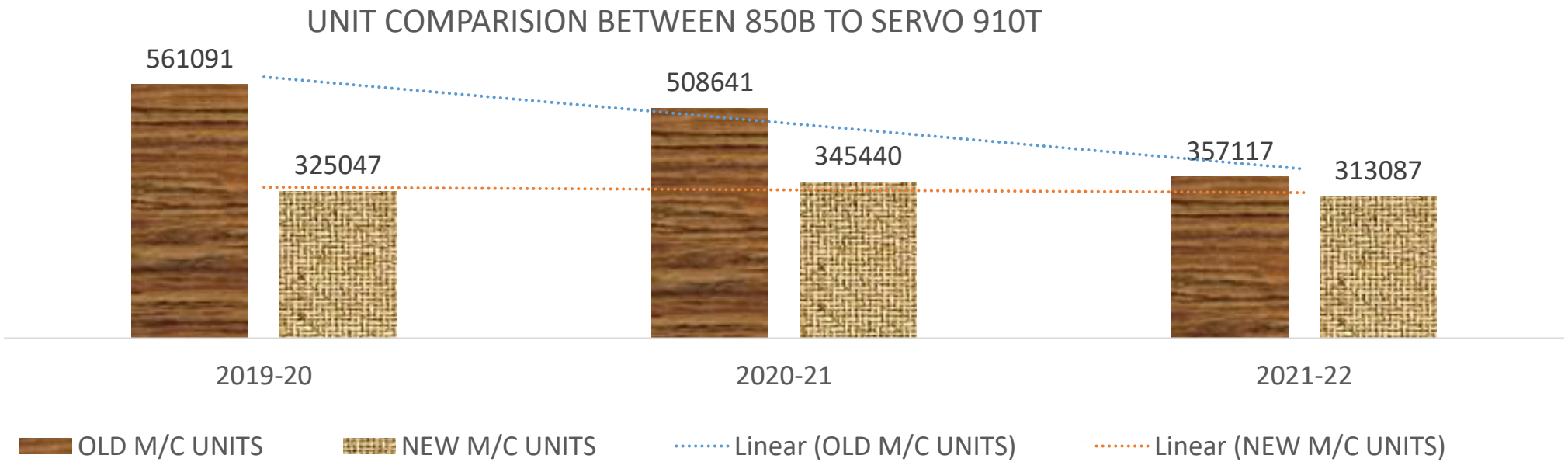
ENERGY SAVINGS THROUGH LED

LIGHTS CHANGING WITH LED LIGHT SAVING		
YEAR	UNITS	% improvement
2018-19	101885	
2019-20	86975	
2020-21	74550	
2021-22	60634	
		40



SAVINGS THROUGH TECHNOLOGICAL ADVANCEMENTS

REPLACEMENT OF OLD TECHNOLOGY 850 T MACHINE WITH LATEST TECHNOLGY SERVO MACHINE 910 T				
Years	**OLD M/C UNITS**	**NEW M/C UNITS**	**UNIT SAVED**	**SAVING IN LAKH**
2019-20	561091	325047	236044	17
2020-21	508641	345440	163201	11
2021-22	357117	313087	44030	3
TOTAL	**1426849**	**983574**	**443275**	**31**



