



## **SANSERA ENGINEERING LIMITED**

**S.Inbaraj – AGM – Maintenance & EnMS Corp.**

**P. Jaishankar – Manager – Plant-2 Maintenance.**

**Abhishek Kulkarni – Asst Manager – Plant-3 Maintenance.**

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# 1. Brief introduction on Company/Unit.



Since : 1987

### Business Area

- Machining & Assy. of Core Engine & Transmission Components including "2Cs" namely Connecting Rod & Crank Shaft Assy.

### Certifications

- IATF 16949:2016
- TUV Nord
- ISO 14001:2015 (EMS)
- ISO 50001:2018 (EnMS)
- ISO 45001:2018 (OH&S)
- AS 9100D-For Aerospace

### Uniqueness

- Design & Manufacturing of CNC SPMs
- In house capabilities
  - Forging & Heat Treatment
  - CAE
  - FEA Simulation
  - Automation

### Plant & Workforce

- Total 14 Manufacturing plants in India and 1 plant in Sweden having total work force about 6300.

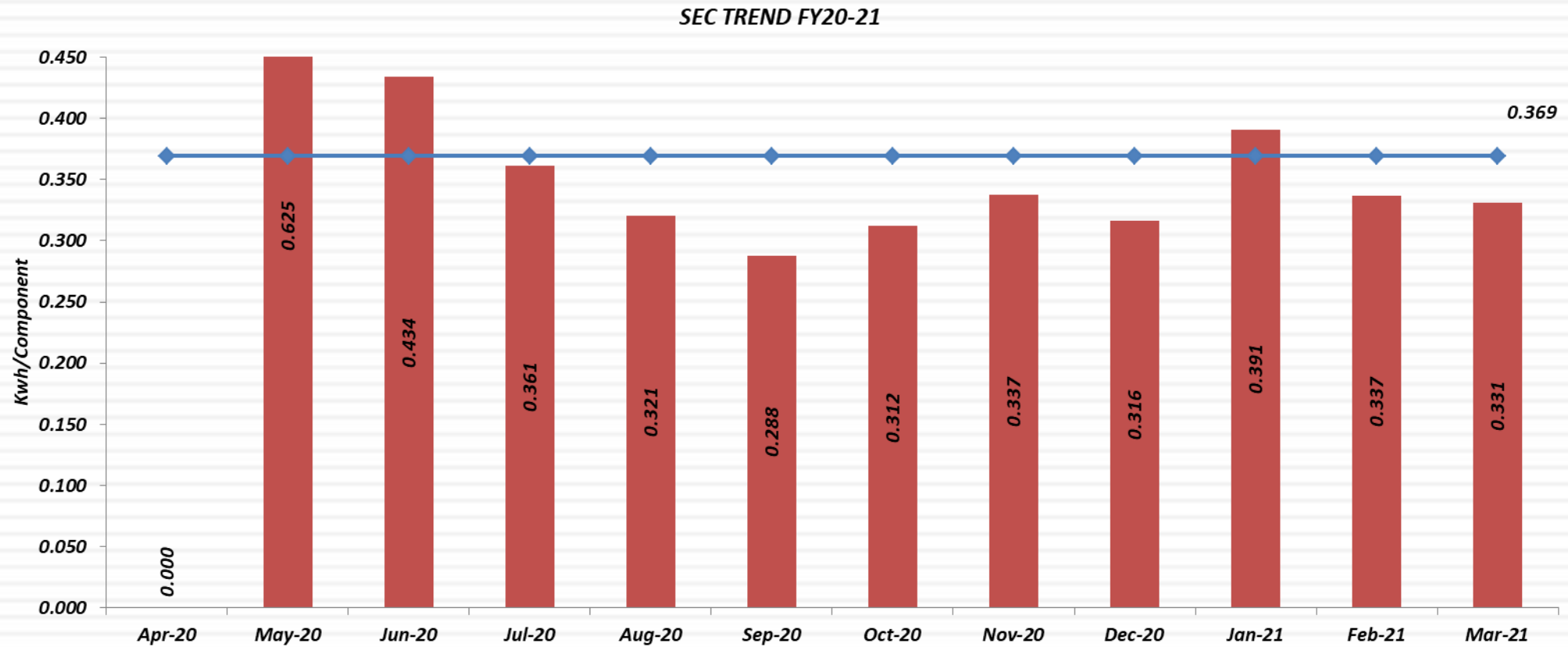
**Won Most Innovative Project and Most Useful Project Award at CII Environment Best Energy Efficient case study in 2018.**  
**Won Excellent Energy Efficient Unit and Adopting Best environmental Practices at Honda – HMSI Supplier Best Environmental Practices Award in 2019.**

**Sansera Engineering limited has successfully achieved the standards required for the IGBC certification and won the Platinum Award in 2020 for Green Factory Building.**



## 2. Impact of COVID 19

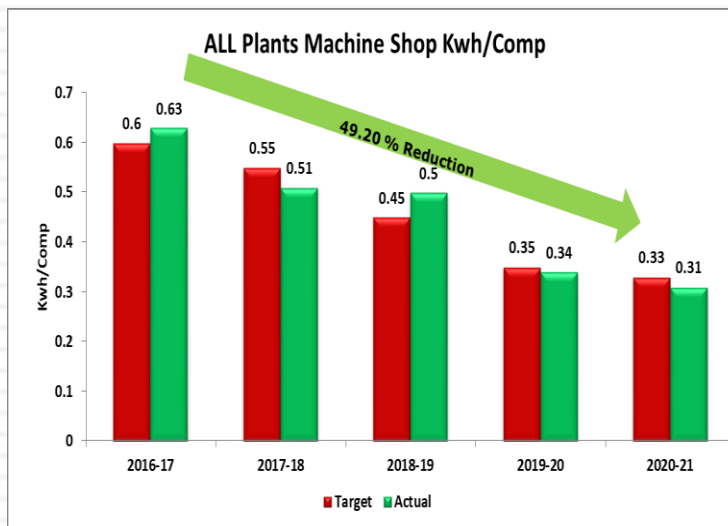
Specific Energy Usage Increased by 60% in May & 17 % in June.



# 3. SPECIFIC ENERGY CONSUMPTION IN LAST 4 YEARS ( 2017-21 ).

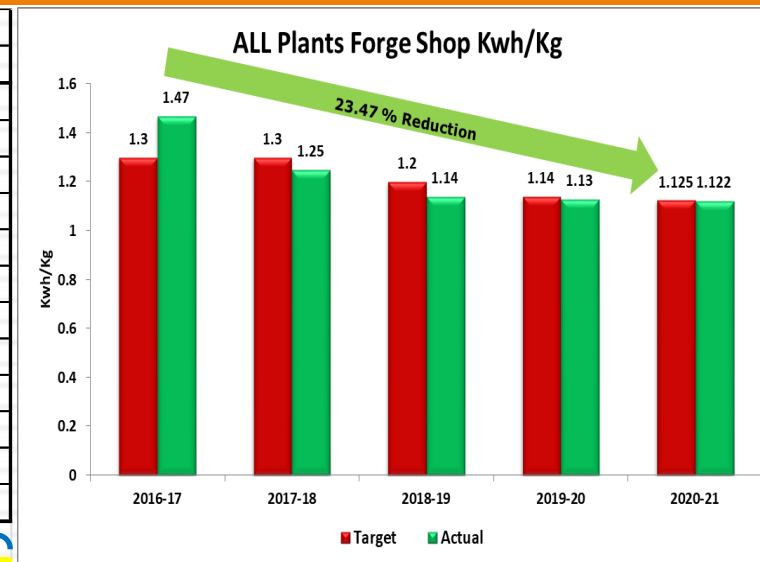
PLANT	M/c Shop FY19-20	
	Kwh	Prod Qty
P-1	3,57,370	35,07,118
P-2	70,28,936	1,82,76,344
P-3	39,18,674	95,20,653
P-4	42,69,090	1,07,51,859
P-5	33,44,433	66,83,135
P-6	71,83,100	1,82,32,563
P-7	33,67,647	44,58,650
P-11	39,26,107	18,84,223
P-12	-	-
P-14	7,25,432	2,75,28,538
FTF	-	-
	<b>3,41,20,789</b>	<b>10,08,43,083</b>

**0.34**

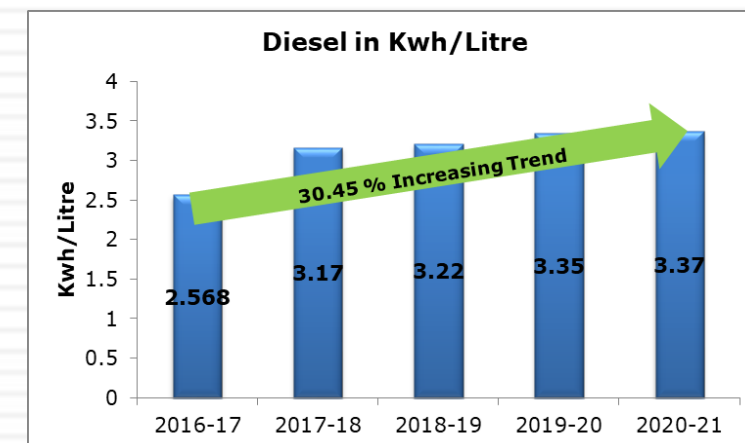


PLANT	Forge Shop FY19-20	
	Kwh	Kg
P-1	-	-
P-2	-	-
P-3	-	-
P-4	-	-
P-5	67,42,094	49,63,759
P-6	89,96,573	77,72,754
P-7	24,42,423	14,26,599
P-11	-	-
P-12	1,67,26,471	1,51,69,451
P-14	-	-
FTF	1,15,37,471	1,18,10,997
	<b>4,64,45,032</b>	<b>4,11,43,560</b>

**1.13**



	2017-18	2018-19	2019-20	2020-21
<b>Machine Shop</b>	<b>0.51</b>	<b>0.5</b>	<b>0.34</b>	<b>0.31</b>
<b>Forge Shop</b>	<b>1.26</b>	<b>1.14</b>	<b>1.13</b>	<b>1.122</b>
<b>Aerospace</b>	<b>15.58</b>	<b>11.58</b>	<b>15.31</b>	<b>14.39</b>



*Understand the Best Practices in other factories and strive to a National Bench Mark.*



### 3. SPECIFIC ENERGY CONSUMPTION IN LAST 4 YEARS ( 2017-21 ).

Production Factor = Current Year Production (2020-21) / Reference Year Production (2019-20).

$$= 18,687,909 / 18,276,344$$
$$= 1.023$$

Reference year equivalent = Reference year energy use(Kwh) X Production factor.

