motherson

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22nd National Award for Excellence in Energy Management

Marelli Motherson Automotive lighting India Pvt. Ltd.,Pune

Presented By:-

Shridhar Deshmukh (Unit Head-Operations)

Sahebrao Bhosale (Sr. Manager –Maint. & Energy)

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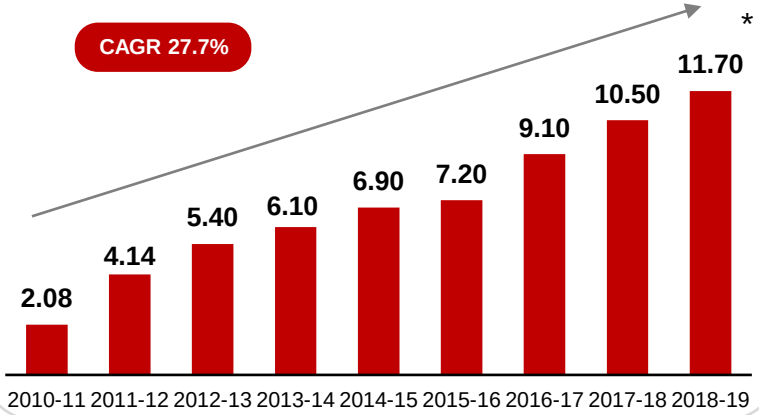
MARELLI

CII

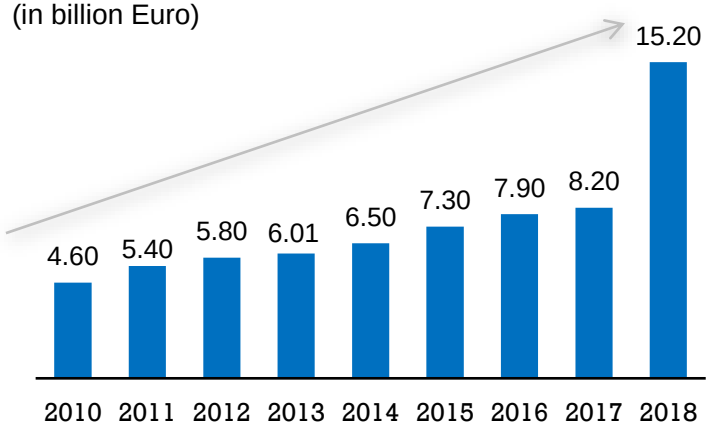
Marelli Motherson – Company Introduction

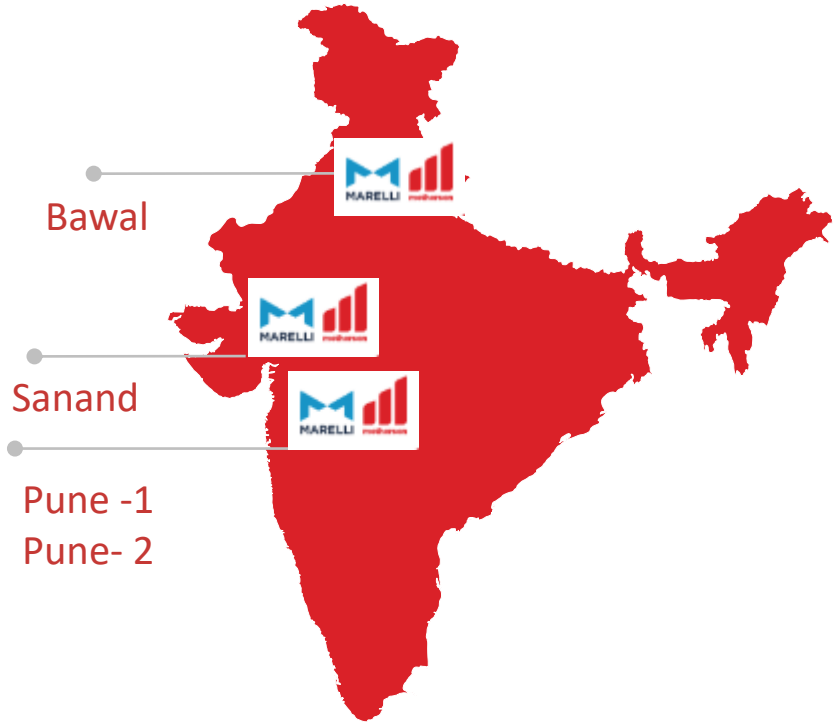
- **50 : 50** Joint Venture between Marelli (formerly known as Magneti Marelli) & Samvardhana Motherson (India) to cater the growing Indian Automotive Market.

SMG GROUP REVENUES
(in billion USD)



MARELLI GROUP REVENUES
(in billion Euro)

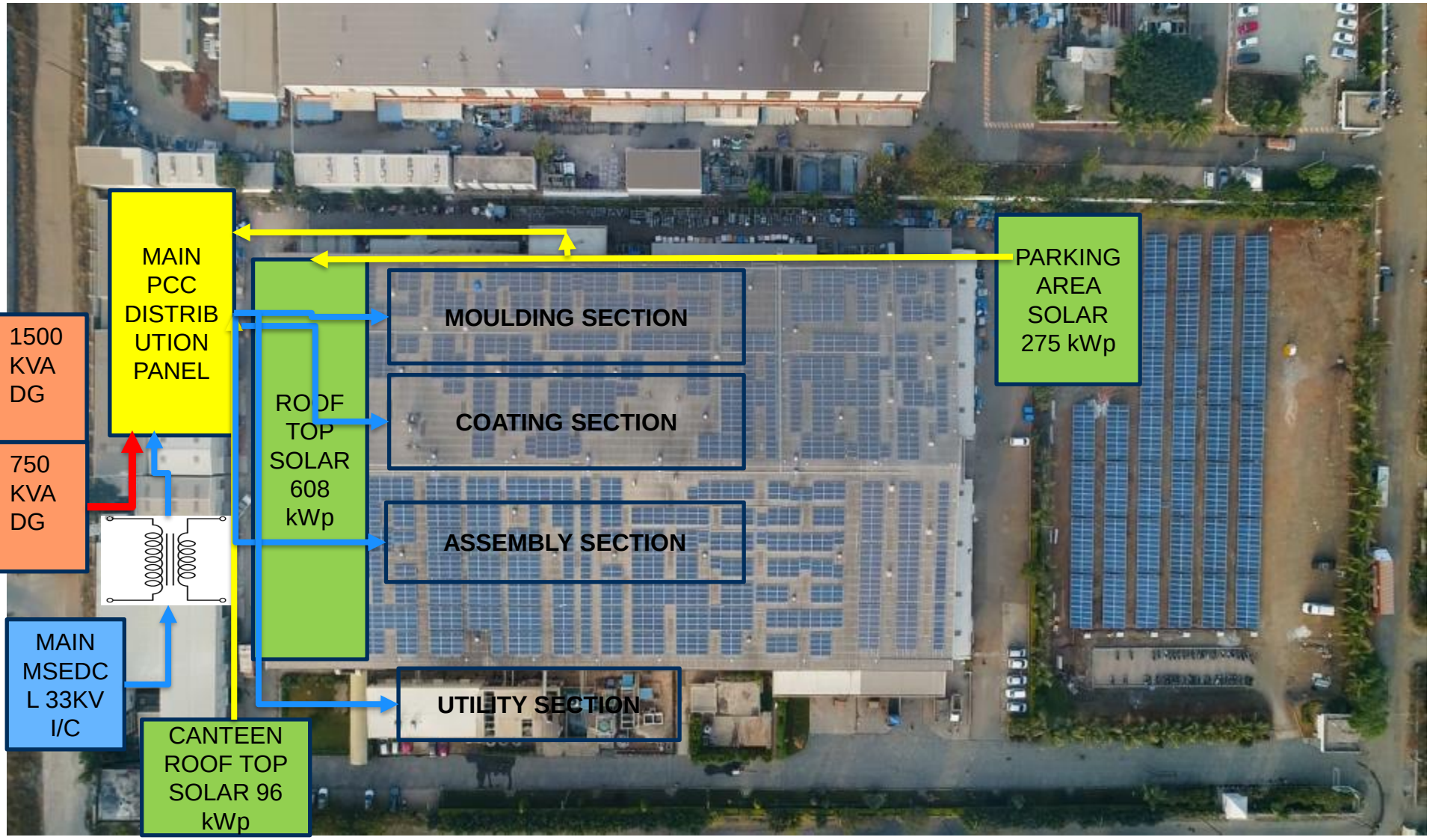




Product and Process

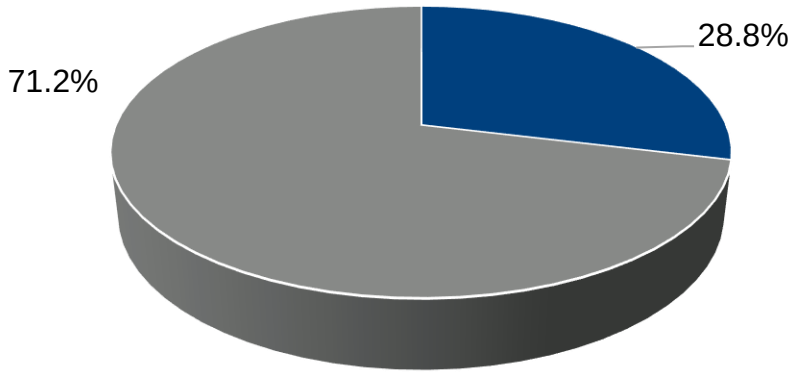
Product	Head lamp	Rear Lamp	Air Intake manifold	PBA
Process	HL housing Moulding HL reflector Moulding → Base coating Hl bezel Moulding → Metalizing Hl lens Moulding → Hard coating → Assembly	RL housing Molding → Metalizing RL lens Molding → Assembly	Upper and Lower cover Molding → Assembly	→ Assembly

Company Introduction – Energy Sources



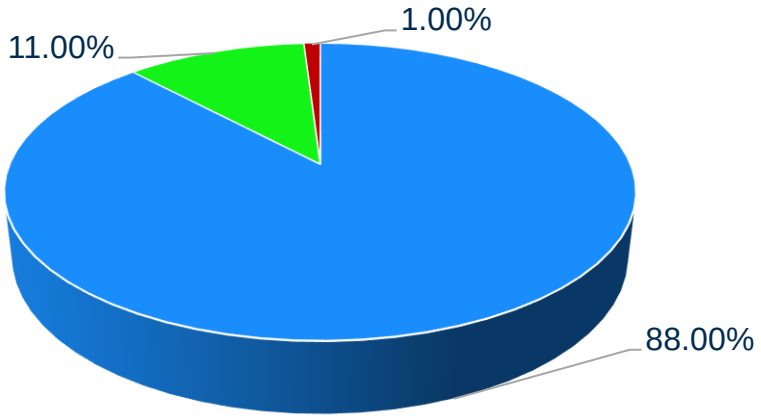
Energy Consumption Overview

Plant Transformation Cost 2021-22



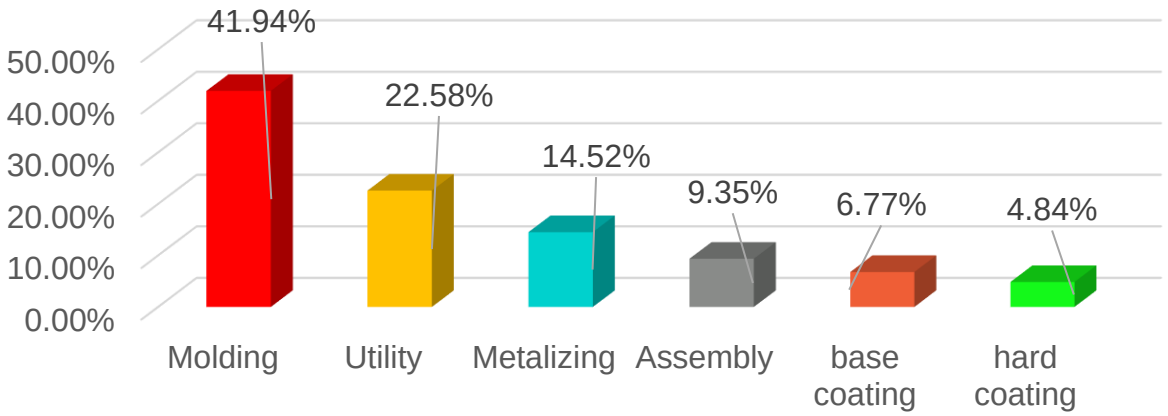
- Energy (73.47 Mil. INR)
- Labor+Mainte.+Scrap+Consumables+Packaging (255.00)