SAVINGS THROUGH TECHNOLOGICAL ADVANCEMENTS

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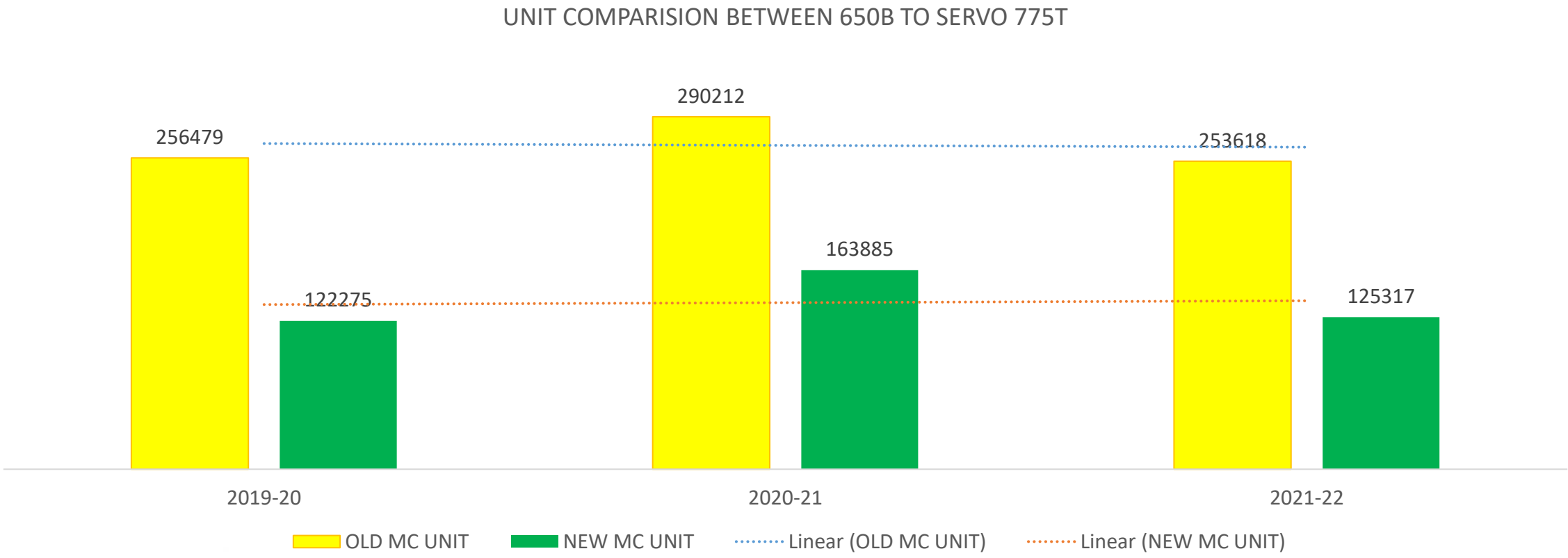
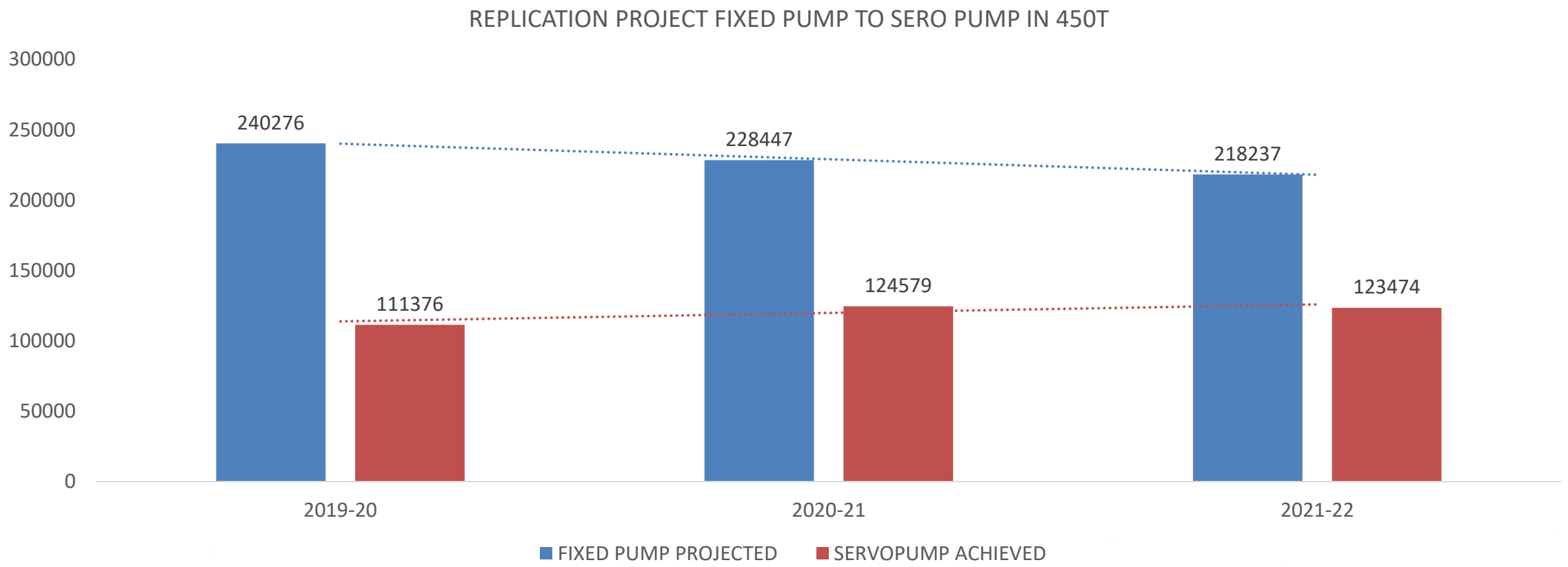
REPLACEMENT OF OLD TECHNOLOGY 650B TON WITH OMEGA SERVO 775C				
Years	**OLD MC UNIT**	**NEW MC UNIT**	**UNIT SAVED**	**SAVING (LAKH)**
2019-20	256479	122275	134204	9
2020-21	290212	163885	126328	9
2021-22	253618	125317	128301	9
TOTAL	800309	411476	388832	27



SAVINGS THROUGH TECHNOLOGICAL ADVANCEMENTS

	FIXED PUMP PROJECTED	SERVOPUMP ACHIEVED	UNIT SAVED	SAVING IN LAKH	INVESTMENT
2019-20	240276	111376	128900	9	
2020-21	228447	124579	103868	7	
2021-22	218237	123474	94763	7	
	686960	359429	327531	23	13 LACK



INNOVATIVE WAYS ADOPTED FOR ENERGY SAVINGS

- Utility Distribution Piping layout changed to increase water pressure
- Hydraulic fixed displacement pumps, replaced with variable pump with servo motor
- Sodium vapor Lighting changed into LED Lights.
- Use of in house designed gravity conveyor for finished goods unloading from first floor.
- VFD Installed at process pump for optimizing the process pump utility.
- Cooling tower fan blade replaced from C.I to FRP.
- Thermography & power quality audit conducted regularly.
- Extruder Barrel Insulation for prevention of heat loss
- Sensor fitted in cooling tower to cut fan supply as and when temp. achieved.