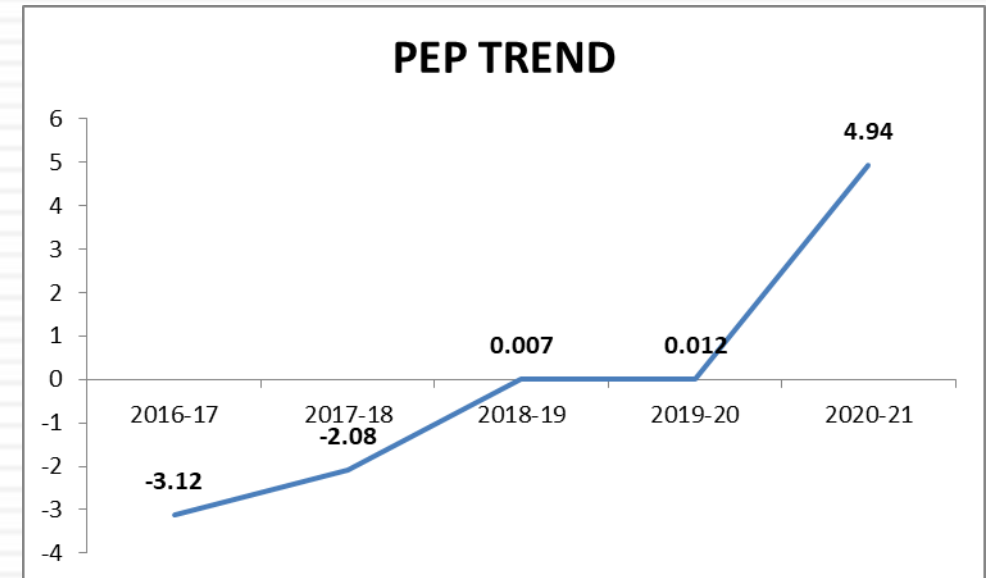
$$= 6,658,956 \times 1.023$$
$$= 6,808,909.$$

PEP =  $\frac{(\text{Ref year equivalent} - \text{Current year Energy use})}{\text{Reference year equivalent}} \times 100$

$$= \frac{(6,808,909 - 6,471,995)}{6,808,909} \times 100$$
$$= \underline{4.94}$$