Electrical Sources stratification 21-22



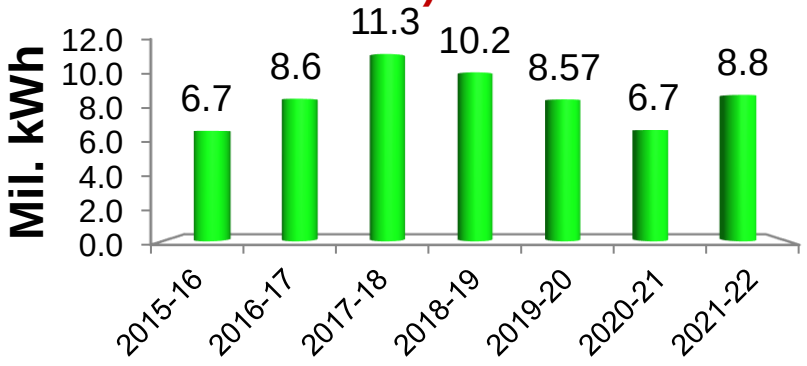
- MSEDCL
- Solar
- Fuel
- Thermal Energy

Section wise Consumption

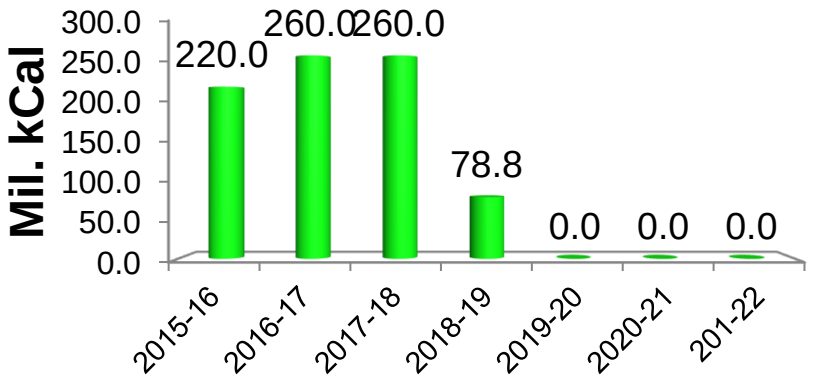


Energy Consumption Overview

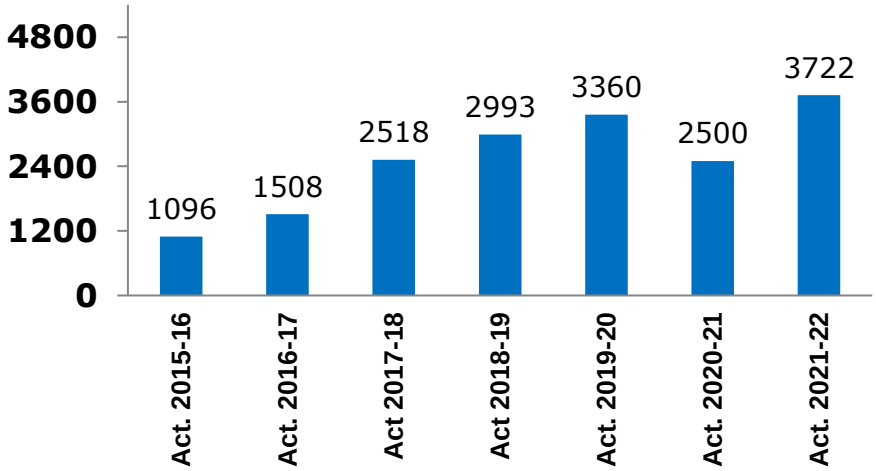
Total Electrical Energy Consumption (MSEDCL + Solar+ DG)



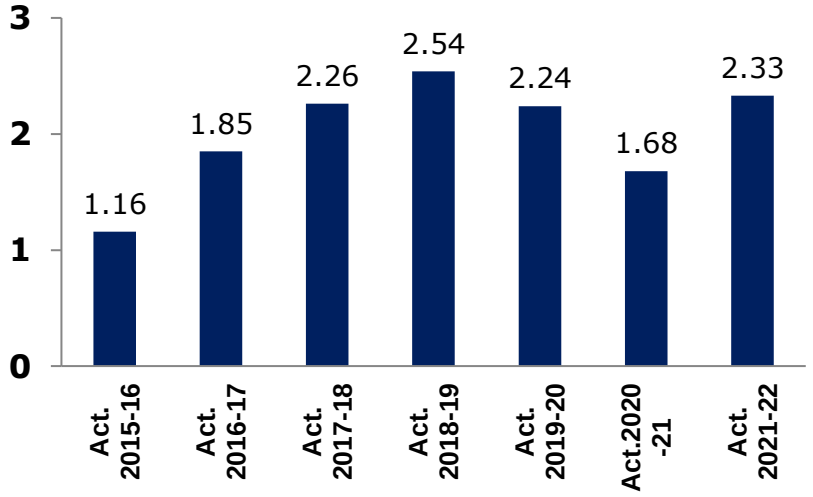
Total Thermal Energy Consumption



Sales Turnover in M. INR

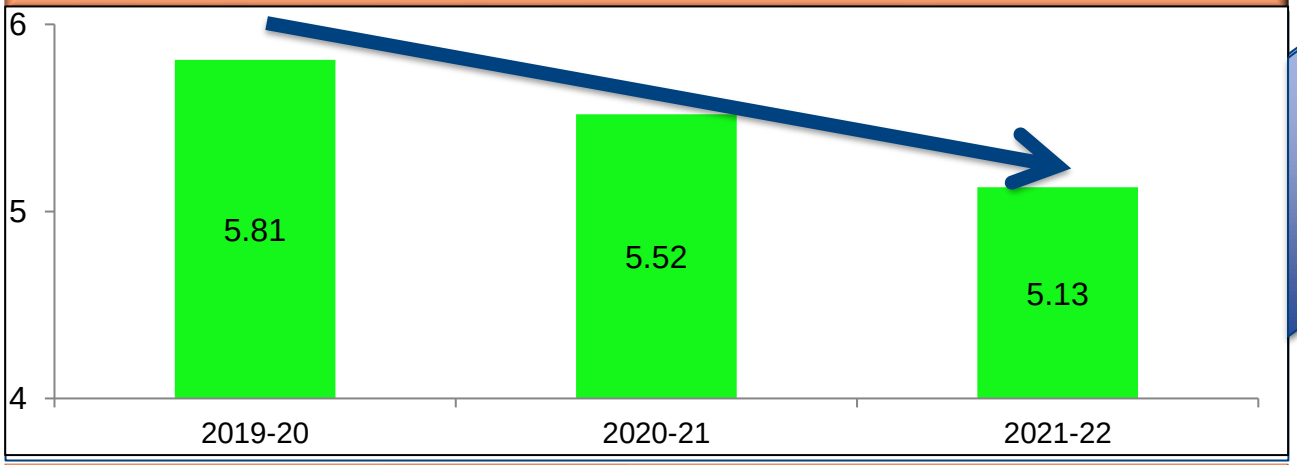


Volume in Million Nos.



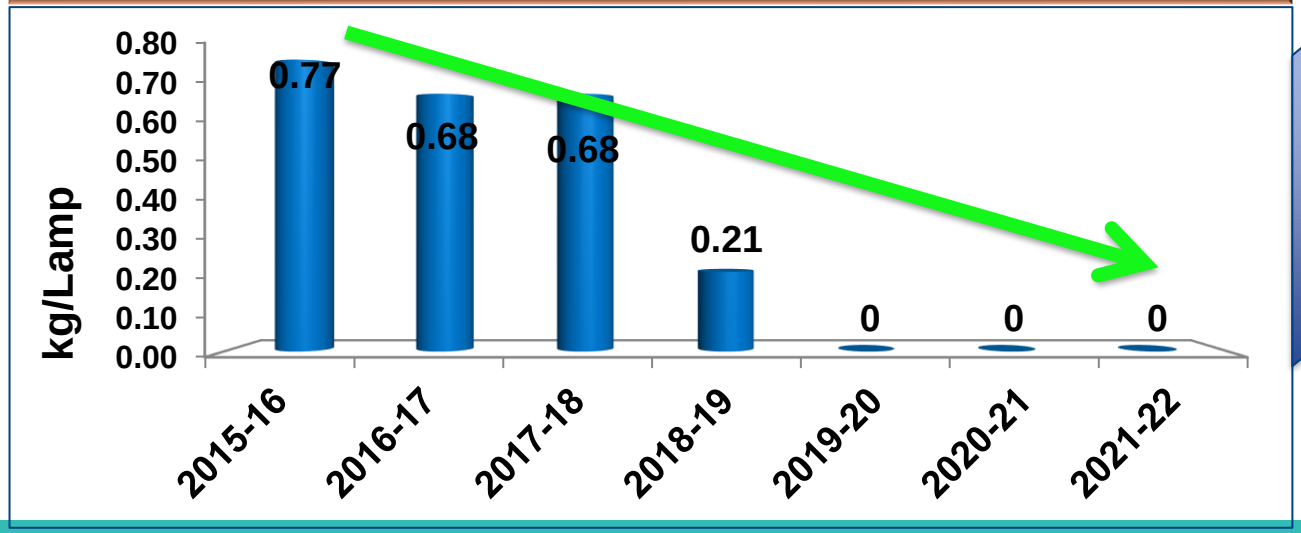
Specific energy Consumption

Specific Energy consumption kWh/Kg plant level



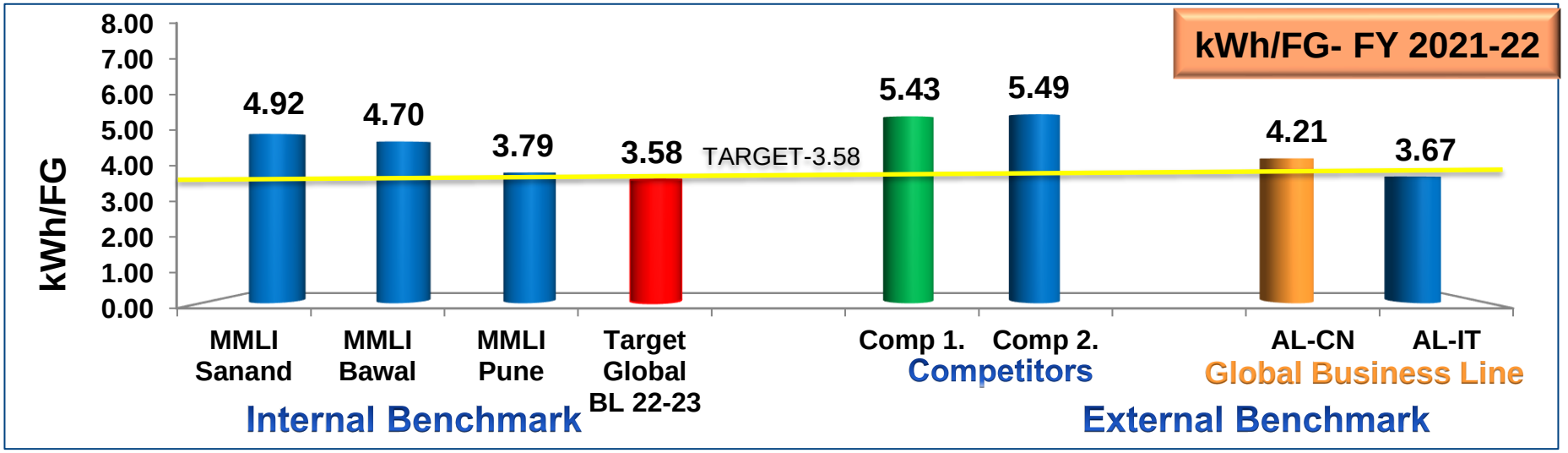
12% Reduction in last three years
Last one year 5.00% SEC reduction

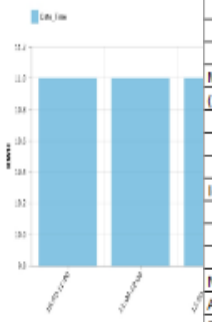
Specific Energy consumption Thermal, Kg Lpg /Lamp