KAIZEN IDEA SHEET

TPM JIPM TPM CLUB INDIA	KAIZEN IDEA - SHEET	ACTIVITY	KK	JH	QM	PM	SHE	OTPM	DM	ET
		LOSS NO / STEP	√	√			√			
		RESULT AREA		P	Q	C	D	S	M	

PLANT :	*TSIL LALRU, PUNJAB*	**MACHINE :**	*Packing area*

KAIZEN THEME :

Packing Materials unloading system

IDEA :

- Not using lift for packing materials unloading.
- To saving MANPOWER & time to moving & unloading.

PROBLEM / PRESENT STATUS : (In words)

-Packing Materials unloading by lift. -
Electricity consumption & manpower used for unloading & moving materials.

(Illustration with sketch)

COUNTERMEASURE :

BENCH MARK :	-
TARGET :	1 week
KAIZEN START :	Mar' 19
KAIZEN FINISH :	Mar' 19

TEAM MEMBERS

1.	*Praveen Kumar Panda*
2.	*Manish Tiwari*
3.	*Kulbir Singh*
4.	*Saab singh*
5.	*PrakashChand*

ANALYSIS :

-For unloading packing & moving materials to location needed 2 manpower for 8 hr/day. -Problem came for packing materials unloading due to lift busy for unloading materials, manpower & electricity waste.

RESULTS :

-Materials unloading & shifting time is reduce 2hr/day for 2 manpower.
-Packing materials loading time also reduce. -
electricity consumption reduce to zero.

BENEFITS :

- Saving manpower for unloading & shifting.
- saving electricity.
- Fatigue removed.

saving from manpower

2 mapower saving for 6 hrs per day. -saving in rupees-300x2x30x12=216000

Saving of electicity

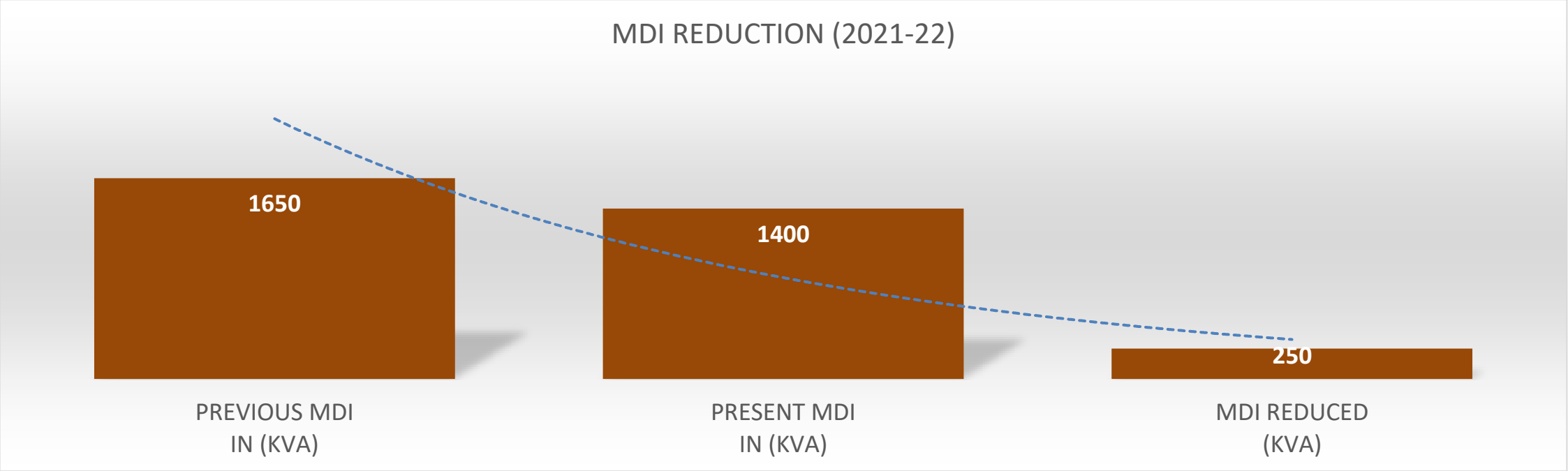
Electricity consumption per year is-3.85x1x30x12=1386 Saving in rupees=1386x7=9702

SCOPE & PLAN FOR HORIZONTAL DEPLOYMENT

SL NO	M/C NO.	TARGET DATE	RESPONSIBILITY	STATUS
1	Packing area	15-03-2019	PRAVEEN PANDA	Done