## PEP – PLANT ENERGY PERFORMANCE

Sample Calculation Explained  
– Data's from Plant-2

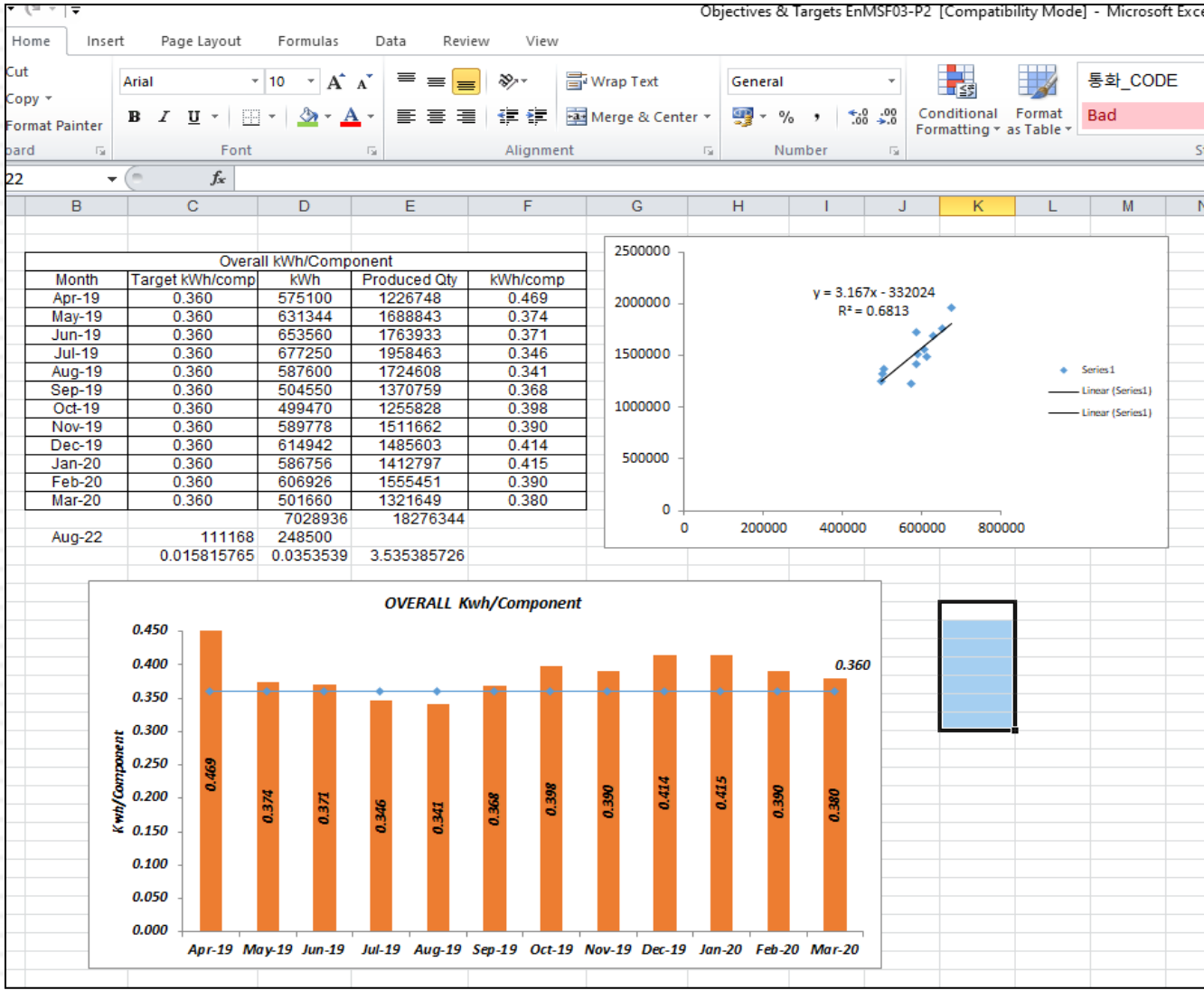


# 3. SPECIFIC ENERGY CONSUMPTION IN LAST 4 YEARS ( 2017-21 ).

Main Obj	Source of Energy	Sub obj L-1	Sub obj L-2	Objective	UOM	2018-19		Target for year 2019-20	Target for the Q1	Current year Status																Overall 2019-20	Energy Management Action Plan	EnMS/F/03 Target Date			
						Target	Actual			Apr	May	Jun	Overall Q1	Target for Q2	Jul	Aug	Sep	Overall Q2	Target for Q3	Oct	Nov	Dec	Overall Q3	Target for Q4	Jan				Feb	March	Overall Q4
1	Electricity			Reducing ( overall) Electricity	KWH/Number	0.361	0.379	0.360	0.360	0.469	0.374	0.371	0.404	0.360	0.346	0.341	0.368	0.352	0.360	0.398	0.390	0.414	0.401	0.360	0.415	0.390	0.380	0.395	0.388	Makino Machines are added recently and machine shifting activity is going on.	By July End.
2	Diesel			Increasing DG Efficiency (overall)	KWH/Ltr	3.20	3.425	3.200	3.200	3.32	3.103	2.846	3.091	3.200	3.217	3.335	3.153	3.235	3.200	3.108	3.536	3.384	3.346	3.200	3.210	3.310	3.300	3.273	3.236	EMAP 2018-19.xlsx	
		2A		Increasing DG Efficiency - DG-201	KWH/Ltr	3.20	3.204	3.200	3.200	2.828	2.806	2.625	2.753	3.200	3.282	3.105	2.946	3.111	3.200	2.315	3.229	3.292	2.946	3.200	3.210	3.310	3.210	3.243	3.013		
		2B		Increasing DG Efficiency - DG-202	KWH/Ltr	3.20	3.571	3.200	3.200	3.32	3.39	3.181	3.296	3.200	3.600	3.000	2.710	3.103	3.200	3.084	3.229	3.481	3.265	3.200	3.210	3.310	3.210	3.243	3.227		
		2C		Increasing DG Efficiency - DG-204	KWH/Ltr	3.20	3.261	3.200	3.200	1.631	2.265	1.399	1.765	3.200	2.354	2.599	2.061	2.338	3.200	2.876	2.604	3.199	2.893	3.200	3.210	3.310	3.210	3.243	2.560		
		2D		Increasing DG Efficiency - DG-207	KWH/Ltr	3.20	3.513	3.200	3.200	4.38	3.47	3.34	3.726	3.200	3.275	3.741	3.556	3.524	3.200	3.587	4.318	3.628	3.844	3.200	3.210	3.310	3.210	3.243	3.584		
		2E		Increasing DG Efficiency - DG-206	KWH/Ltr	3.20	3.452	3.200	3.200	3.28	3.169	3.108	3.186	3.200	3.511	3.212	3.142	3.288	3.200	3.149	3.305	3.109	3.188	3.200	3.210	3.310	3.210	3.243	3.226		
				Compressor (Overall) - KWH/Component	KWH/Component	0.044	0.049	0.044	0.044	0.070	0.056	0.053	0.060	0.044	0.050	0.054	0.063	0.056	0.044	0.064	0.061	0.065	0.063	0.044	0.067	0.061	0.061	0.063	0.060		
3				Reducing Electricity at Connecting rod (KWH/Number)	KWH/Number	0.111	0.104	0.102	0.102	0.107	0.098	0.094	0.100	0.102	0.094	0.099	0.099	0.097	0.102	0.102	0.098	0.100	0.100	0.100	0.110	0.094	0.096	0.100	0.099		
4				Reducing Electricity at Heat treatment process	KWH/KG	1.17	1.052	1.115	1.115	1.108	1.074	1.072	1.085	1.115	1.058	1.020	0.979	1.019	1.115	1.028	1.020	1.080	1.043	1.11	0.820	1.050	0.760	0.877	1.006		
		1AA		Reducing Electricity at SQF-201 process	KWH/KG	1.05	1.172	1.114	1.114	1.032	1.010	1.125	1.056	1.114	1.171	1.199	0.000	1.185	1.114	1.132	1.190	1.240	1.187	1.11	1.060	1.140	1.040	1.080	1.127		
		1AB		Reducing Electricity at SQF-202 process	KWH/KG	1.07	1.148	1.125	1.125	1.230	1.067	1.312	1.203	1.125	1.061	0.000	0.000	0.000	1.125	0.000	1.330	1.180	0.837	1.12	1.160	1.170	0.960	1.097	1.045		
		1AC		Reducing Electricity at SQF-203 process	KWH/KG	1.11	1.165	1.142	1.142	1.055	1.239	1.129	1.141	1.142	1.119	1.067	0.969	1.052	1.142	1.119	1.250	1.230	1.200	1.14	1.010	1.220	0.960	1.063	1.114		
		1AD		Reducing Electricity at SQF-204 process	KWH/KG	0.79	0.861	0.861	0.861	0.926	0.954	0.744	0.875	0.861	0.708	0.716	0.767	0.730	0.861	0.784	0.740	0.830	0.785	0.86	0.870	0.680	0.920	0.823	0.803		
		1AE		Reducing Electricity at SQF-207 process	KWH/KG	1.00	0.903	0.903	0.903	1.130	1.115	1.197	1.147	0.903	1.294	1.241	1.366	1.301	0.903	1.289	0.720	0.650	0.886	0.90	1.200	1.370	1.240	1.270	1.151		
		1AF		Reducing Electricity at GCF -PIT-201 process	KWH/KG	0.00	0.569	0.500	0.500	#DIV/0!	#DIV/0!	0.799	#DIV/0!	0.500	0.829	0.874	#DIV/0!	#DIV/0!	0.500	#DIV/0!	0.680	0.640	#DIV/0!	0.50	NA	0.850	NA	0.850	#DIV/0!		
5				Reduction og LPG consumption	Product KG/LPG KG	0.07	0.068	0.074	0.074	0.176	0.150	0.190	0.172	0.074	0.114	0.148	0.154	0.139	0.074	0.166	0.070	0.060	0.099	0.07	0.165	0.149	0.127	0.147	0.139		



# 3. SPECIFIC ENERGY CONSUMPTION IN LAST 4 YEARS ( 2017-21 ).



Energy Management Action Plan		SANSEERA ideas@work		
EMAP Reference		EMAP Number	Date	
Related SEU (as applicable)		PL2/EMAP18-19/01	22.03.2019	
Action plan		Electricity - Facility		
Objective		To reduce power consumption in compressed air leakages in machines & Fixtures		
Target		By Providing Shutoff Valve and linked with Energy saver Option.		
Action origin		To reduce overall annual energy consumption by at least 28,000 kWh/pa		
Reason for action		<input checked="" type="checkbox"/> Opportunities Register, <input checked="" type="checkbox"/> Staff Suggestion <input type="checkbox"/> Other If Other; describe:		
Estimated energy saving		More Leakages cause Compressor Loading hours More automatically power consumption will be more.		
Estimated cost		28,000 Kwh/pa		
Summary of tasks		₹ 2.0 Lakh/-		
Stage 1		Description of tasks		
Stage 2		Getting Plant head approval		
Stage 3		Preparation of Bill of Material		
Stage 4		Raising PR / PO		
Stage 5		Procurement of Material		
Stage 6		Shut down plan		
Stage 7		Execution of work		
Stage 8		Monitoring of kWh Month on Month		
Actual energy saving		Calculate the annual savings achieved at the end of financial year		
EnPI		kWh/No & Kwh/Kg		
Energy baseline		EnB 2017-18		
Energy target		To reduce overall annual energy consumption by at least 28,000 kWh / PA		
Method of verifying the results		Monitoring the Compressor Kwh on Daily basis.		
Method for improving energy performance		EnPI, Month on Month kWh/Comp		
Comments		Completed		
Task	Time scale	Responsibility	Date stage completed	Output (reference)
Stage 1	20.04.2018	S.Inbaraj	15.04.2018	Getting Plant head approval
Stage 2	22.04.2018	Jaishankar	25.04.2018	Preparation of Bill of Material
Stage 3	25.04.2018	Jaishankar	25.04.2018	Raising PR / PO
Stage 4	26.07.2018	Jaishankar	15.08.2018	Procurement of Material
Stage 5	30.07.2018	Jaishankar	31.08.2018	Shut down plan
Stage 6	30.07.2018 ~ 16.01.2019	Jaishankar	03.09.2018 ~ 17.02.2019	Execution of work
Stage 7	15.08.2018	Jaishankar	22.10.2018	Monitoring of kWh Month on Month for air compressor
Stage 8	15.02.2019	Jaishankar	28.03.2019	Calculate the annual savings achieved at the end of financial year
Prepare By : Jaishankar			Approved By : S.Inbaraj	





# 3. SPECIFIC ENERGY CONSUMPTION IN LAST 4 YEARS ( 2017-21 ).



**Compressor heat recovery used for Component Washing Machine**



**VFD for major load**



**Energy Efficient Power Pack**



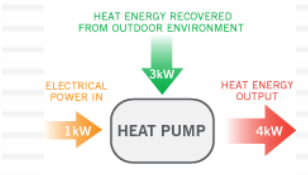
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**Online Monitoring**



DESCRIPTION	P-2	P-3	P-4	P-5	P-6	P-7	P-9	P-11	P-12	FTF	OVERALL
HEAT PUMP	√ - 1M/c Completed.	X – NA.	√ - Completed ( 2 M/c ).	√ - Under Progress ( 1 M/c ).	X – NA.	√ - 1M/c Completed. 2M/c Under Progress.	X – NA.	√ - 2 M/c Completed. 1M/c UnderProgress.	X – NA.	X – NA.	
WHR	√ - Completed ( 2 M/c ).	√ - Under Progress ( 2 M/c ).	√ - Under Progress ( 1 M/c ).	X – NA.	X – NA.	√ - Under Progress ( 2 M/c ).	X – NA.	X – NA.	X – NA.	X – NA.	
LPG TO PNG	√ - Completed	X – NA.	√ - Under Progress	X – NA.	√ - Under Progress	X – NA.	X – NA.	X – NA.	√ - Completed	X – NA.	
REDUCTION IN Kwh/Yr	177,393	83,276	92,256	34,286	-	102,858	-	97,200	-	-	587,269
REDUCTION IN Co2 TON/Yr	140.32	65.81	72.97	27.12	-	81.36	-	76.85	-	-	464.43
STATUS	ALL COMPLETED	FY 2021-22	FY 2021-22	FY 2021-22		FY 2021-22		FY 2021-22			

**Energy Efficient Motor**



**Our target**  
 Understand the Best Practices in other factories and strive to a National Bench Mark. Till now there is no standard Bench Mark for Automobile Sector



# 3. SPECIFIC ENERGY CONSUMPTION IN LAST 4 YEARS ( 2017-21 ).



**Compressor heat recovery used for Component Washing Machine**



**VFD for major load**



**Energy Efficient Power Pack**



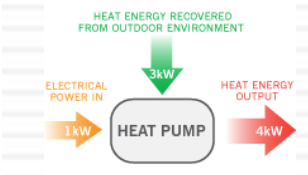
**PNG**

**Online Monitoring**



DESCRIPTION	P-2	P-3	P-4	P-5	P-6	P-7	P-9	P-11	P-12	FTF
Energy Efficient Power Pack	✓ - 8 M/c Completed.	✓ - 6 M/c Completed.	✓ - 2 M/c Completed.	✓ - 4 M/c Completed.	✓ - 4 M/c Completed.	✓ - 4 M/c Completed.	✓ - 1 M/c Completed.	✓ - 2 M/c Completed. 1M/c Under Progress.	X - NA.	X - NA.
IE3 Motors	✓ - Completed ( 5 M/c ).	✓ - Completed ( 15 M/c ).	✓ - Under Progress ( 1 M/c ).	✓ - Completed ( 4 M/c ).	✓ - Completed ( 11 M/c ).	✓ - Completed ( 5 M/c ).	X - NA.	✓ - Completed ( 3 M/c ).	✓ - Completed ( 2 M/c ).	✓ - Completed ( 1 M/c ).
INVERTER AC's	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
Energy Efficient Compressor ( CFM )	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
LED LIGHT	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
REDUCTION IN Kwh/Yr	55,000	22,875	13,574	19,857	11,985	28,450	5,800	14,785	9,800	5,700
REDUCTION IN Co2 TON/Yr	42.05	17.63	10.46	15.30	9.2	21.93	4.47	11.39	7.55	4.39
STATUS	FY2021-22	FY 2021-22	FY 2021-22	FY 2021-22	FY 2021-22	FY 2021-22	FY 2021-22	FY 2021-22	FY 2021-22	FY 2021-22