100% LPG and washing process eliminated with new technology machine

Competitors, National and Global benchmark





EMS data

Machine		NB 430T	NB 550T-II	550T-I	650T	1100T	1300T	910T	1000T	900T- 2	850T	900T-1	1050T	BMC-1	BMC-2
Consumers															
In KW	Motor 1	45	45	90	45	36	45	13.6	37	37	30	30	55	90	107
	Motor 2				45	175	45	13.6	37	37	30	30	55		
	Motor 3					7.5	45	13.6						7.5	7.5
	Motor 4							13.6							
Motor type	Motor 1	duction/ DI	duction/ DI	duction/ DI	duction/VF	Servo	duction/VF	Servo	duction/ DI	duction/ DI	duction/ DI	duction/ DI	duction/VF	duction/ DI	Servo
(induction/servo/VFD controlled)	Motor 2				Induction/VF	Servo	duction/VF	Servo	duction/ DI	duction/ DI	duction/ DI	duction/ DI	duction/VF	induction	induction
	Motor 3					induction	duction/VF	Servo							
	Motor 4							Servo							
	REFILLING	hyd. Motor	hyd. Motor	hyd. Motor	hyd. Motor	hyd motor	hyd. Motor	hyd motor	induction	induction	induction	induction	hyd motor	hyd motor	hyd motor
Idle current (Amp)	Motor 1	30	26.12	59.36	40.29	4.12	41.66	0.45	25.9		22.11	27.39	48.7	36.5	2.15
	Motor 2				38.91		38.01	2.13	25.83		22.54	27.09	47.7		
	Motor 3						38.9	0.87							
	Motor 4							2.14							
Nozzle heater (KW)	Heater 1	0.5	0.5	1.1	0.5	0.5	0.5	0.75	0.8	0.8	0.8	0.8	0.5		
Adapter	Heater 2	_	_	_	1	_	1.5	1.5	_	_	_	_	1	_	_
Barrel heater (KW)	Zone 1	7.1	2.8	7.7	11.48	12.2	16.39	12.4	6	6	8	8	11.48		
	Zone 2	7.1	2.8	7.7	11.04	12.2	14.07	12.6	6	6	8	8	11.04		
	Zone 3	7.1	2.8	7.7	11.04	12.2	14.07	12.6	6	6	8	8	11.04		
	Zone 4	7.1	2.8	7.7	10.13	12.2	12.9	12.6	6	6	8	8	10.13		
	Zone 5			7.7		12.2			6	6	8	8			
	Zone 6					12.2									
Barrel length (mm)		2200	1700	2800	2800	3415	3050	2150	2900	2840	2910	2750	2900		
Barrel diameter (mm)		150	105	180	226	260	245	215	245	220	220	220	230		
Hourly consumption kWh		18	10.7	21	35	45	53	21	24	25	24	24	40	30	20

External Energy Audits

Sr.	Auditing Agency	Date	Days	Total observations	Closed Observations	Pending Projects
1	Power Tech Conlt.	Mar.2022	25	05	03	1. Water cooled Chiller installation –Nov.22 planned 2. Heat pump-Planned Oct.22
2	Delta	Jan.2022	2	02	01	1. SVG installation-Planned in Aug.22
3	MM Central team	Aug.2021	01	01	01	
4	Accord Energy	May.2021	1	05	05	
5	Xero	Feb.2021	1	02	02	

Major ENCON projects through internal benchmarking

Short Term Plans

- IE 1 motors replacement with IE 3 37 no's. (Ongoing)
- Dehumidifier optimization with close loop circuit (Ongoing)
- SVG installation to Reduce Delta kWh to kVAh (FY 22-23)
- Barrel heater load reduction

Mid Term Plans

- Polycold energy saving mode
- Rotary pump VFDs
- Dehumidifier set point optimization
- Induction heating for IMM-ongoing (Ongoing)

Long Term Plans

- Induction Motor replacement by servo
- Chiller replacement from Air cooled to water cooled 125 TR (FY 22-23)
- VFD Drive for Negri bossi machines (FY 23-24)
- Wind Power procurement with captive Mode (FY 23-24)

Marked projects from Global Business line/ Internal Benchmarking

Marked projects from External Energy Audit

Vision on Energy Efficiency

- **Vision:-**To create an energy-friendly plant, where each person takes responsibility for energy consumption and actively works to reduce it.

- **Objectives:-**Use new technologies and renewable sources to

• Reduce energy consumption,

• Reduce CO_2 emissions generated

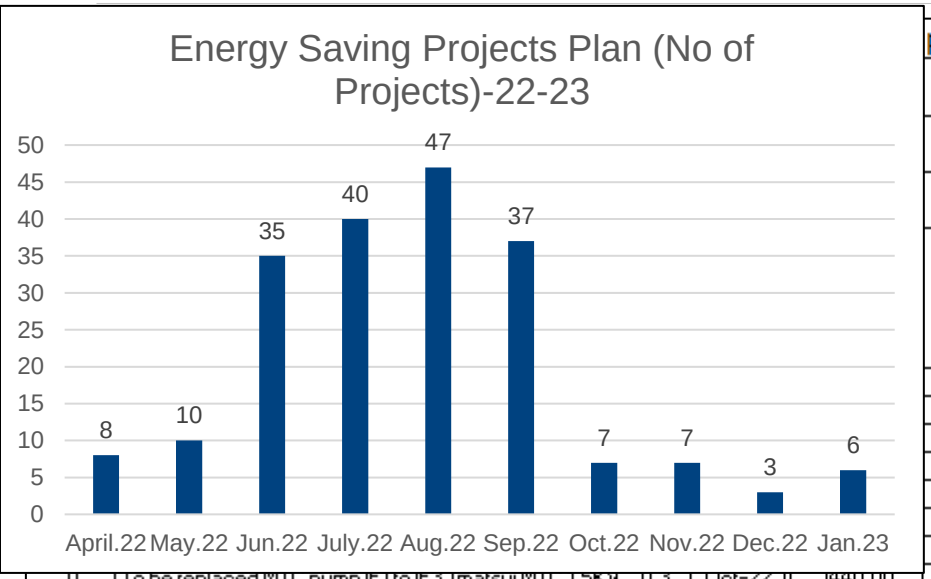
- **Targets:-**

- Reduction in Energy Consumption by 16% for FY 2022-23
- Increase Renewable energy Share up to 50%

- **Major Projects in Progress**

1. Water Heat recovery for compressors
2. Heat pump for Annealing Ovens
3. Servo conversion of Existing IMM
4. Chiller replacement with more efficient chiller

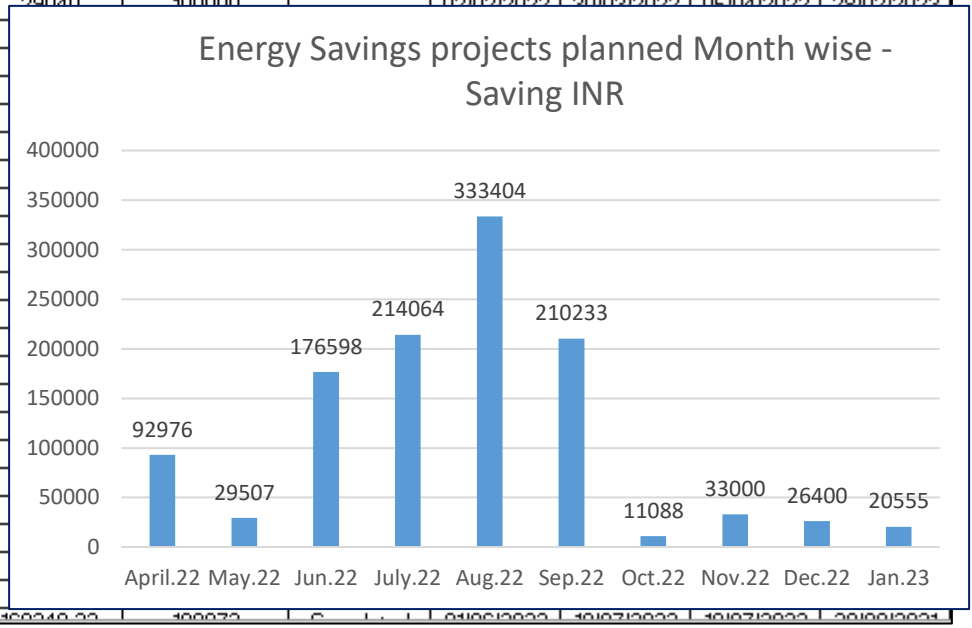
Road map to achieve target 2022-23



planned for 2022-23

Saving/Year	Investment	Status	P	D	C	A
109137.6	147000	Completed	10/10/2021	05/01/2022	12/01/2022	30/01/2023
96087.2	147000	Completed	10/10/2021	05/01/2022	12/01/2022	15/06/2022
589124.8	295000	Completed	10/10/2021	31/12/2021	05/01/2022	15/06/2022
77545.6	107000	Completed	01/02/2022	29/04/2022	05/05/2022	28/02/2023
65296	107000	Completed	01/02/2022	20/04/2022	11/05/2022	28/02/2023

12	To be replaced MTC pump IE1 to IE3 (matsui MTC 1.5KV	0.3	Oct-22	1440.00
13	To be replaced MTC pump IE1 to IE3 (matsui MTC 1.5 KV	0.3	Oct-22	1440.00
14	VFD to Arzuffi 1 rotary pump	1.11	Jun-22	8311.00
15	VFD to Arzuffi 2 rotary pump	1	Jun-22	5588.00
16	VFD to Arzuffi 3 rotary pump	1	Jun-22	5608.00
17	VFD to Arzuffi 4 rotary pump	1	Jul-22	5180.00
18	VFD to Arzuffi 5 rotary pump	1	Jul-22	5290.00
19	VFD to tecno vacuum machine rotary pump	1	Jul-22	4796.00
20	Induction Heater to DP pump for arzuffi 1	3	Jun-22	21660.00
21	Induction Heater to DP pump for arzuffi 2	3	Jun-22	21000.00
22	Induction Heater to DP pump for arzuffi 3	3	Jul-22	21000.00
23	Induction Heater to DP pump for arzuffi 4	3.1	Apr-22	21660.00
24	Induction Heater to DP pump for arzuffi 5	3	Jul-22	21000.00
25	Induction Heater to DP pump for Tecno Vcuume machi	2.37	Jun-22	17064.00
26	To be reduced barrel heater load of toshiba 650T	1.29	Jun-22	9288.00
27	To be reduced barrel heater load of NB 550T-1	1	Jul-22	7500.00



148 Nos New Projects identified, plan -13,00,000 Units saving, 16% overall reduction

Energy saving Projects – 2019-20

Sr.	Type of Project	No of Projects	kWh Saving Annual	Cost Saved Annual Mil. INR	Investment Made Mil. INR	ROI Months
1	Diffusion Pump Energy Saving Kit	05	180000	1.53	0.1	1
2	Heating idle off on annealing oven and hot plate welding machines	10	127810	1.08	0.32	4
3	VRF systems installation inste of Old Split and cass AC	04	168898	1.44	5.1	3.5
4	Exha loop cont	14	21788	0.18	0.04	3
5	Adiabatic cool se replacements on ch rs	03	79266	0.70	1.0	17
6	MTC, Conveyors auto off & DH weekly timer optimization in Molding area	82	21090	0.25	0.12	6
7	Heating optimization –Inductive heating on moldin	03	20898	0.18	0.12	8
8	Eco plu street li replace					12

Reduction in SEC 3.92% Over last year

Total Projects	kWh Saved	Annual Savings Mil INR	Investment Mil INR
138	640920	6.16	7.0

Energy saving projects – 2020-21

Sr.	Type of Project	No of Projects	kWh Saving Annual	Cost Saved Annual Mil. INR	Investment Made Mil. INR	ROI Months
1	Cooling tower pump motor replacement with higher efficiency pump and Motor	04	93928	0.83	1.0	16
2	AHU and HCBC blower replacement with EC & EC+ fan motors	04	37887	0.34	0.41	14
3	Compressed air free deionizing bars	05	4		0.6	30
4	Induction/Infr				0.16	13
5	Evaporati te individual fans	07	200	0.6	1.2	24
6	Cooling chamber for L lens instead compressed air	01	14700	0.13	0.5	46
7	Idle of VMM Circulation pumps & IMM MTC	19	15500	0.14	0.05	4
8	Thyriste fan and					8

Reduction in SEC 2.95% Over last year

Reduction in SEC 5.00% Over 2019-20 kWh/Kg

Total Projects	kWh Saved	Annual Savings Mil INR	Investment Mil INR
77	529355	4.71	5.86

Energy saving projects – 2021-22

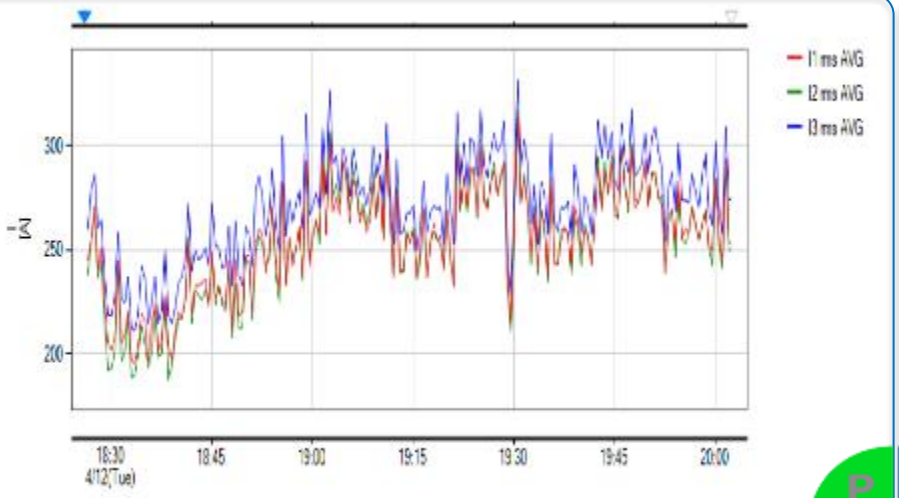
Sr.	Type of Project	No of Projects	kWh Saving Annual	Cost Saved Annual Mil. INR	Investment Made Mil. INR	ROI Months
1	Induction heaters on vacuum metalizing Diffusion Pump.	04	64000	0.56	0.6	12
2	Conversion of Old IE1 pump with motors to replace with more Efficient pum[illegible]s & IE3 Motors ,E[illegible]fans at C[illegible]ing [illegible]	07	242000	2.2	1.6	09
3	Comp[illegible]	02	[illegible]2		0.12	07
4	Barrel h[illegible] [illegible]M 05 Nos		[illegible]		0.43	09
5	Powatrim installation [illegible]n Molding DB to reduce apparent power	01	[illegible]2000	0.63	0.75	15
6	Oven heating circuit optimization	02	13000	0.13	0.15	16
7	Idle off-Machine panel Cooling, Conveyo[illegible] AC's,Occ[illegible]					[illegible]10
8	Dehumic[illegible] loop,hea[illegible]					[illegible]10