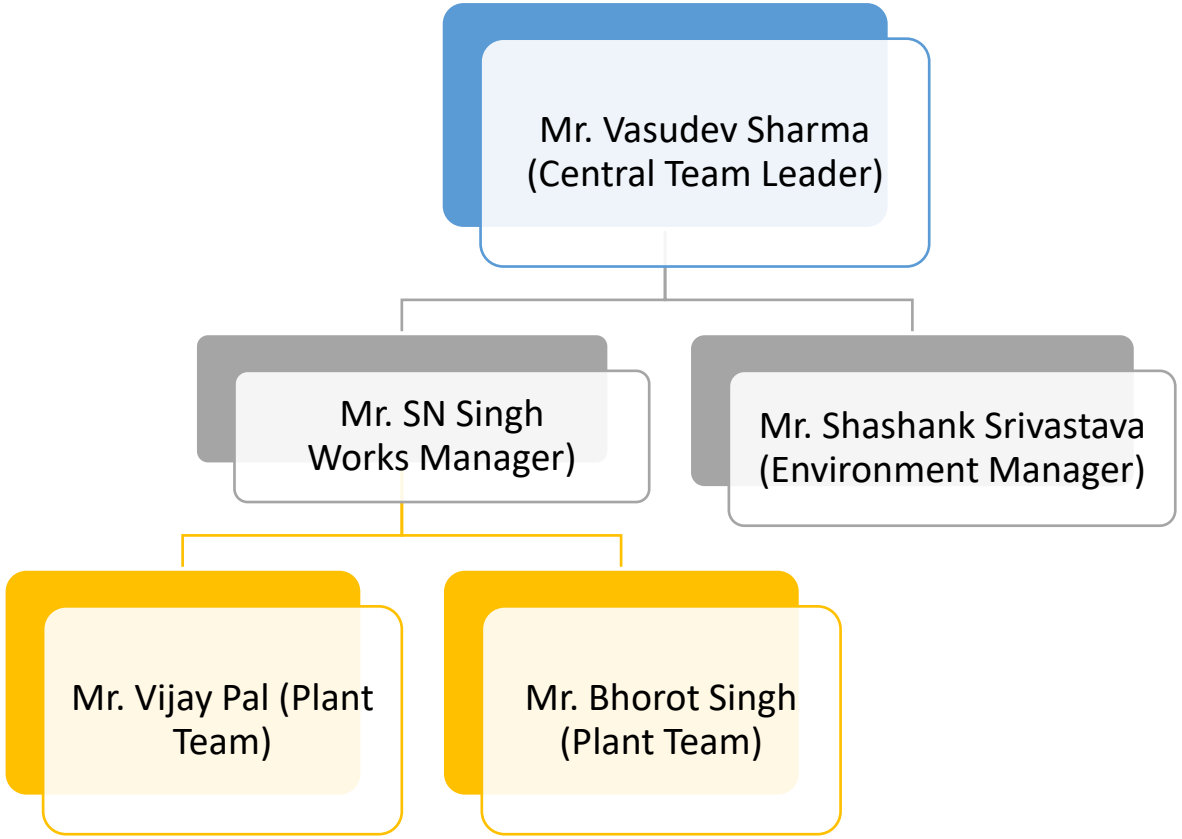
SAVINGS FROM MAX. MDI

SAVING FROM MAXIMUM DEMAND INDICATOR (MDI) REDUCTION				
YEAR	PREVIOUS MDI IN (KVA)	PRESENT MDI IN (KVA)	MDI REDUCED (KVA)	FIXED CHARGE REDUCED /YEAR IN LAKH
2021-22	1650	1400	250	2.42



*250 KVA Contract Demand Reduction by improving the energy efficiency of the plant in spite of addition of 5 injection molding machine in same Infrastructure

Energy & Environment Team And Monitoring



Daily Monitoring Meeting Chaired By Plant Head .

INNOVATIVE WAYS ADOPTED FOR ENERGY SAVINGS

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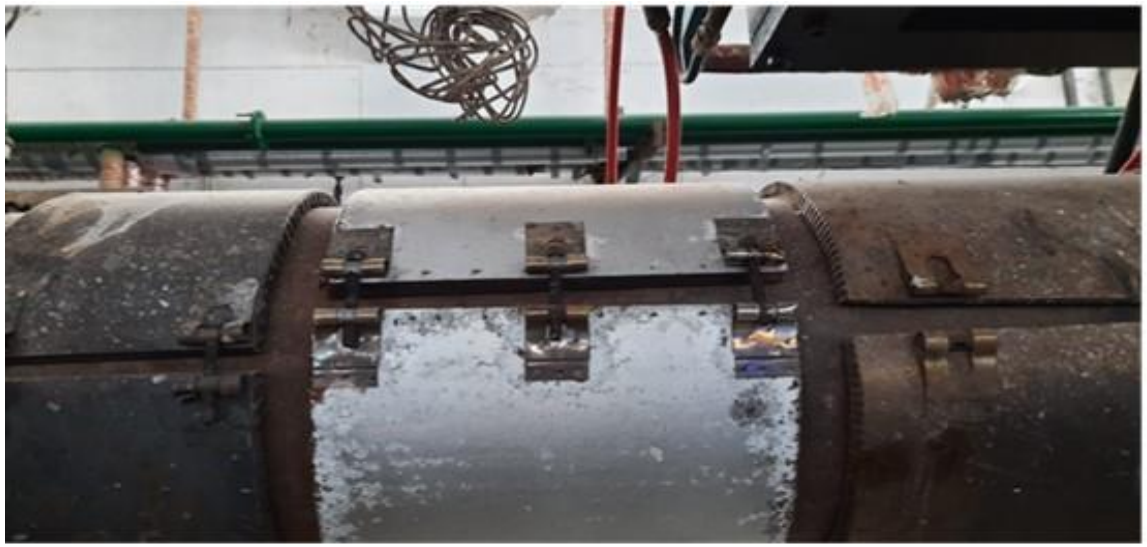
WITHOUT HEATER JACKET