**Energy Efficient Motor**

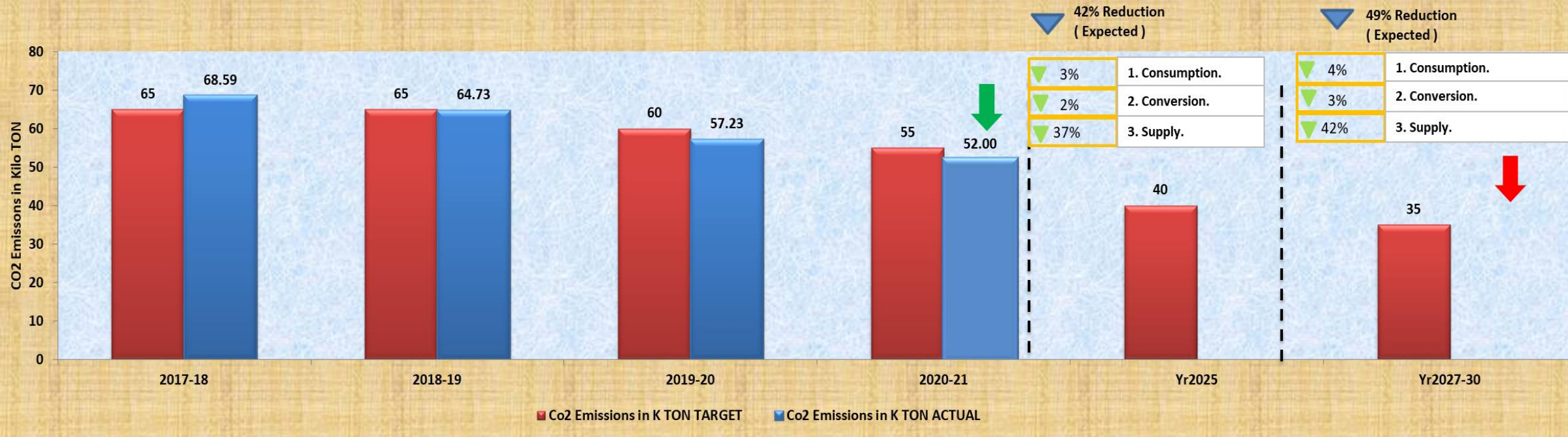


**Understand the Best Practices in other factories and strive to a National Bench Mark. Till now there is no standard Bench Mark for Automobile Sector**



# 4. INFORMATION ON COMPETITORS, NATIONAL & GLOBAL BENCHMARK

Year wise CO2 emission & Reduction trend (K Ton) from Base Year 2016



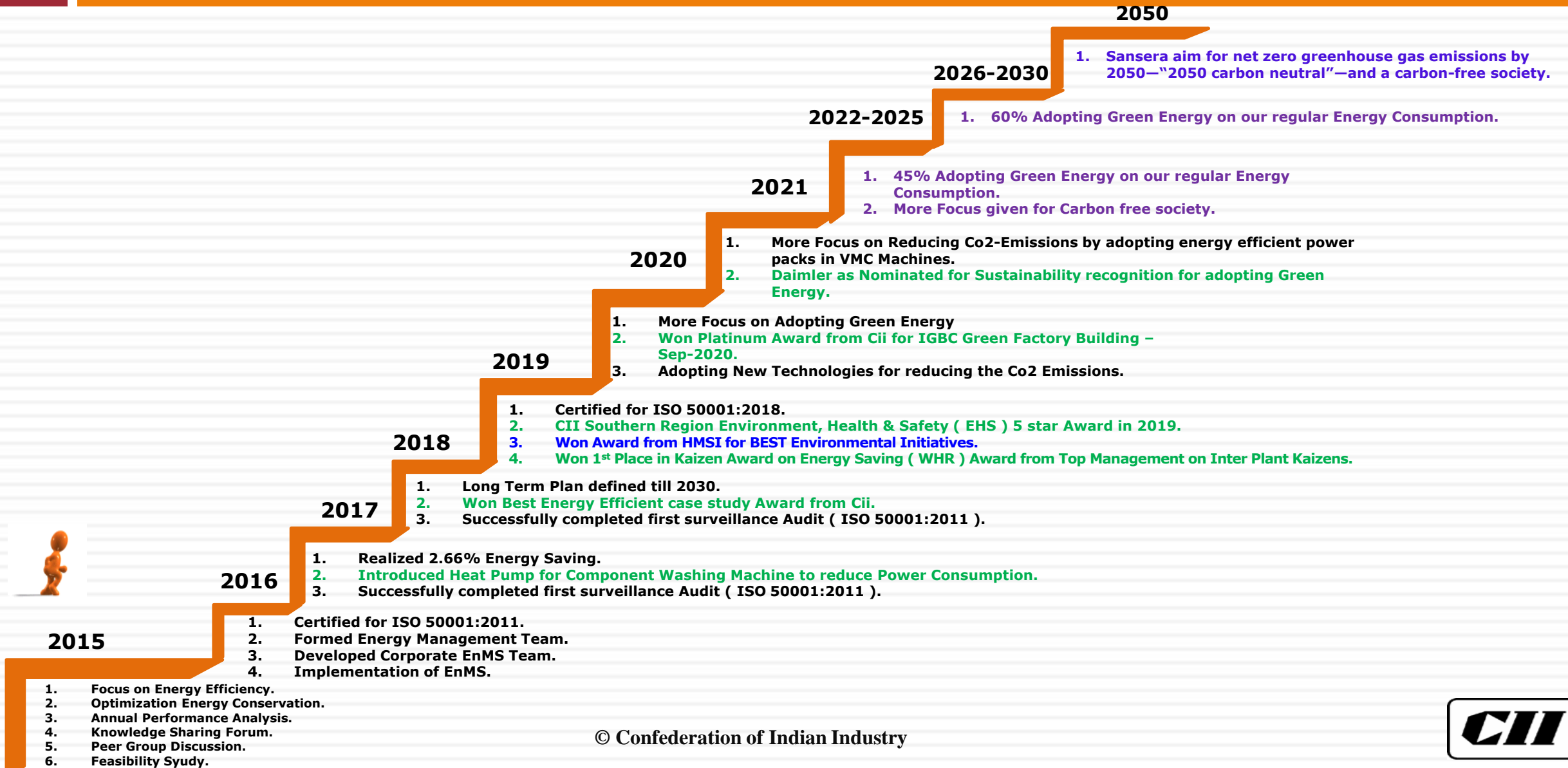
ACTIVITY PLANNED

2016-17 ( Base year )  
Kaizen Activity started towards reducing Co2 Emission.

1. Heat Pump Introduced in Bin Washing machine.
2. WHR Introduced in Component washing machine & Post Washing Machine.
3. High Energy Efficient chillers Introduced in Machine Shop.
4. Energy Efficient Power Pack Introduced in Suitable Applications.
5. Solar PP Activity started from Sep'18 Onwards.

1. Solar PP.
2. Solar Roof Top – 1200 Kw.
3. Group Captive Power – Wind.
4. Reducing Power Consumption as continual improvement through EnMS.

# 4. SANSEERA ROAD MAP



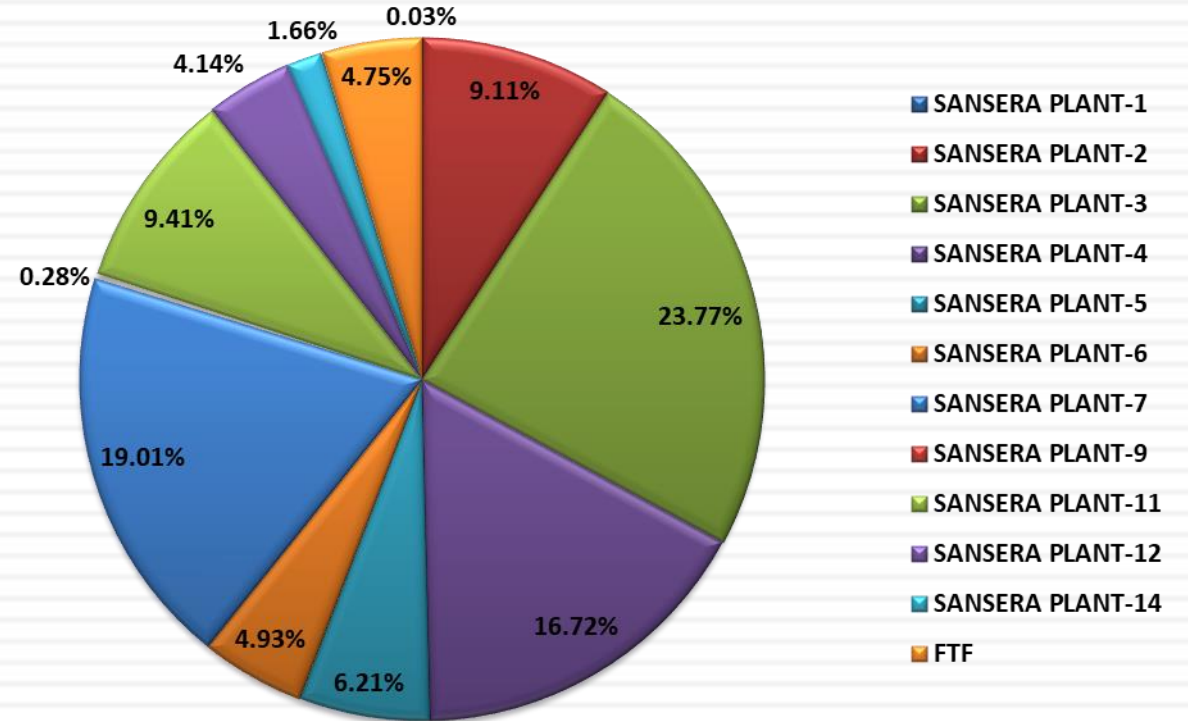
## 4. INFORMATION ON COMPETITORS, NATIONAL & GLOBAL BENCHMARK

S.No	PLANT	2021-22
		UNITS IN Kwh
1	SANSERA PLANT-1	600.00
2	SANSERA PLANT-2	1,91,564.00
3	SANSERA PLANT-3	5,00,000.00
4	SANSERA PLANT-4	3,51,730.00
5	SANSERA PLANT-5	1,30,561.00
6	SANSERA PLANT-6	1,03,683.00
7	SANSERA PLANT-7	4,00,000.00
8	SANSERA PLANT-9	5,800.00
9	SANSERA PLANT-11	1,97,922.00
10	SANSERA PLANT-12	87,000.00
11	SANSERA PLANT-14	35,000.00
12	FTF	1,00,000.00
<b>TOTAL SAVINGS IN Kwh</b>		<b>21,03,860.00</b>