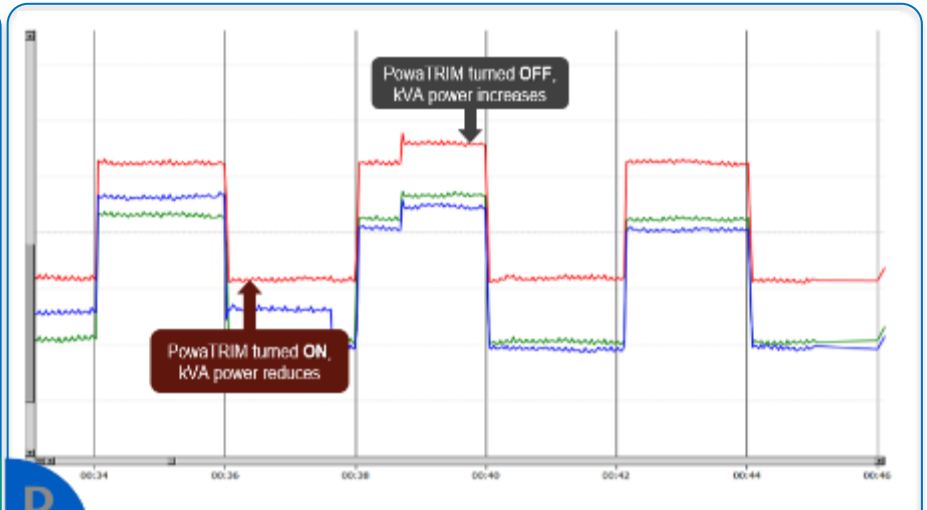
Reduction in SEC 1.00% Over last year kWh/FG

Reduction in SEC 7.00% Over 2020-21 kWh/Kg

Total Projects	kWh Saved	Annual Savings Mil INR	Investment Mil INR
66	532100	4.26	4.6

Major Project 1 – Reduction in Apparent power



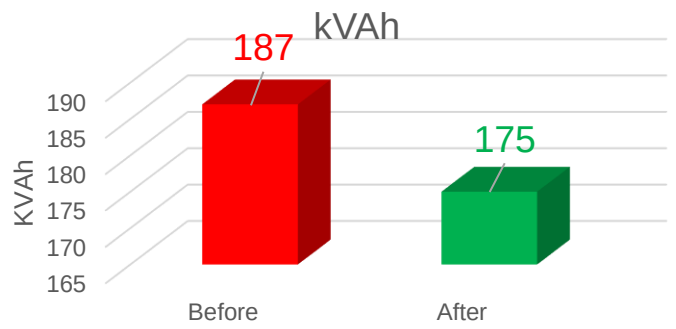


P D A C

Benefits -

1) Average 72000 kVAh /year saving
2) Improve the Power Factor
3)Protects against surge and spikes
4) Reduced harmonic current
5) Reduced kVAh, kWh and cost

Co2 emission reduction/annum- 65 Tons



Benefit-63000 INR/year
Cost-750000 INR
ROI = 15 months

Major Project 2 – Energy efficient pump and motors

Before- KDI-1000 type, 10 HP two IE1 class induction motors are working for Chiller process water circulation.

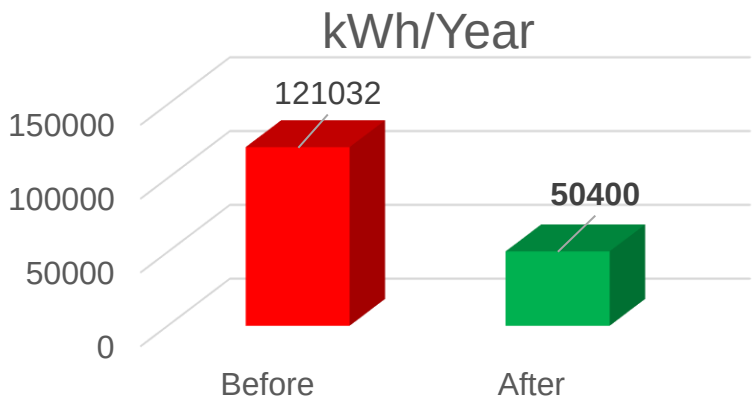
After- installed one 160M-2 type, shakti make, 10 HP IE3 Class one motor with energy efficient pump against two IE1 motors

P D A C

Horizontal Deployment have been done at 4 other locations.

Benefits –
1) After installation of Pump 41.64% energy savings achieved .
2) Average 70632 kWh/year saving

Co2 emission reduction/annum- 64 Tons



Benefit-622268 INR/year
Cost-295000 INR
ROI = 5.68 months

Major Project 3 – EC+ fan

Before- Traditional blower with induction motor was installed in Hard coat -AHU

After- high efficiency Electronically Commutated motor installed in AHU

P D A C

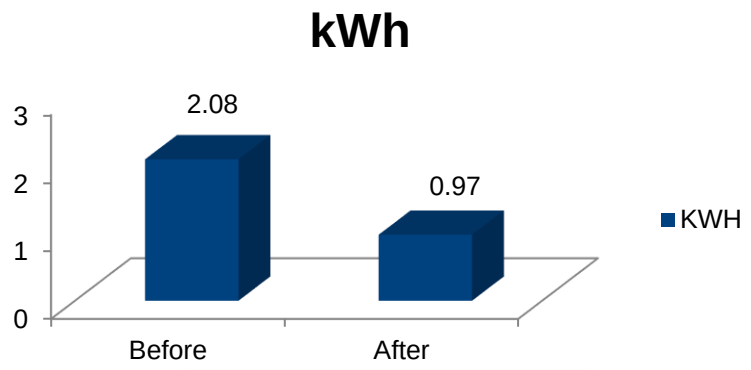
Benefits –

1) 53.37% energy savings achieved.
2) 7992 KWH/year saved.
3) Total 70405 INR/Year saved
4) Cost of failure parts is reduced
5) Increased CFM capacity.

Horizontal Deployment completed:

- Base coat AHU-02 Nos
- Hard coat UV cooling-01 Nos

Co2 emission reduction/annum- 63 Tons



Benefit- 70405 INR/year
Cost-85000 INR
ROI = 14.5 months

Innovative project 1 – Replacing cartridge heater by induction heater

Coil heaters being used to heat up the oil for vacuum generation.

After- Now We developed design for induction heater and installed 16 KW induction heater by removing 24KW triangular all heater. We save 4 kwh per hour

P D A C

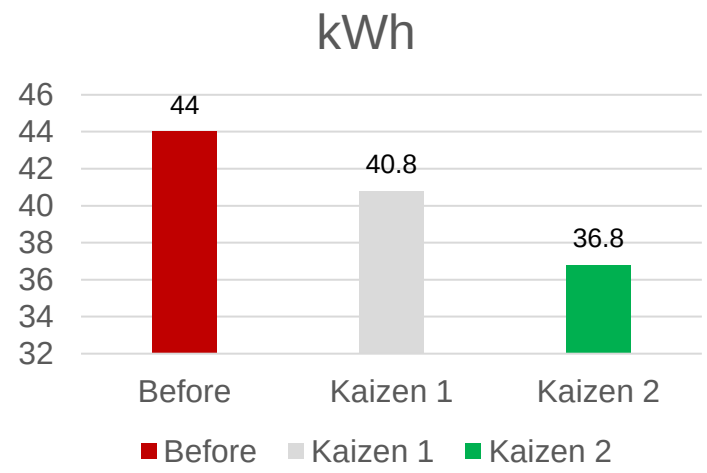
- **Kaizen :-1**
- **Cost :-55000 INR**
- **Benefit –INR 1,80,000**

- **Kaizen:-2**
- **Cost:-INR 145000**
- **Benefit:-2,80,000**

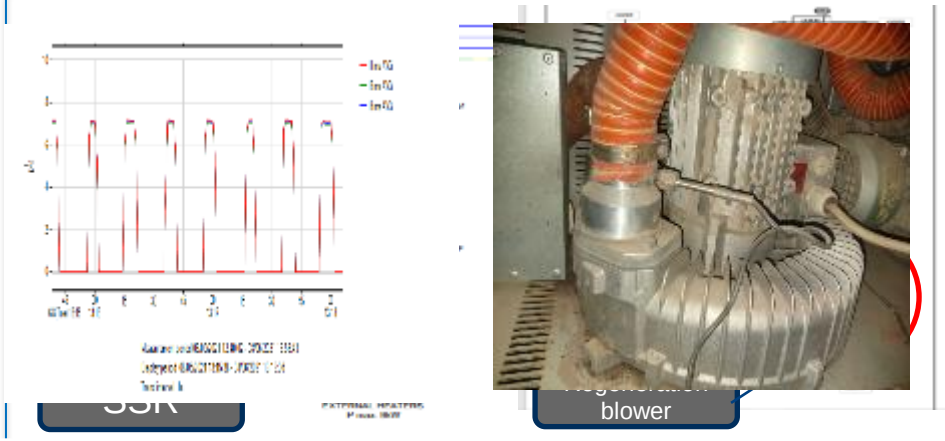
Horizontal Deployment :-

- **Tecno vacuum- completed**
- **13 mc from all MMLI units- Planned in Aug.22**

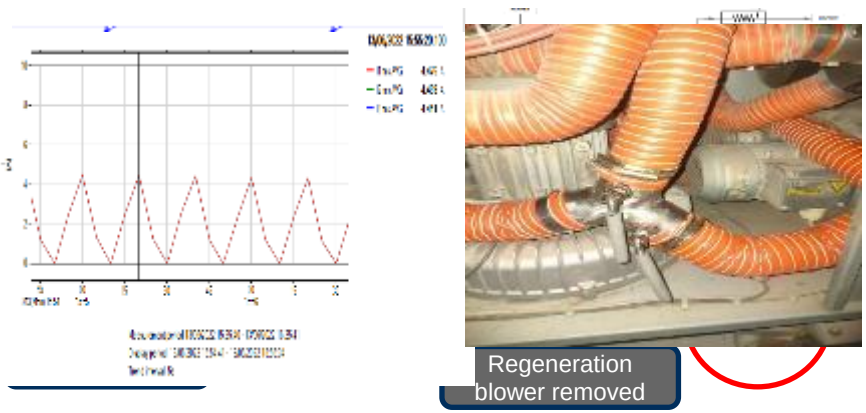
Co2 emission reduction/annum- 57 Tons



Innovative project 2 – Dehumidifier optimization



Before- Earlier 24VDC, 20 Amp three solid State relay used for Process heater given by manufactura



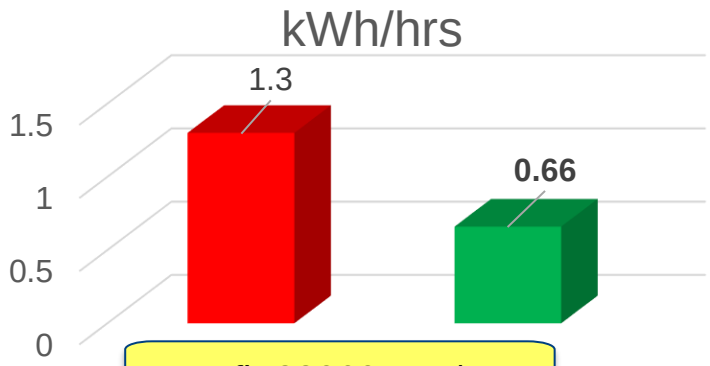
After- We have replaced SSR with SCR (silicon controlled rectifier.) 3 phase, 415VAC,15 amp, 7 kW, 0 to 10VDC control with external individual temp controller.