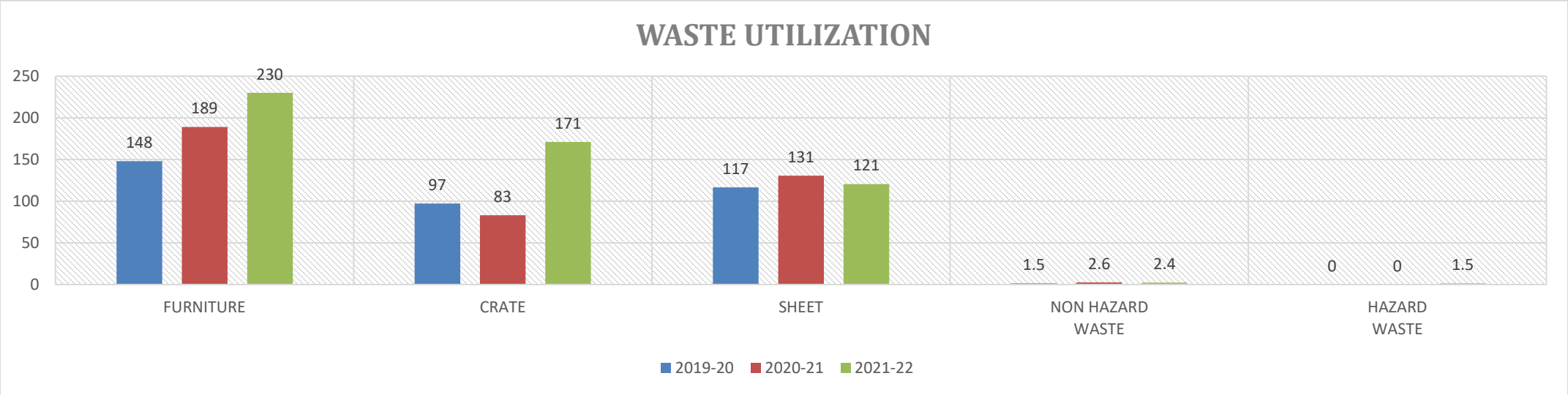
HEATER JACKET

SOLAR PANEL

UTILITY PUMP

Waste Utilization

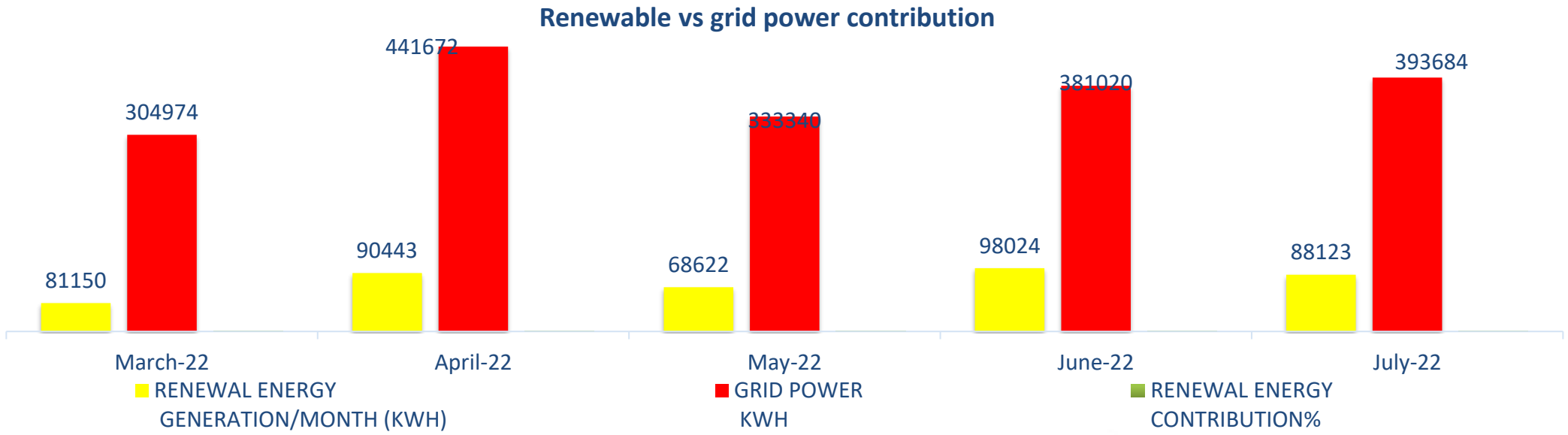
	FURNITURE	CRATE	SHEET	NON HAZARD WASTE	HAZARD WASTE
2019-20	148	97	117	1.5	0
2020-21	189	83	131	2.6	0
2021-22	230	171	121	2.4	1.5



* WE ARE USING ALL PLASTIC PROCESS WASTE AFTER REGRINDING.
*WE ARE NOT SELLING ANY PLASTIC WASTE WHATEVER GENERATED.
*HAZARD AND NON HAZARD WASTE DESPOSED OF THROUGH AUTHRISED VENDOR.