### MAJOR PROJECTS PLANNED :

1. Adopting Energy efficient power pack for all VMC's.
2. Heat Pump system adopting for all washing Machines to eliminate the heaters.
3. Replacing motor from IE2 to IE3 wherever possible, in few areas we are replacing with IE4 Motors.
4. For Heat treatment introducing VFD for agitator Motors.
5. Energy saver option is monitoring for all the Machines to reduce the Co2 Emission in the lines.
6. Online Monitoring to be strengthen to avoid the high consumption in the line.

ENCON PROJECTION FY21-22



*Understand the Best Practices in other factories and strive to a National Bench Mark. Till now there is no standard Bench Mark for Automobile Sector we are working and collect the data from our Known sources....*



# 5. ENERGY SAVING PROJECTS IMPLEMENTED IN LAST 3 YEARS

## Cutting fluid consumption reduction



Before	Present
--------	---------



- Replaced Neat oil with Water soluble emulsion in Vertical Honing Machines
- Avg. consumption reduced from 480 litres to 66 litres i.e 88% reduction / machine
- Cost saved Rs. 1.44 lacs/annum i.e 65% cost saving / machine
- Requirement of Chiller unit eliminated (Cost Rs. 90,000)
- CO<sub>2</sub> emission reduced by 0.6 ton/month / machine

Projects Identified	Completed	Yet to Complete
34	34	0

## Energy saving through Heat Pump



Use of Heat pump in place of Electrical heater in Component Washing Machine – 50 % reduction of resistive load

Before
--------



Present
---------



- Electrical Heater – 32 Kw/hr (12 hrs/day)
- Heat Pump – 16 Kw/hr (12 hrs/day)
- Avg. 13 Kw of power saved per hour
- 48,672 Kwh saved per annum (13 Kw/hr \* 12 hrs/day \* 312 days/annum)
- Cost saved Rs. 3.89 lacs / annum / machine
- CO<sub>2</sub> Emission reduction – 38.49 Tonnes / Annum / machine
- Horizontally deployment done in 10 machines

Projects Identified	Completed	Yet to Complete
12	6	6 (2025)

## Heat Treatment Plant



Capacity Enhancement by Fixture weight reduction in Sealed Quench Furnace (SQF)

Before
--------



Present
---------



- Fixture material changed from Stainless Steel alloy to Casting
- Fixture weight reduced from 300 kgs to 180 kgs
- Productivity increased from 3000 Nos./shift to 4200 Nos. – 40% increase
- Energy cost / part reduced

Projects Identified	Completed	Yet to Complete
8	8	0

## Reduction of Compressed Air Consumption



Introduced Air line shut off valves to reduce Compressed air consumption when machines are idle

- 14,726 Kwh saved / annum / plant
- Cost saved Rs. 1.17 lacs / annum / plant
- Horizontal deployment done in 7 plants

Projects Identified	Completed	Yet to Complete
105	78	27 (2022)

## Energy Saving by Waste Heat Recovery



- Total project cost Rs. 7.84 lacs.
- Payback period: 18 months
- Cost saved : Rs. 14.14 lacs / annum
- Reduction in CO<sub>2</sub>: 49.24 Ton/annum
- Energy saving by Waste Heat from Compressor 82,256 Kwh / annum
- Horizontal deployment done in 6 more machines

(This project won 1<sup>st</sup> Prize in ACMA Zonal Kaizen Competition 2019 & won HMSI Supplier Environment Best Practices Award 2019)

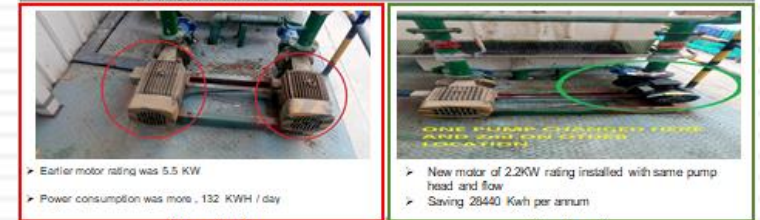
Projects Identified	Completed	Yet to Complete
15	7	8 (2023)

## Honda Kaizen Sheet >>> CO2 Reduction Countermeasure

Date: 30/07/20

	Company Name	M/s Sansera Engineering Ltd.	Kaizen No.
	Address / Location	Plot no. 22-23, sector-6, IMT Manesar	1
	Department / Area	Maintenance	

Theme Name To save energy by replacing old cooling tower pump motor with less rating and energy efficient motor



- Earlier motor rating was 5.5 KW
- Power consumption was more - 132 KWH / day




- New motor of 2.2KW rating installed with same pump head and flow
- Saving 28440 Kwh per annum

		(Benefits)			(Savings)			
Tangible	Non-Tangible	Parameter	Unit	Quantity			Rs.	
				Before	After	Saving		
1. Energy saving 79 Kwh/day	1. No motor fail as new motor	Electricity	KWH	3980 / month	1590 / month	2370 / month	19197 / month	
2. Cover less space	2. Reduction Co2 in power generation	Projects Identified	Completed	Yet to Complete				
3.	3.	73	54	19 (2021)				




C'measure by - Name Mr Chandrakant Ray  
Verified by - Mgr. Name Mr Varun Tyagi  
Reduction of CO<sub>2</sub> → 2

# 5. ENERGY SAVING PROJECTS IMPLEMENTED IN LAST 3 YEARS




**Honda Kaizen Sheet >>> CO2 Reduction Countermeasure** Date: 13/10/20

	Company Name	M/s Sansera Engineering Ltd.	Kaizen No.
	Address / Location	Plot no. 22-23, sector-6, IMT Manesar	
	Department / Area	Maintenance	
			<b>5</b>
Theme Name	To save energy by activating powersaver mode in Pin Press machine		
 			
<ul style="list-style-type: none"> <li>Hydraulic motor run continuously even in lunch / dinner and setup change time</li> <li>Motor rating 2.2 kw</li> <li>Now motor stop in idle and total stop time 2.0 hours daily</li> <li>So saving = 2.2 * 2 = 4.4 kwh/ day</li> </ul>			
<b>(Benefits)</b>		<b>(Savings)</b>	
Tangible	Non Tangible	Parameter	Unit
1. Energy saving 110 kwh/ month	1. Easy to operate	Electricity	KWH
2.	2. Reduction Co2 in power generation		
3.	3.		
C'measure by - Name	Mr Chandrakant Ray	Diesel / Petrol	Rs.
Verified by - Mgr. Name	Mr Varun Tyagi	Other	
Reduction of CO2 → 94.16			
	Projects Identified	Completed	Yet to Complete
	7	7	0


**Honda Kaizen Sheet >>> CO2 Reduction Countermeasure** Date: 29/12/20

	Company Name	M/s Sansera Engineering Ltd.	Kaizen No.
	Address / Location	Plot no. 22-23, sector-6, IMT Manesar	
	Department / Area	Maintenance	
			<b>2</b>
Theme Name	To save energy by installing heat exchanger in place of coolant chiller unit		
 			
<ul style="list-style-type: none"> <li>Chiller compressor and fan run even in winter and consume energy</li> <li>Heat Exchanger installed to not run chiller in winter and maintain temp. of coolant</li> </ul>			
<b>(Benefits)</b>		<b>(Savings)</b>	
Tangible	Non Tangible	Parameter	Unit
1. Energy saving 600 kwh/ month	1. Easy to operate	Electricity	KWH
2. Low maintenance Cost	2. Reduction Co2 in power generation		
3.	3.		
C'measure by - Name	Mr Chandrakant Ray	Diesel / Petrol	Rs.
Verified by - Mgr. Name	Mr Varun Tyagi	Other	
Reduction of CO2 → 513.6			
	Projects Identified	Completed	Yet to Complete
	2	2	0




**Honda Kaizen Sheet >>> CO2 Reduction Countermeasure** Date: 14/12/20

	Company Name	M/s Sansera Engineering Ltd.	Kaizen No.
	Address / Location	Plot no. 22-23, sector-6, IMT Manesar	
	Department / Area	Maintenance	
			<b>3</b>
Theme Name	To save energy by auto cut of compressed air in air gauge units.		
 			