P D A C

Horizontal Deployment-
1) DH- 15,20,22,23,24,25,30,09,10 and 12 – Planned in Aug.22

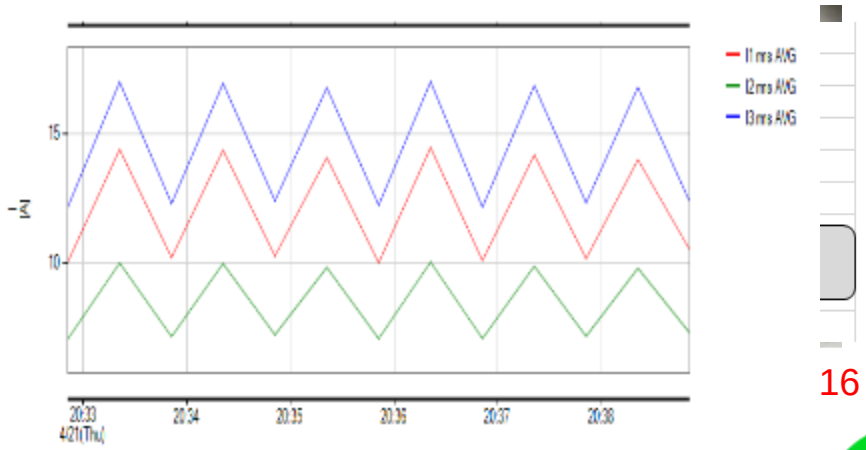
Benefits –
1) After installation of kit 50.76% energy savings achieved .
2) Average 4320 kWh/year saved for single dehumidifier.

Co2 emission reduction/annum- 04 Tons



Benefit-38060 INR/year
Cost-28700 INR
ROI = 9.05 months

Innovative project 3 – Connected load reduction of IMM



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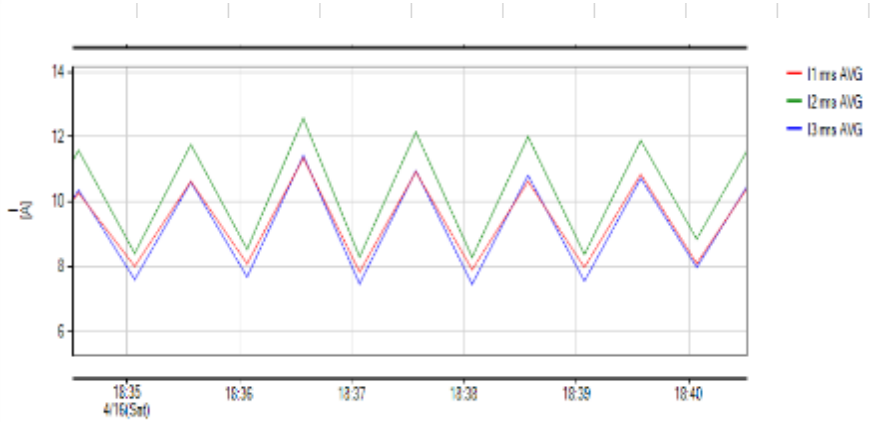
Total barrel heater capacity 53 KW



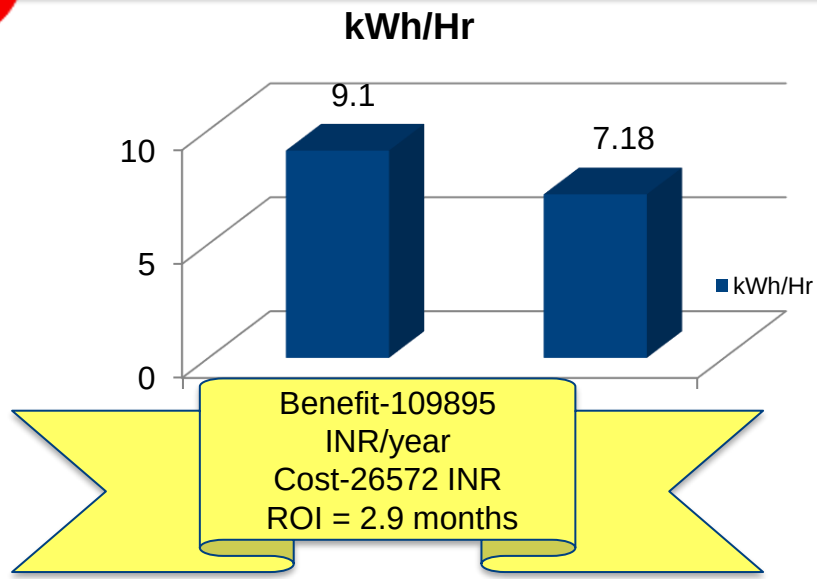
wattage capacity 4000 watt x 8 qty heater.
Total barrel heater capacity 36.9 KW

P D A C

Horizontal Deployment -
7 machines

Benefits –
1) Investment : 4.3 lacs
2) kWh savings:- 87151 / annum
3)INR savings :-7,86,679

Co2 emission reduction/annum- 87 Tons



Utilization of renewable energy source

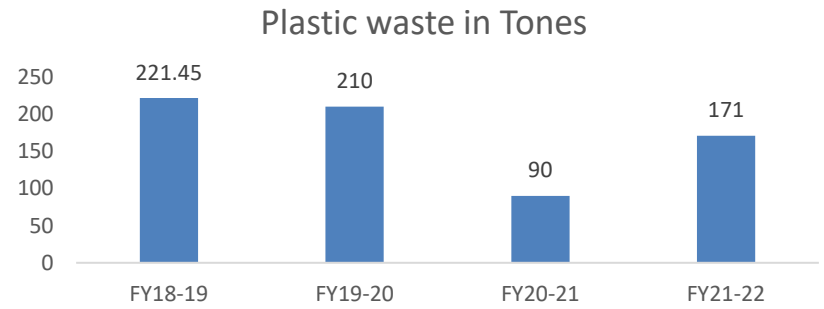
UTILIZATION OF RENEWABLE SOURCES

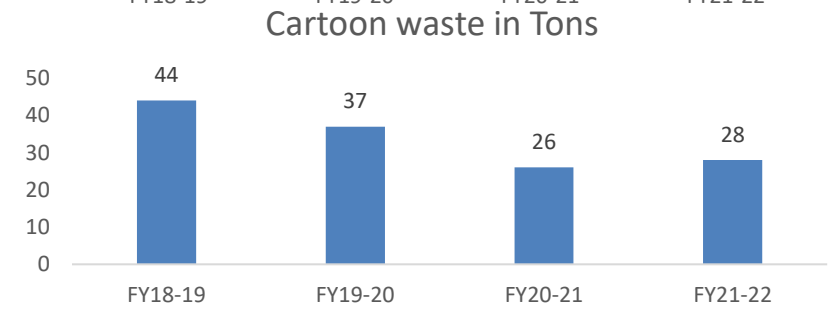
	Installed capacity Mil Kcal /annum (Thermal)	Inst. Plant capacity –Plant onsite(Electrical) kWp	Generation kWh	% of electrical energy	Onsite Inst. Capacity MMLI Group
2015-16	260	0	0	0	0
2016-17	260	608	365113	4.2	608
2017-18	260	891	756738	6.7	1490
2018-19	78.0	891	939584	9.2	1790
2019-20	0	891	1088696	12.5	2090
2020-21	0	891	1032877	15.13	2800
2021-22	**0**	**979**	**965829**	**11.04**	**3000**
Target 22-23	0	979	1357000	17.00	3088

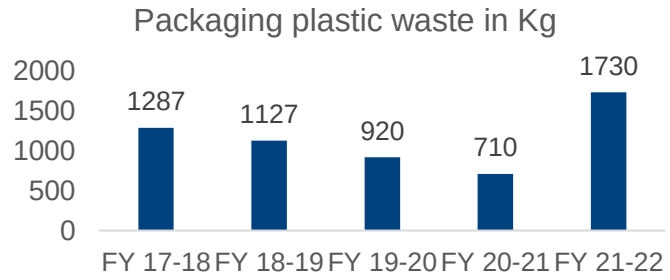
Renewable kWh	0	365113	756738	939584	1088696	1032977	965829
% of renewable	0	4.2	6.7	9.2	12.50	15.13	11.04
Tonnes of CO2 Offset	0	310	643	799	925	878	859

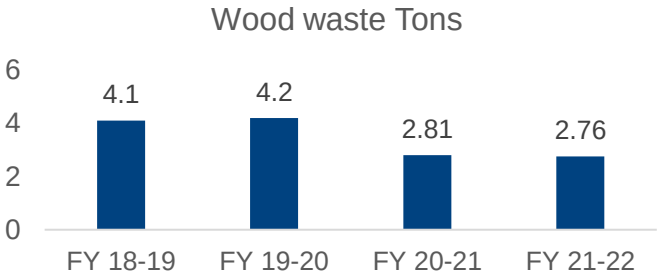
Waste utilization and management

Types of Waste	Waste generation FY 21-22	In house Projects to reduce wastes	CO2 emission offset in Tonnes
Plastic waste	171 T	1) Online gate grinders for runner reusage on 6 Machines 2) Part weight reduction by runner size reduction	660 T
Packaging plastic waste	1.73T	1) Wrapping role size reduction, wrapping elimination 2) Polybag recirculation started	4.7 T
Cartoon waste	28 T	1)To Send 100% cartoon waste to authorized re processor	9 T
Wood waste	2.76 T	1)Re circulation of Pallets 2)To send 100% wooden scrap to authorized re processor	1 T









Project 1 – Waste reuse

BEFORE:
Scrapping plastic runners, gates & rejected parts

AFTER:
Online gate grinder installed on 4 machines in FY 20-21

Benefit to Environment

Plastic waste reduced by

25920 kg/annum

CO2 emission is reduced by 156 Ton

Saving– 4.0 Mil INR /year
Investment–2.0 Mil. INR
ROI –6 Months

Project 2 – Waste elimination

Wrapping film elimination in X445 TL HSG

X445 TL HV & LV HSG wrapping with wrapping film part keep in dunnage bin. Part kept with wrapping due to scratches issue.

X445 TL HV & LV HSG without wrapping part keep in open (PP) bin. Wrap film eliminated.

P D A C

Horizontal Deployment -
27 Projects

Benefits –
1) Elimination of 16242 kg of Pack. Plastic
2) CO2 Emission reduction -32 Tons

Benefit to Environment

Plastic waste reduced by

2440 kg/annum

CO2 emission is reduced by 5 tons

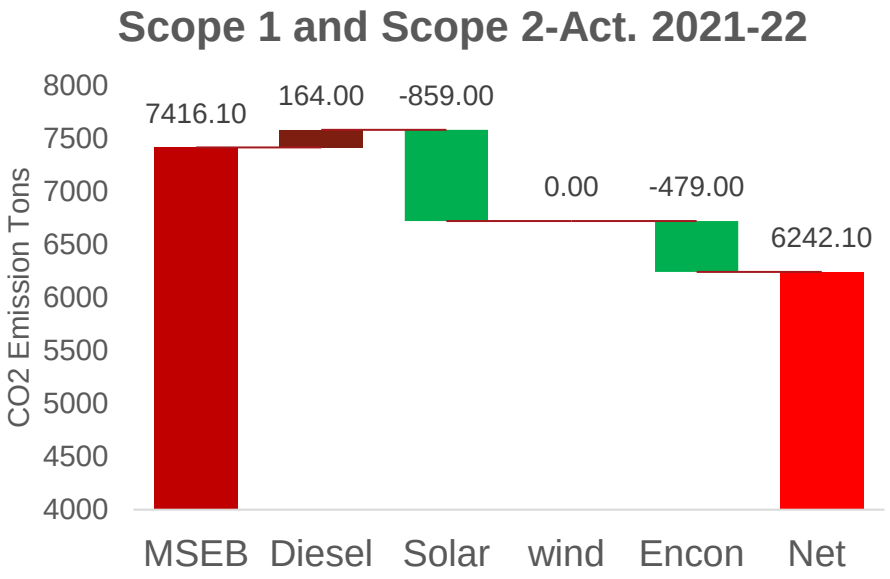
MMLI sustainability goals and targets

- **Reduce Scope 1 + Scope 2 emissions by 25% by 2023**
- **50% by 2030**
- **75% by 2035**
- **Carbon neutral (Scope 1+ Scope 2) by 2040**
- **ISO certifications :-**
  - **ISO 50001 Energy Management System - Certified in 21-22**
  - **ISO 14064 -GHG reporting- by 2022-23**
  - **ISO 14040 LCA – Life cycle assessment- by 2023-24**
  - **ISO 14067 PCF – Product Carbon Footprint - by 2024-25**
- **SAQ 4.0**
- **Water Neutral :- 2023-24**
- **Legal Compliances – 100%**