Unit Roof Top Solar- Green Capex

ROOF TOP SOLAR PANNEL 995 KW INSTALLATION COMMISSIONED IN MARCH 2022 .					
MONTH	RENEWAL ENERGY GENERATION/MONTH (KWH)	GRID POWER KWH	RENEWAL ENERGY CONTRIBUTION%	SAVING IN LAC	INVESTMENT
March-22	81150	304974	21	5.31	
April-22	90443	441672	17	5.94	
May-22	68622	333340	17	4.53	
June-22	98024	381020	20	6.22	
July-22	88123	393684	18	5.40	3.56 Crore
TOTAL	**426362**	**1854690**	**19**	**27.40**	



Group Re-Mission

Years	On Site Solar Installed Capacity in Mwp	Solar Units (In Lakh)	Wind Units (In Lakh)	% of overall Electrical Energy	Group Capex On Solar
2019-20	6.12	78.79	169.82	9.18%	20.93 Cr
2020-21	8.60	86.72	166.42	10.04%	Under Opex
2021-22	17.08	102.85	227.28	12.37%	14.82 Cr
2022-23 (Under WIP Phase)					33.98 Cr
Total		**268.46**	**563.52**		**69.73 Cr**

Group Sustainability Actions

*10 Nos. Green Certified Products (1 copy attach)

*17 Mwp Roof Top Solar Installation

*10 Mwp Roof Top Solar in WIP FY 22-23

*ISO 14001 Certifications

*Low Carbon Emissions

*Plantation Drive by units

*33 Millions Re-Units in FY 21-22

*Disclosure of GHG Emission


Confederation of Indian Industry

CII-Green Products and Services Council

hereby certifies that

INSUSound XLO

(GPSI36001)

Manufactured by Supreme Industries Ltd - PPD meets the requirements of GreenPro Certification and qualifies as Green Product.

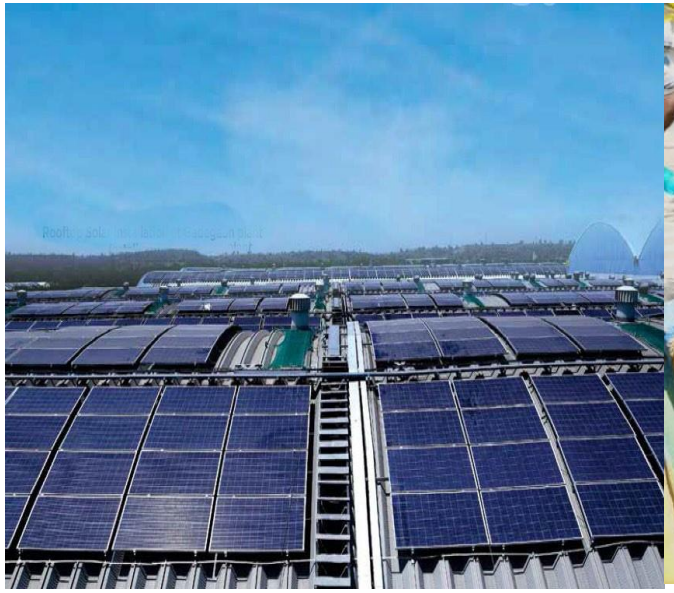
This certification is valid till December 2023

Jamshyd N Godrej
Chairman, CII-Godrej GBC

ParasuRaman R
Chairman, CII-Green Products & Services Council

K S Venkatagiri
Executive Director, CII-Godrej GBC

Supporting Council and programmes



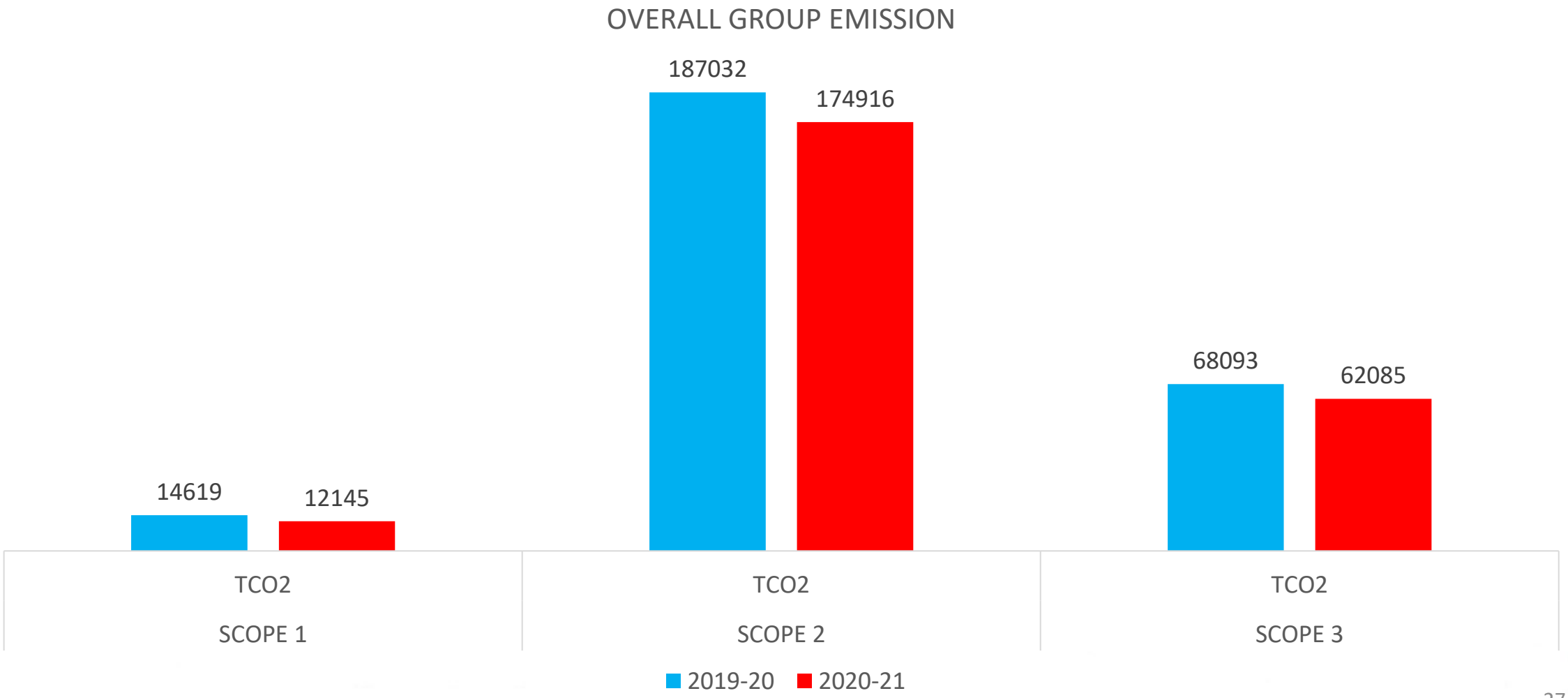
Group Energy Mix Consumption (In Lakh) Targets