<ul style="list-style-type: none"> <li>Continuous air flow from gauge</li> <li>Waste of energy even when component not check</li> <li>Sensor fitted and interlinked with solenoid Valve</li> <li>Auto air cut off within 2 minutes if not check</li> </ul>			
<b>(Benefits)</b>		<b>(Savings)</b>	
Tangible	Non Tangible	Parameter	Unit
1. Energy saving 450 kwh/ month	1. Easy to operate	Electricity	KWH
2.	2. Reduction Co2 in power generation		
3.	3.		
C'measure by - Name	Mr Chandrakant Ray	Diesel / Petrol	Rs.
Verified by - Mgr. Name	Mr Varun Tyagi	Other	
Reduction of CO2 → 385.2			
	Projects Identified	Completed	Yet to Complete
	7	7	0


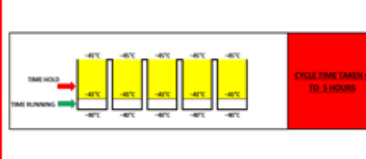
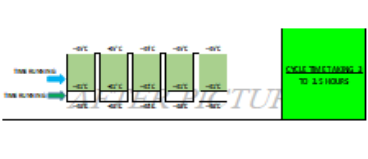
**Honda Kaizen Sheet >>> CO2 Reduction Countermeasure** Date: 28/06/20

	Company Name	M/s Sansera Engineering Ltd.	Kaizen No.
	Address / Location	#261/c Bommasandra Indl, Area, Bangalore	
	Department / Area	Maintenance	
			<b>1</b>
Theme Name	To Reduce Power Consumption ( Kwh ) & Co2 Reduction by Introducing Energy Efficient Power Pack .		
 			
<ul style="list-style-type: none"> <li>Earlier motor rating was 2.2 KW</li> <li>Power consumption was more , 60.06 KWH / day</li> <li>New Power pack motor of 1.5KW rating installed with same pump head and flow</li> <li>Saving 25860 Kwh per annum</li> </ul>			
<b>(Benefits)</b>		<b>(Savings)</b>	
Tangible	Non Tangible	Parameter	Unit
1. Energy Efficient Power Pack Used.	1. Less space required	Electricity	KWH
2.	2. Reduction Co2 in power generation		
3.	3.		
C'measure by - Name	Mr Ranjith B S	Diesel / Petrol	Rs.
Verified by - Mgr. Name	Mr S.Inbaraj	Other	
Reduction of CO2 in Ton/month → 1.67			
	Projects Identified	Completed	Yet to Complete
	68	12	56 ( 2025 )

**Honda Kaizen Sheet >>> CO2 Reduction Countermeasure** Date: 20/05/20

	Company Name	M/s Sansera Engineering Ltd.	Kaizen No.
	Address / Location	#261/c Bommasandra Indl, Area, Bangalore	
	Department / Area	Maintenance	
			<b>2</b>
Theme Name	To reduce power consumption by used plate heat exchanger and reduce maintenance cost in Per-washing machine.		
 			
<ul style="list-style-type: none"> <li>More power consumption in Pre-Washing machine.</li> <li>More breakdown due to heater replacement</li> <li>Power consumption reduced from 4000 Kwh to 1000 Kwh /month</li> <li>Temperature maintain properly.</li> </ul>			
<b>(Benefits)</b>		<b>(Savings)</b>	
Tangible	Non Tangible	Parameter	Unit
1. Energy saving 26192 kwh/ month	1. Reduction Co2 in power generation	Electricity	KWH
2. Reduction Co2 in 44.63Ton.	2.		
3.	3.		
C'measure by - Name	Mr Ranjith b s	Diesel / Petrol	Rs.
Verified by - Mgr. Name	Mr S.Inbaraj	Other	
Reduction of CO2 in Ton/month → 2			
	Projects Identified	Completed	Yet to Complete
	15	7	8 ( 2023 )

**Honda Kaizen Sheet >>> CO2 Reduction Countermeasure** Date: 29/12/20

	Company Name	M/s Sansera Engineering Ltd.	Kaizen No.
	Address / Location	#261/c Bommasandra Indl, Area, Bangalore	
	Department / Area	Maintenance	
			<b>4</b>
Theme Name	To Reduce the sub-zero process cycle time		
 			
<ul style="list-style-type: none"> <li>sub zero process time taken 4 hrs to 5 hrs</li> <li>sub zero process time taking 3 to 3.5 hrs</li> </ul>			
<b>(Benefits)</b>		<b>(Savings)</b>	
Tangible	Non Tangible	Parameter	Unit
1. Energy saving 938 kwh/ month	1. Improve productivity	Electricity	KWH
2.	2. Reduction Co2 in power generation		
3.	3.		
C'measure by - Name	Mr Ranjith b s	Diesel / Petrol	Rs.
Verified by - Mgr. Name	Mr S.Inbaraj	Other	
Reduction of CO2 in Ton /month → 7.27			
	Projects Identified	Completed	Yet to Complete
	1	1	0

# 5. ENERGY SAVING PROJECTS IMPLEMENTED IN LAST 3 YEARS

## Energy Saving Kaizen

BEFORE	AFTER						
<ul style="list-style-type: none"> <li>Conventional Power Pack Used.</li> <li>40L Oil tank.</li> <li>Vane Pump.</li> <li>Spool Valves.</li> <li>1500 Rpm</li> </ul>	<ul style="list-style-type: none"> <li>Energy Efficient Power Pack Used.</li> <li>7.5L Oil Tank – 32.5 Litre Saving.</li> <li>Gear / Radial Piston Pump.</li> <li>Seated Valves.</li> <li>2790 Rpm</li> </ul>						
<ul style="list-style-type: none"> <li>Yearly Power consumption AVG/YEAR 74,800 Kwh</li> </ul>	<ul style="list-style-type: none"> <li>Yearly Power consumption AVG/YEAR 52,538 Kwh.</li> </ul>						
<ul style="list-style-type: none"> <li>Yearly Co2 AVG/YEAR 60.84 TON</li> </ul>	<ul style="list-style-type: none"> <li>Yearly Co2 AVG/YEAR 40.77 TON</li> </ul>						
<p>Conventional Power Pack</p>	<p>Energy Efficient Power Pack</p>						
	<table border="1"> <thead> <tr> <th>Projects Identified</th> <th>Completed</th> <th>Yet to Complete</th> </tr> </thead> <tbody> <tr> <td>68</td> <td>12</td> <td>56 ( 2025 )</td> </tr> </tbody> </table>	Projects Identified	Completed	Yet to Complete	68	12	56 ( 2025 )
Projects Identified	Completed	Yet to Complete					
68	12	56 ( 2025 )					

## Energy Saving Kaizen

**Save space with easy installation**

- Power pack
- motor
- Space comparison: 660mm
- 420mm
- 200mm
- 180mm
- Approx. 85% saving space
- Approx. 30% saving

**Leakage Free and Compact Design Technology system**

- Leakage Free technology
  - Product: Directional seated valve Type BV
  - Benefit: Actuators can move in high efficiency without releasing the oil pressure energy of the accumulator.
- Compact Design technology
  - Product: Compact power pack Type KA
  - Benefit: The tank built in a motor and a pump, and it is a compact.
- High quality Leakage Free
- Directional seated valve Type BV
- Directional spool valve
- Leakage Oil from here

## Energy Saving Kaizen

**Co2 Savings in TON**

Plant : 41 ton Co2 Emissions / Year.  
Actual : 40.77 ton Co2 Emissions / Year.  
Savings : 20.07 ton Co2 Emissions / Year.