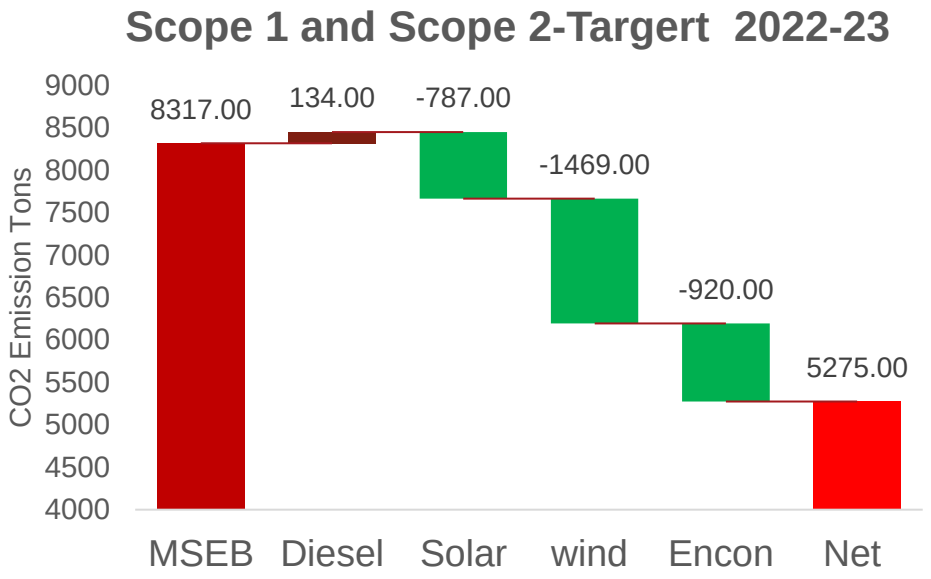
- **2021-22 targets Vs. Actual –**
  - **Reduce Scope 1 + Scope 2 emissions by 15% act. 16%**
  - **ISO 50001 certification - Done**
  - **SEC – reduction by 5 % Act. 7%**
  - **Establish Scope 3 data collection and calculation - Done**

- **2022-23 targets –**
  - **Reduce Scope 1 + Scope 2 emissions by 25% by 2023**
  - **ISO 14064 -GHG reporting- by 2022-23**
  - **SEC – reduction by 16% over 2021-22**
  - **Green Power % - 30 of total usage**

GHG inventory - Scope 1+2



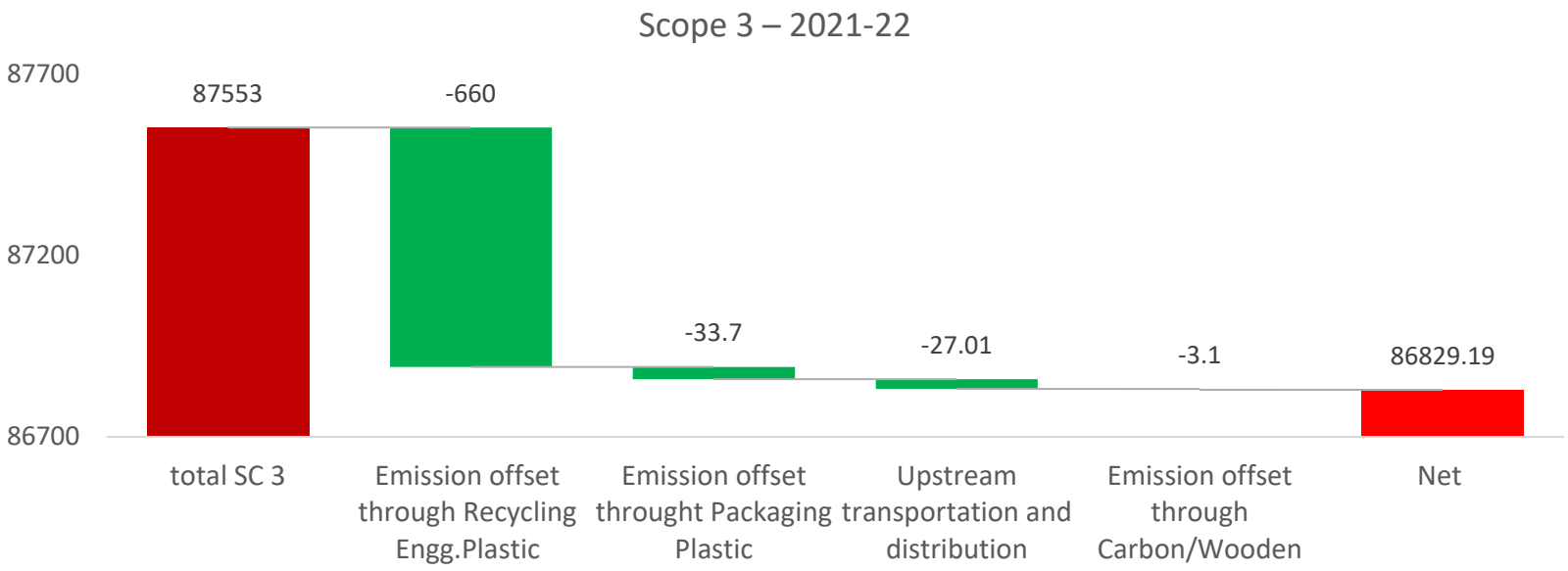
CO2 Emission offset Scope 1 & 2 :-15.83 %



CO2 Emission offset Scope 1 & 2 :-25 %

Project identified	Target	CO2 offset potential
ENCON projects	148 Nos of Projects,1.3 M. kWh	920 Tons
Green power procurement	1.6 MW wind mill power procurement with captive. 2.2 M. kWh	1469 Tons
Duel fuel system for DG	Hybrid fuel sys installation	14 Tons

GHG inventory - Scope 3



Project identified	Target	CO2 offset potential
Engineering plastic recycling	1)Gate grinder- 16 Nos of Parts 2)Runner weight-12 Nos of Project 3)100% waste to send to auth. Recycler	600Tons
Waste recycling and reuse	1)Gate grinder- 16 Nos of Parts 2)100% waste to send to auth. Recycler	50 Tons
Freight reduction	1)Packaging optimization 2)Truck utilization	150 Tons
CNG for freight vehicles	1)CNG vehicles for freight vehicles	100 Tons

Project 3 – Upstream transportation reduction

Nexon HL

Before

PPQ	20
No Of Trolley/Trip	6
Qty/Trip	120

After

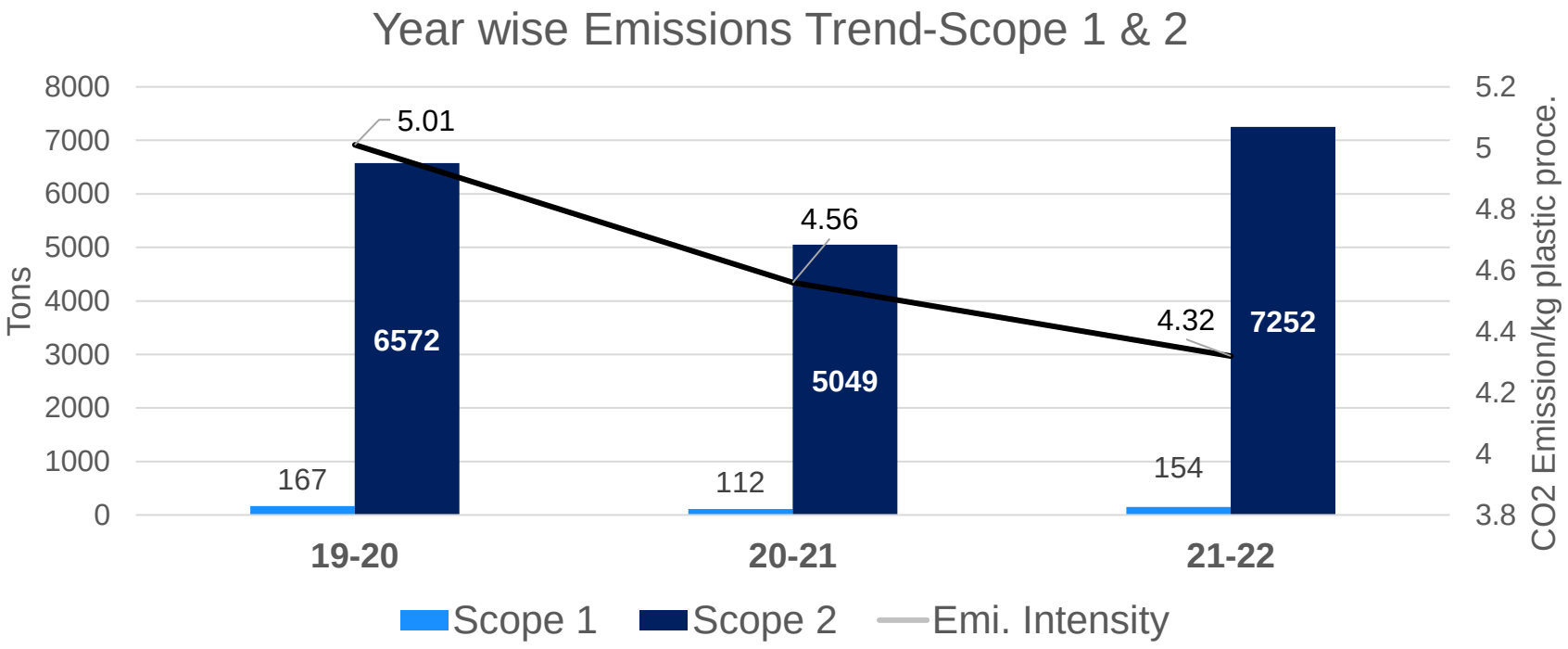
PPQ	16
No Of Unibox/Trip	16
Qty/Trip	256

Project Theme :-	Carbon Emmision offset throuth reduction no of trips by conversion from trolley to Unibox								
Conv.Factor	0.307								
CO2 Offset (0.035/trip)	0.035			Nexon HL					
Month	**Aug-21**	**Sep-21**	**Oct-21**	**Nov-21**	**Dec-21**	**Jan-22**	**Feb-22**	**Mar-22**	**Total**
Total Part Supplies	21805	17261	20943	20072	24951	28916	25184	29407	80081
No of trips (Before)	182	144	175	167	208	241	210	245	667
No of Trips (After)	85	67	82	78	97	113	98	115	313
No of Trips (Reduced)	97	76	93	89	110	128	111	130	355
CO2 Offset	3.38	2.67	3.24	3.11	3.87	4.48	3.90	4.56	20.75
				Nexon Fender TL					
Month	**Aug-21**	**Sep-21**	**Oct-21**	**Nov-21**	**Dec-21**	**Jan-22**	**Feb-22**	**Mar-22**	**Total**
Total Part Supplies				19387	25598	28596	25224	29588	19387
No of trips (Before)				67	89	99	88	103	67
No of Trips (After)				20	27	30	26	31	20
No of Trips (Reduced)				47	62	70	61	72	47
CO2 Offset	0.00	0.00	0.00	1.65	2.18	2.43	2.15	2.52	6.26

***No of trips Reduced per year-402** ***CO2 Emission offset :- 27 Ton/Annum**

Carbon footprint trend and emission intensity

- **Reporting Level – Scope 1 & 2 – reporting to Motherson Corp. and published group sustainability report for 2020-21**
- **FY 2021-22 will start plant level reporting after certification of ISO:14064**



Green Supply Policy

Responsible value chain

Responsible sourcing of materials; product subcomponents, packaging (ensuring recyclability wherever possible); inbound, inter-company and outbound logistics