Particulars	FY 2019-20 (Actual)	FY 2020-21 (Actual)	FY 2021-22 (Actual)	FY 2022-23 (Budget)	FY 2023-24 (Budget)
Discom Units	2,414.83	2,238.09	2,301.69	2,235.60	2,285.00
DG Units	43.33	29.03	27.22	27.00	27.00
Wind Units	78.89	86.72	102.85	147.00 ↑	147.00
Solar-Capex	49.65	42.17	48.45	307.00 ↑	364.00
Hybrid Power			-	35.00 ↑	142.00
Solar Third Party	120.17	124.25	178.83	279.40 ↑	290.00
Office & Depot			9.18	10.00	10.00
Total	**2,706.87**	**2,520.26**	**2,668.22**	**3,041.00**	**3,265.00**

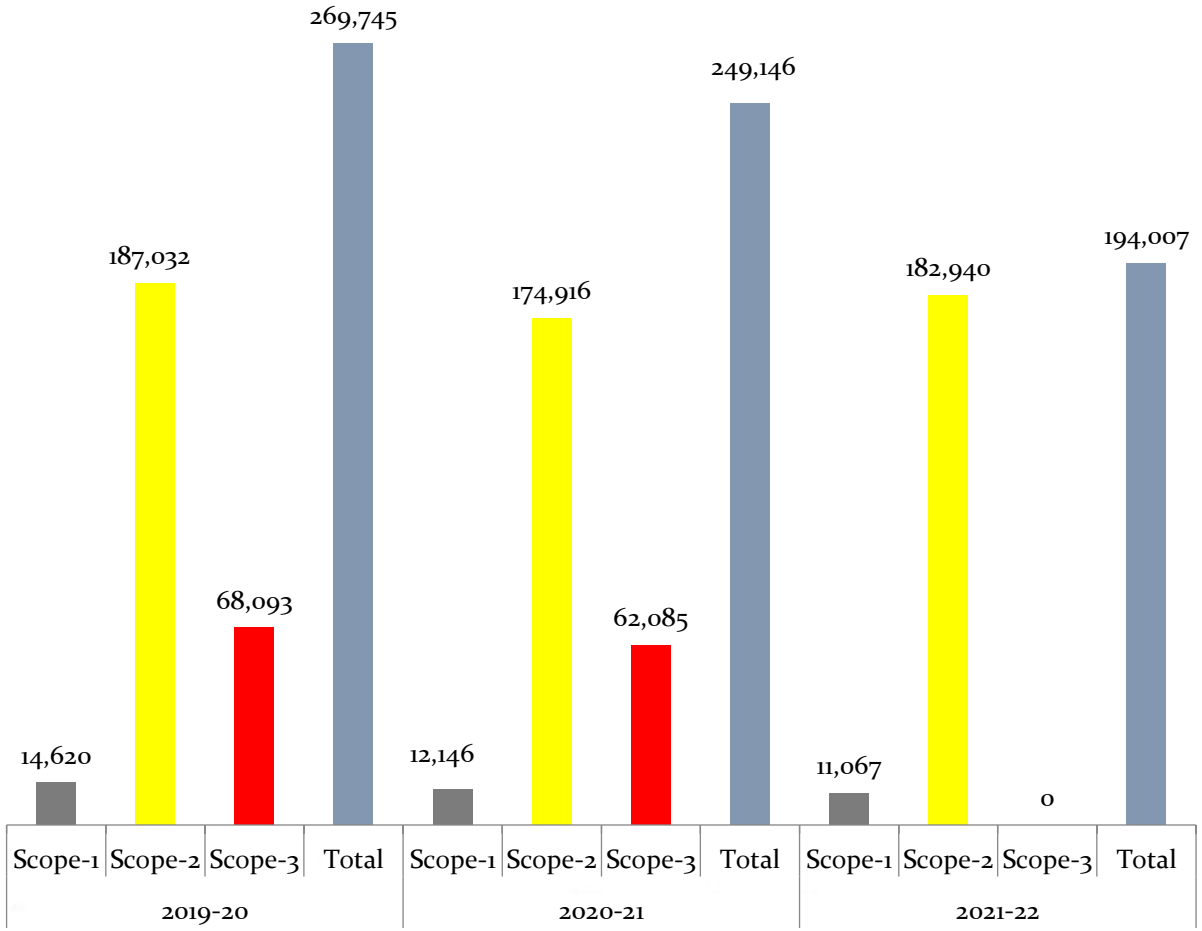
Group : Re Power Contribution

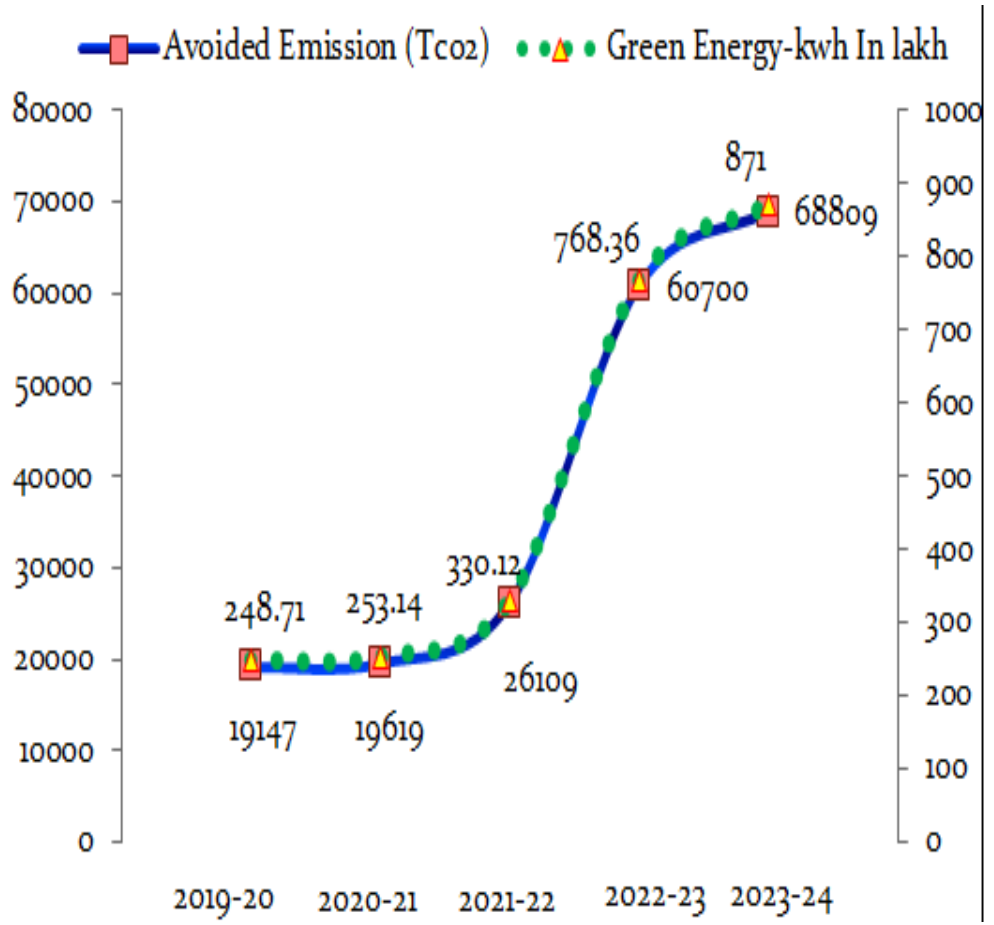
Particulars	Wind Units	Solar Capex	Solar Third Party	Hybrid Units	Total Of Green Energy	DG Units	Discom Unit
FY 2019-20	2.91%	1.83%	4.44%	-	9.18%	1.61%	89.21%
FY 2020-21	3.44%	1.67%	4.93%	-	10.04% ↑	1.15% ↓	88.81% ↓
FY 2021-22	3.85%	1.82%	6.70%	-	12.37% ↑	1.02% ↓	86.61 % ↓
FY 2022-23 (Budgeted)	4.84%	10.09%	9.18%	1.15%	25.26% ↑	0.89% ↓	73.85% ↓
FY 2023-24 (Budgeted)	4.60%	9.15%	9.08%	4.44%	27.27% ↑	0.84% ↓	71.89% ↓

GROUP'S EMISSION SUMMARY



Group Carbon Dashboard





Unit GHG INVENTORIZATION

(a) Information on GHG Invetorisation and public disclosure- Company listed at stock exchange and voluntary adopted BRSR reporting from FY 21-22.

(b) Scope of emission-

- Scope-1- Emission from owned resources i.e. Diesel consumed in DG sets, petrol/diesel in vehicle, LPG combustion, refrigerant.
- Scope-2- Energy purchased from discom
- Scope-3- T&D losses from discom, Upstream fuel transport, Employee commute, Upstream transportation, downstream transportation.

(c) Unit GHG Emission Details:-

Years	Absolute Emission TCo2	Emission Intensity Kg Co2/MT
2019-20	5704	810
2020-21	5818	833
2021-22	4650	638

Group Sustainability Targets

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Short Term

- Replace 25% Energy
- Energy cost reduction by 8-9% by Re-Power
- Reduction in GHG Emission by 2%-3% by 2024-25

Long Term

- Reduce Power Cost by efficient discom Tariff utilisation.
- Application of new IoT technology in Mfg. Process
- Low Carbon Emission by substution of fuel LPG to PNG
- EnMS 50001 **certification**

Installation of Roof Top Solar

- FY 22-23 10 Mwp
- FY 23-24 4 Mwp
- FY 24-25- 4 Mwp

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