**ROI in Million**

**Power Consumption Jun-19 To Jun-20**

**BENEFITS.**

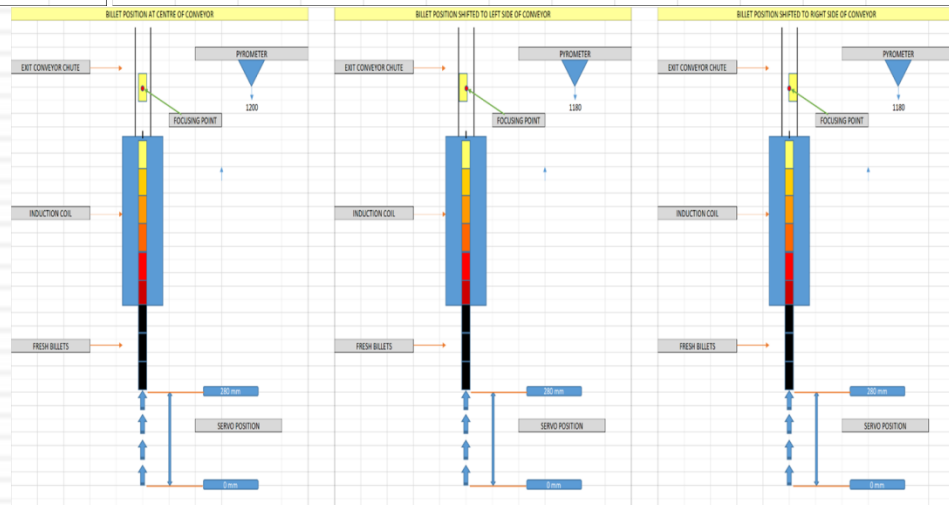
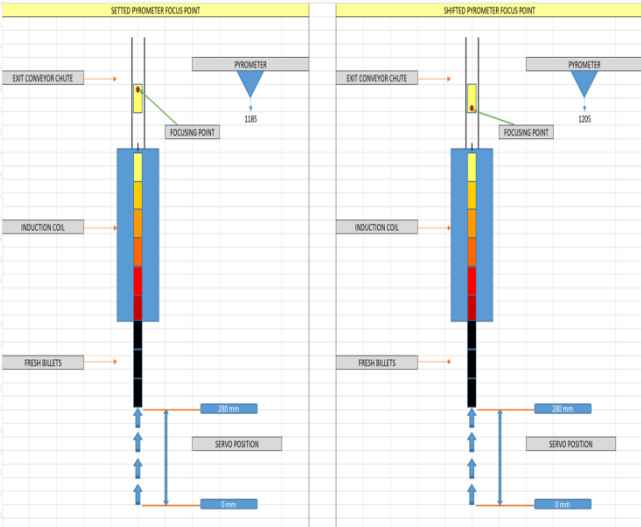
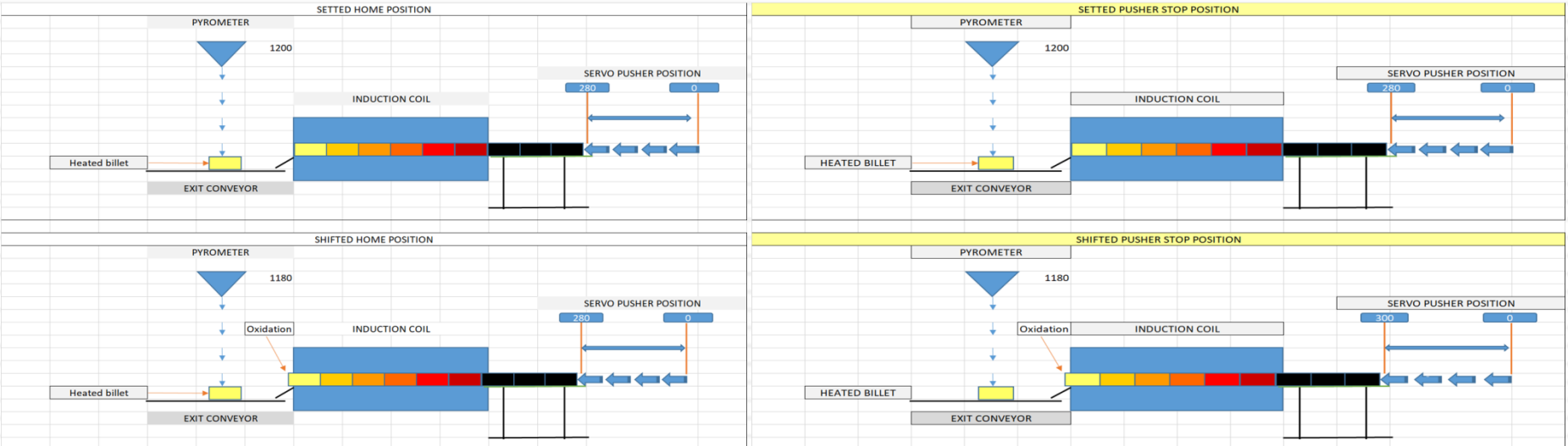
- C-cost savings /Year – Rs. 206,880/-
- E-Improvement in Environment ( REDUCTION IN Co2 20.07 Ton/Year).
- En- Energy Saving done by utilizing the Energy Efficient Power Pack ( 25,864 kwh/Year )

Year	No of Energy saving projects	Investments (INR Million)	Electrical savings ( in Mwh)	Impact on SEC (Electrical in Kwh/Comp)
FY 2018-19	83	14.38	1543	0.005
FY 2019-20	122	20.74	2253	0.008
FY 2020-21	105	17.52	1895	0.0031

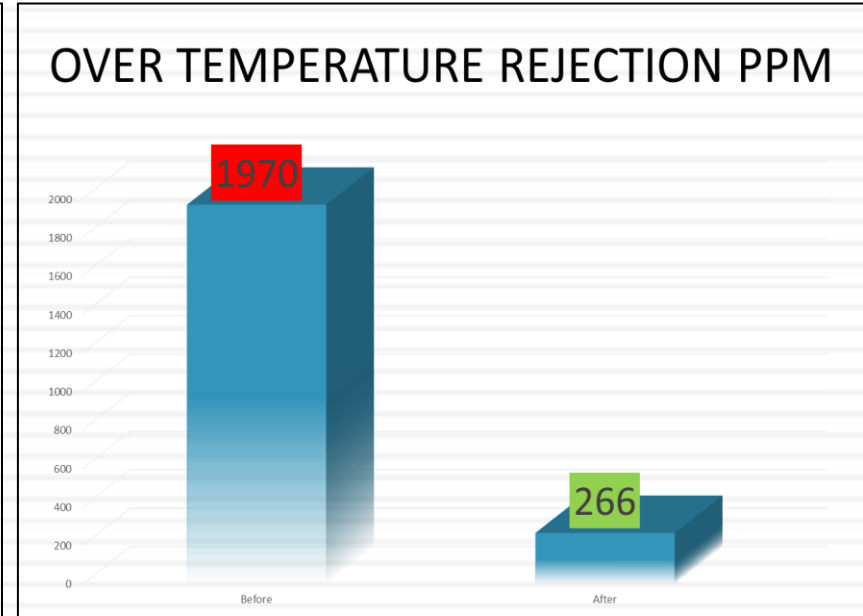
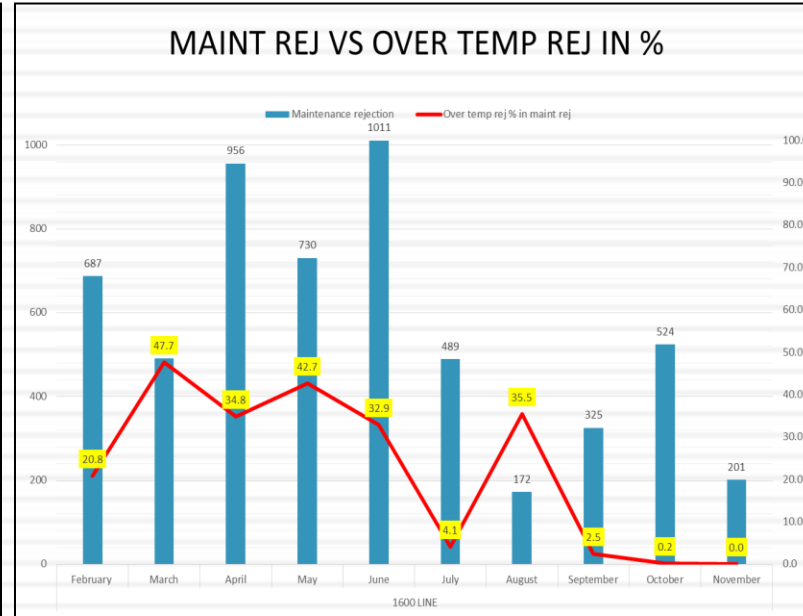
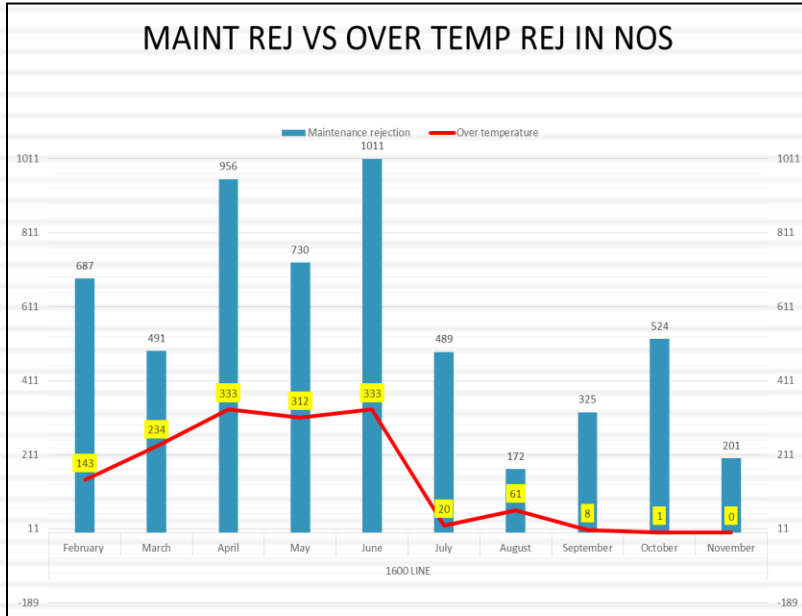


# 6. INNOVATIVE PROJECTS IMPLEMENTED.

## REDUCTION OF OVER TEMPERATURE REJECTIONS IN 1600 LINE – BILLET HEATER



# 6. INNOVATIVE PROJECTS IMPLEMENTED.

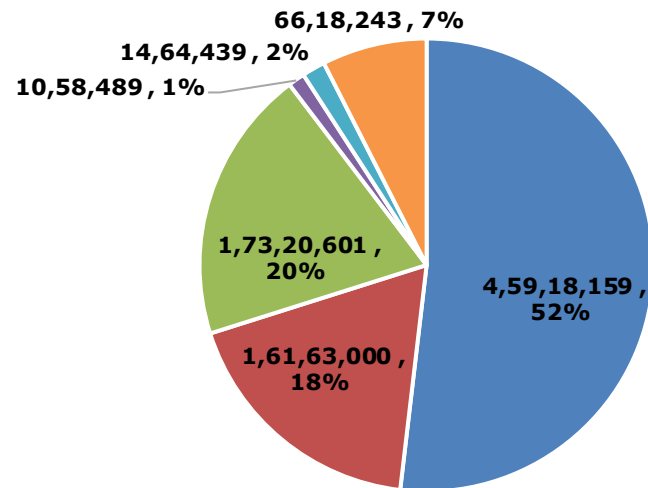


DESCRIPTION	REJ QTY	KWH / COMP	PER MONTH KWH	PER YEAR KWH	Co2 EMISSION IN Ton
<b>BEFORE</b>	<b>333</b>	<b>0.44</b>	<b>147</b>	<b>1758</b>	<b>1.36</b>
<b>AFTER</b>	<b>0</b>	<b>0.44</b>	<b>0</b>	<b>0</b>	<b>0</b>