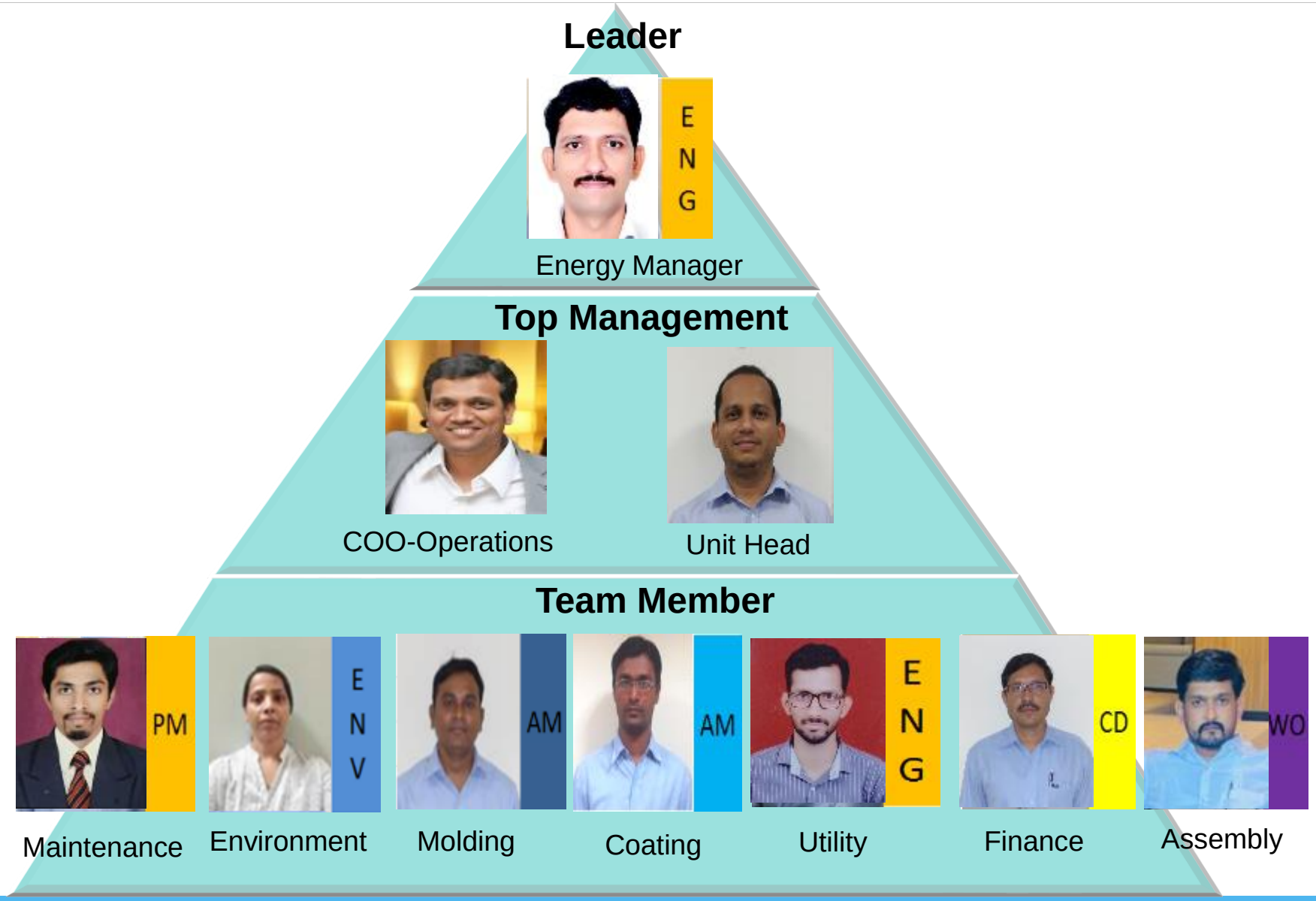
- Implement Product Carbon Footprint (PCF) processes and awareness throughout thevalue chain.
- Improve energy efficiency use and promote use of renewable energy throughout the supply chain.
- Actively support the implementation of carbon offset initiatives in the value chain.
- Target to avoid the use of conflict minerals and removal of any SOCs from our product lines and processes throughout the value chain

Green Supply Chain management

Sr.	Sustainability Parameter	2021-22	2022-23	2023-24	2024-25	2025-26
1	Adhere to Motherson Supplier Code of Conduct	O	Act.- 94%			
2	Supplier coverage with SAQ 4.0					
	Direct material	100%	Act.- 87%			
	Indirect material		100%			
	Capital equipment provider			100%		
	Service provider				100%	
3	SAQ 4.0 Score - Direct material suppliers	50%	Act.- 62%	%	80%	90%
4	ISO certifications - Direct material suppliers					
	ISO 14001	O	Act.- 60%			
	ISO 18001		O			
	ISO 50001			O		
5	Establish Scope 1 and 2 emissions data - Direct material suppliers	O	Act.- 35%			
6	Green energy - Direct material suppliers		>10%		>30%	
7	Water neutral - Direct material suppliers				O	
8	Carbon neutrality (Scope 1+2) - Direct material suppliers					

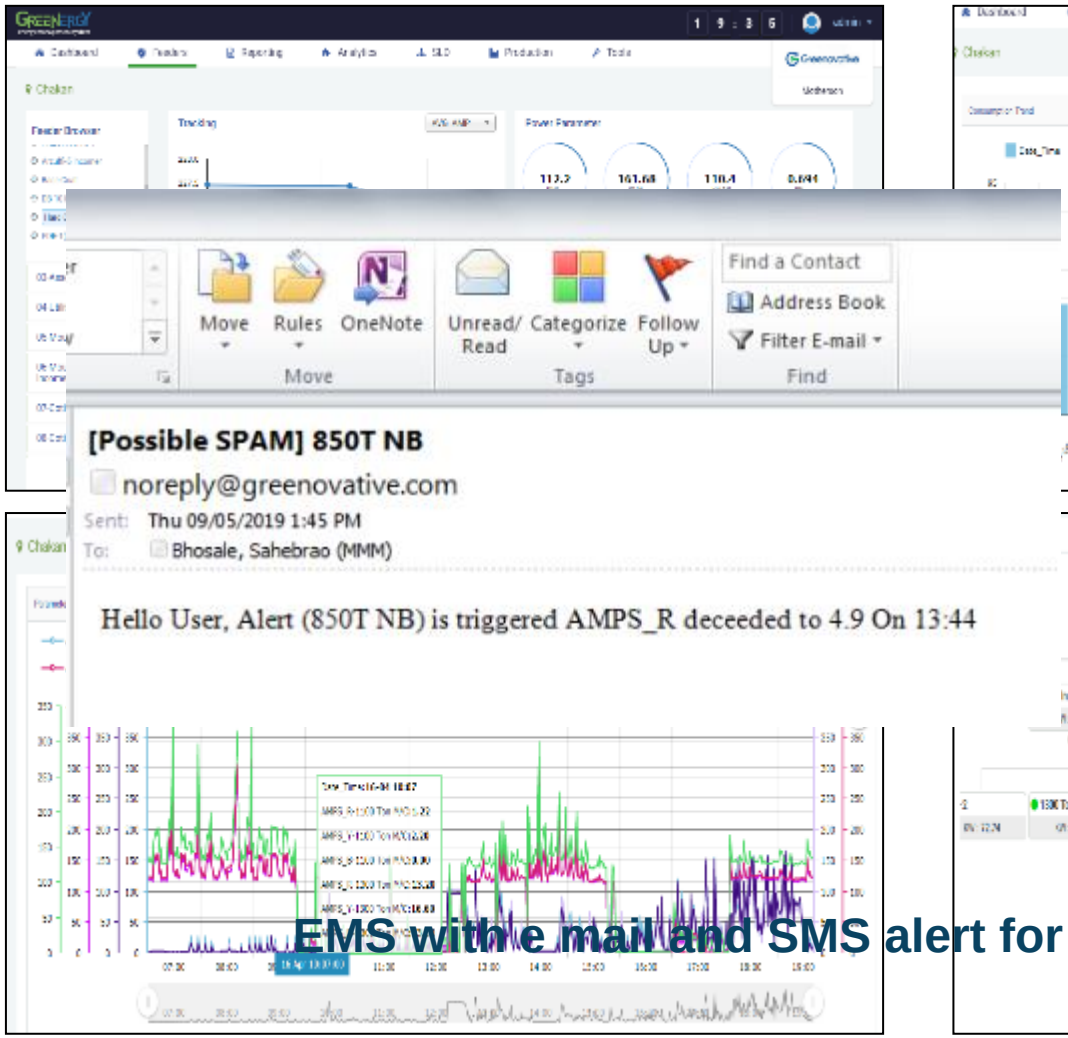
O-Plan

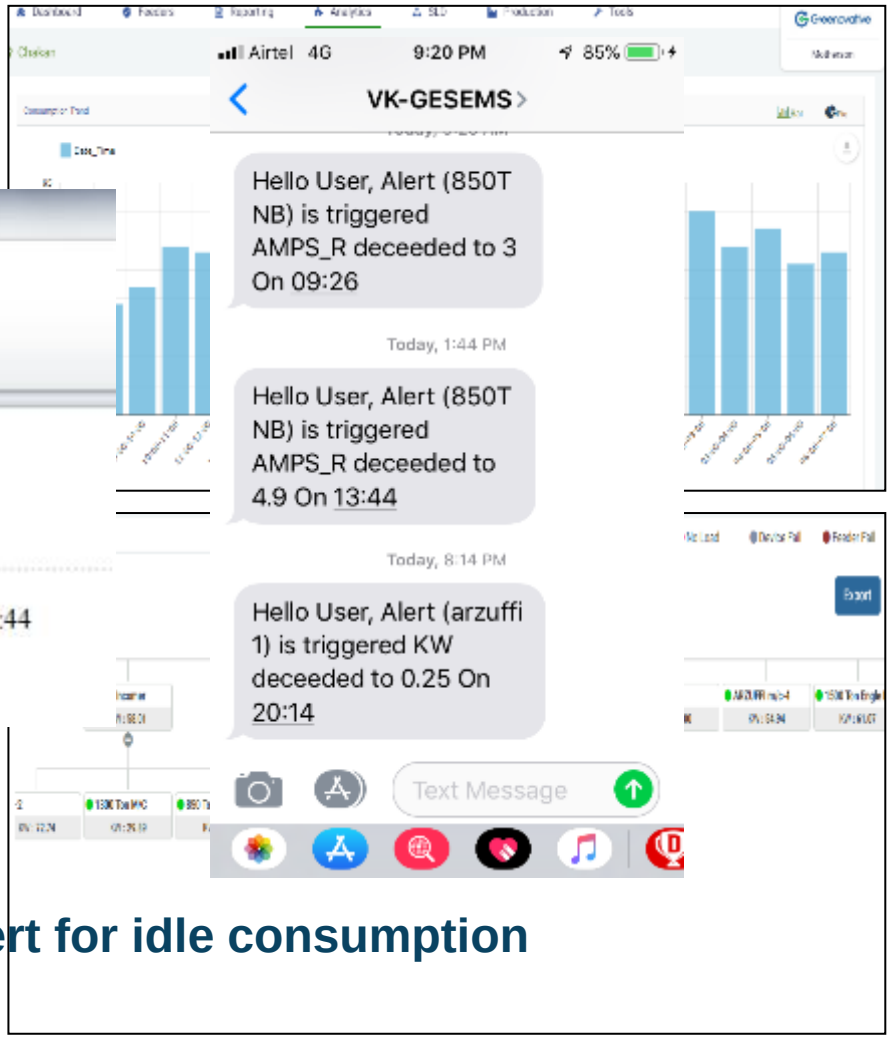
Energy efficiency and sustainability team



Teamwork, Employee involvement and monitoring

Installation of Electric energy Measurement instruments:

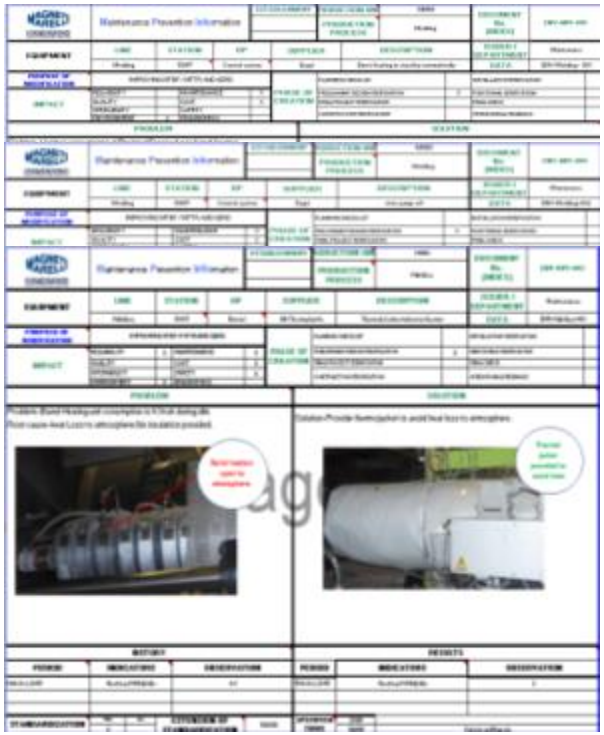




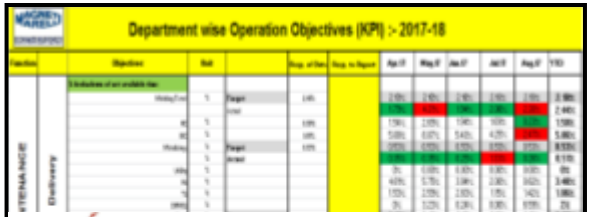
EMS with e mail and SMS alert for idle consumption

Teamwork, Employee involvement and monitoring

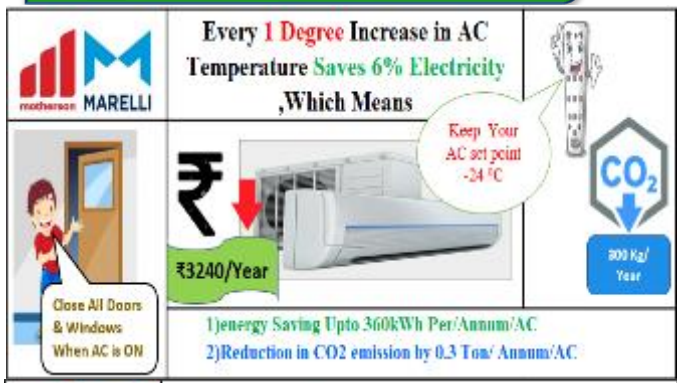
Energy saving practices standardization



Communication & Review

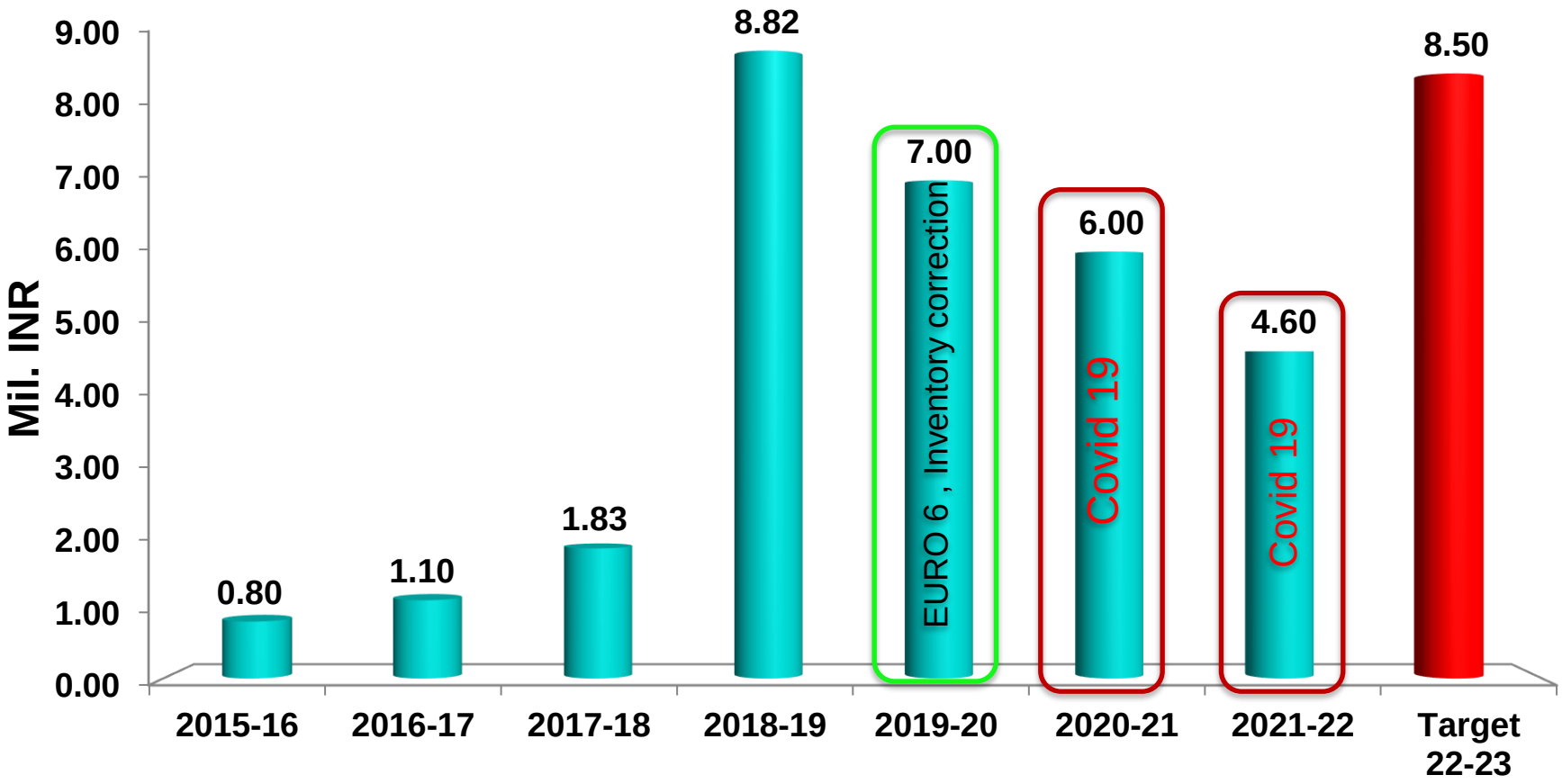


Visuals



Teamwork, Employee involvement and monitoring

Year wise Investments for Energy Conservation



Teamwork, Employee involvement and monitoring

Sr no.	Project Descrption	Annual kWh Saving	Annual saving IN INR	Investment in INR	Resposiblity	Project submit Date
1	To reduce energy consumption by replacing 36 W tub rod with 12W LED light to inspection table	604.8	5328.288	750	Vinayak Padwal	12/03/2022
2	To reduce energy consumption by idle off heating of TL5 vibartion welding mc	1368	12052.08	2500	Sagar Kumbhar	14/02/2022
3	900T-I conveyor anstatic blower idle off by providing timer	410	3612.1	800	Yuvraj	10/02/2022
4	To provided flow control valve to reduced air consumption	170	1497.7	450	Ravikant Ravi	14/01/2022
5	Electric Panel AC and cooling fan to be Idle OFF of engel 1	368.40	3245.604	1500	Kishor Kondane	28/02/2022
6	Electric Panel AC and cooling fan to be Idle OFF of Engel 1	378.00	3330.18	1500	Nitin Chaudhari	28/02/2022
7	Electric Panel AC and cooling fan to be Idle OFF Engel 2	379.00	3338.99	1500	Jadunath das	28/02/2022
8	Electric Panel AC and cooling fan to be Idle OFF 1050 T	387.00	3409.47	1500	Shyam K	28/02/2022
9	Reduced MTC idle Loss by providing Timer	672.00	5920.32	5000	Rohan Jadhav	31/03/2022
10	Electric Panel Cooling fan to be Idle OFF 550T-		.13	200	yuvraj	03/03/2022
11	To reduce Idle consumption off 1300T belt conveyor			800	Sidhhartha	30/03/2022
12	Subzero Quality room AC 2			1500	Sachin	01/03/2022
13	Subzero controller to Account room AC 1			1500	Nitin	01/03/2022
14	Motion sensor to lakshy room		98.95	1000	Prashant /padwal	01/03/2022
15	Subzero Quality room AC 1		.35	1500	Remeswar	01/03/2022
16	Electric Panel AC and cooling fan to be Idle OFF of 910T	177.00	155.37	100	Shyamk	25/01/2022
17	Electric Panel AC and cooling fan to be Idle OFF of 1300T	192.00	1691.52	100	Kishor Kondane	22/02/2022
18	Energy consumption to be reduced of Arzuffi 5 cabin AC by pividing b	1200.00	10572	500	Kishor/shyam	01/05/2021
19	Sub zero controller to be installed to PE dept Split AC 1	480.00	4228.8	1500	Rameswar/ Padwal	02/05/2021
20	Sub zero controller to be installed to Quality room Split AC 3	480.00	4228.8	1500	Rameswar/ Padwal	02/05/2021
21	Sub zero controller to be installed to Quality room Split AC 2	480.00	4228.8	1500	Padwal	02/05/2021
22	Sub zero controller to be installed to Finance room Split AC 1	480.00	4228.8	1500	Padwal	02/05/2021
23	Sub zero controller to be installed to Finance room Split AC 3	480.00	4228.8	1500	Rameswar/ Padwal	02/09/2021
24	Sub zero controller to be installed to Finance room Split AC 2	480.00	4228.8	1500	Rameswar/ Padwal	02/09/2021
25	Sub zero controller to be installed to PE dept Split AC 2	480.00	4228.8	1500	Bhagwat k	02/09/2021
26	Motion sensor to Auditor room	45.60	401.736	1000	Rameshwar/Padwal	05/06/2021
27	Motion sensor to Disha room light	45.60	401.736	1000	Rameshwar/Padwal	05/06/2021
28	Motion sensor to board room	1684.00	14836.04	2200	Rameshwar/Padwal	01/06/2021
29	To reduce idle loss of RO Feed and inlet pump by providing Float Lev	1155.00	10175.55	1950	Rameshwar	03/06/2021

46 Ideas
29 Projects

No / Year

220

-30

ISO certifications

DNV

MANAGEMENT SYSTEM CERTIFICATE

This is to certify that the management system of
Marelli Motherson Automotive Lighting India Private Limited
Gat No. 146-150, Village Ambethan, Tal. Khed, Pune - 410501, Maharashtra, India

has been found to conform to the Energy Management System standard:
ISO 50001:2018

This certificate is valid for the following scope:
Manufacture of automotive lighting lamps (head lamps, rear lamps, centre high mount stop lamps and all other external lamps)

Sales turnover v/s Encon Investment %			
Year	Sales Turnover M.Inr	Encon Investment M. Inr	% of Encon investment
2016-17	1508	0.9	0.06%
2017-18	2518	1.84	0.07%
2018-19	2993	7.83	0.26%
2019-20	3360	7.0	0.21%
2020-21	1929	6.0	0.31%
2021-22	3722	4.6	0.13%

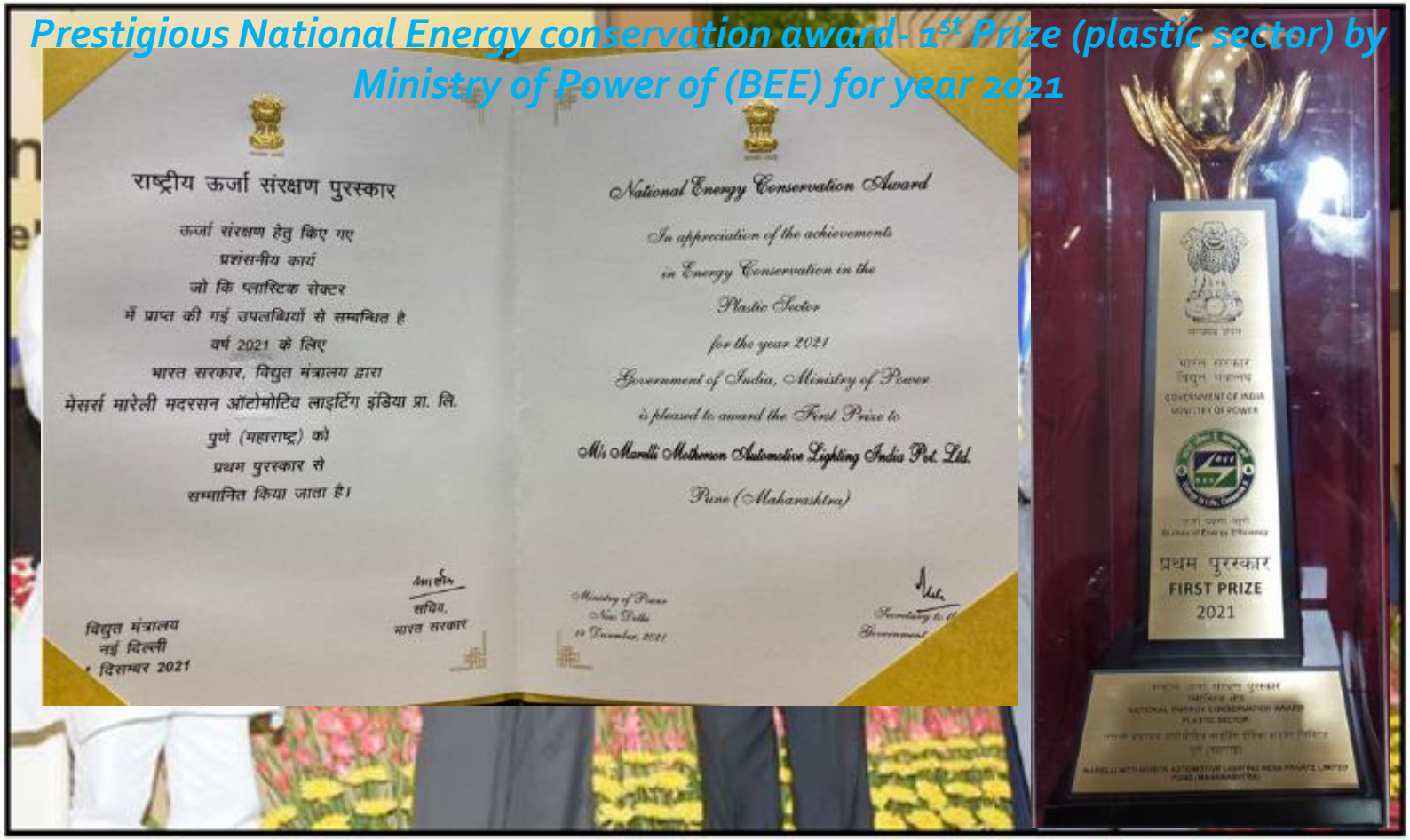
*Green energy budget is separate from Energy Conservation

- MMLI Pune Plant certified with ISO 50001:2018
- MMLI planned to implement ISO 14064 - in FY 2022-23

Learnings from CII

- Power analyser and micro level measurement of consumption
- Internal and External Benchmark
- Training on GHG by CII

Prestigious National Energy conservation award- 1st Prize (plastic sector) by Ministry of Power of (BEE) for year 2021



Presenter's Contact details
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Sahebrao Bhosale- sahebraobhosale@marelli.motherson.com