# 7. UTILISATION OF RENEWABLE ENERGY SOURCES

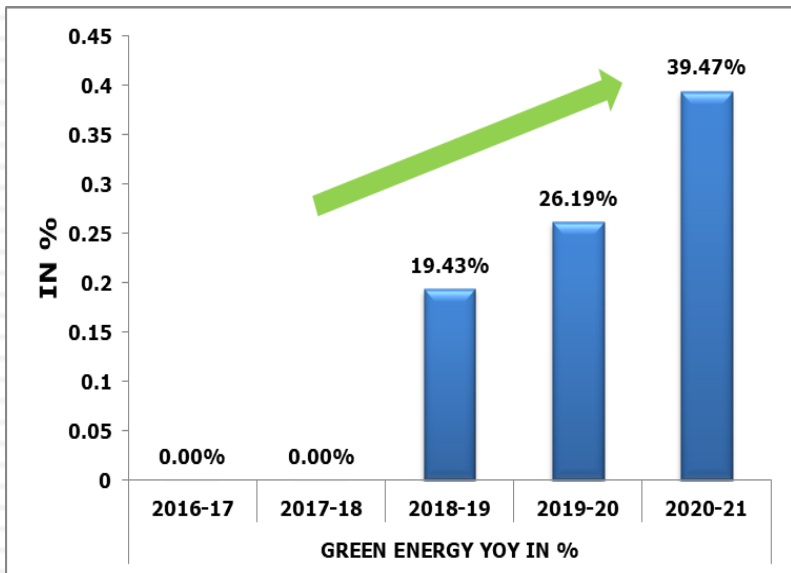
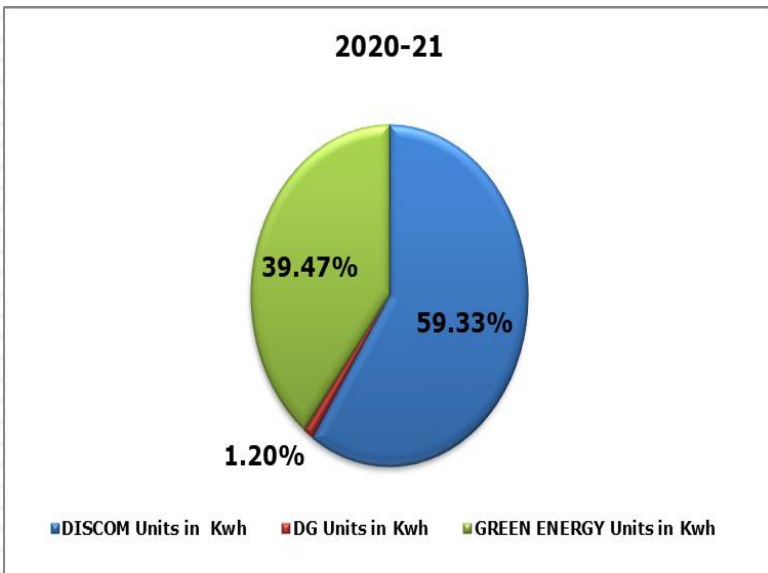
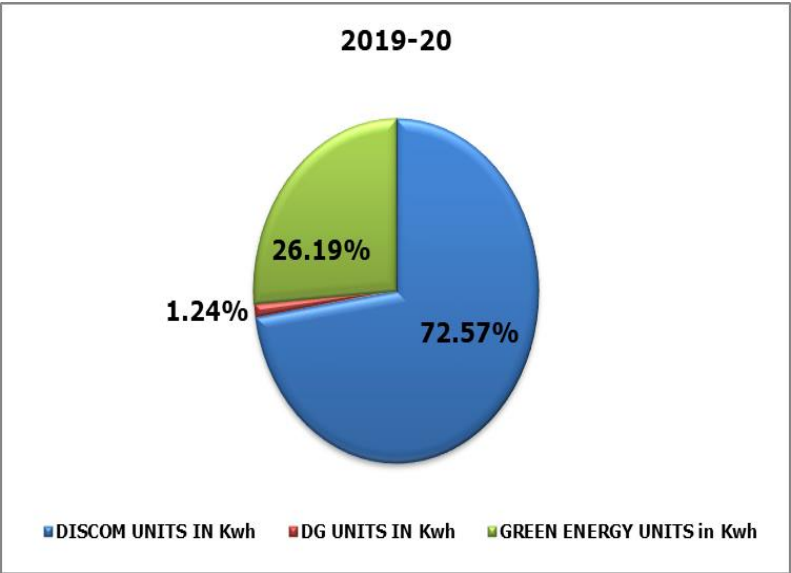
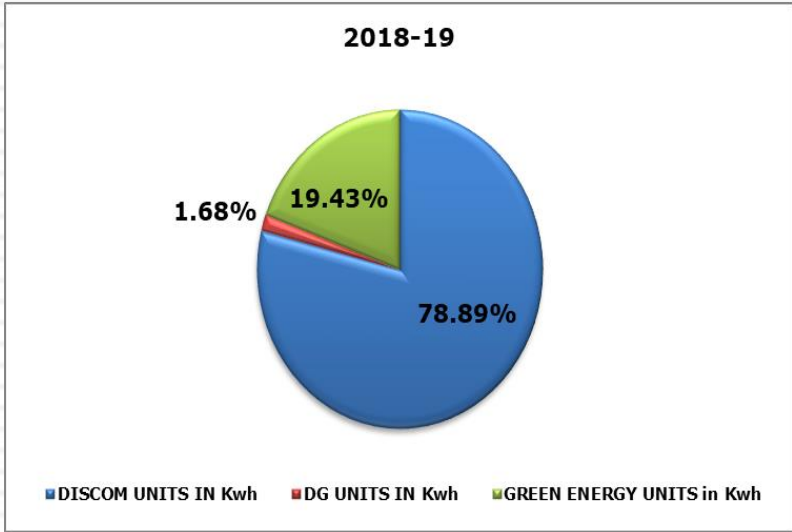
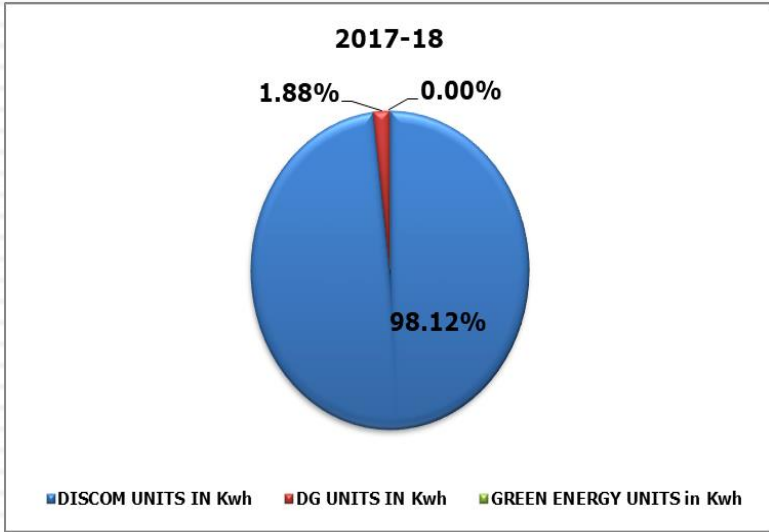
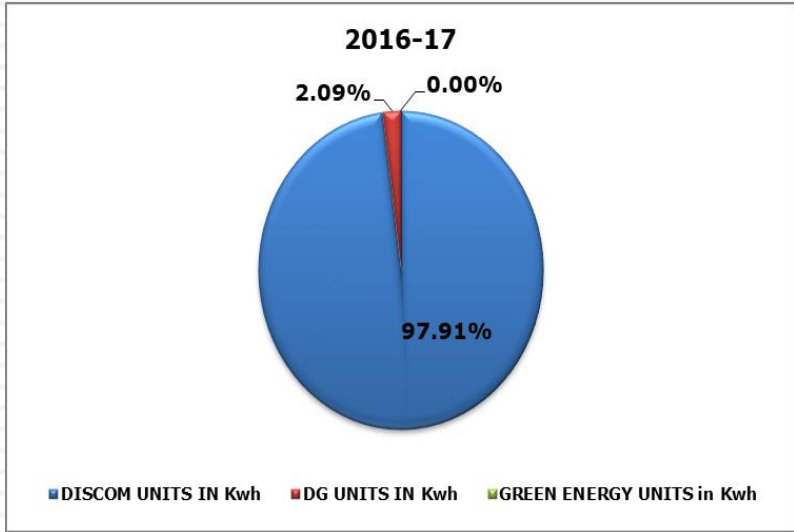
PLANT's	Overall Consumed Power Units in Kwh	DISCOM Power Units in Kwh	DISCOM Share IN %	SOLAR PP Units in Kwh	SOLAR PP Share in %	WIND Power Units in Kwh	WIND Power Share in %	CAPTIVE ( DG ) Power Units in Kwh	CAPTIVE ( DG ) Power Share in %	Roof Top SOLAR Power Units in Kwh	Roof Top SOLAR Power Share in %	IEX & 3rd Party Power Units in Kwh	IEX & 3rd Party Power Share in %
1	5,73,279	5,55,648	96.92%	-	0.00%	-	0.00%	17,631	3.08%	-	0.00%	-	0.00%
2	64,72,331	16,34,542	25.25%	18,00,000	27.81%	28,76,558	44.44%	1,61,231	2.49%	-	0.00%	-	0.00%
3	35,92,105	11,44,864	31.87%	6,50,000	18.10%	17,58,506	48.95%	38,735	1.08%	-	0.00%	-	0.00%
4	42,94,434	40,13,880	93.47%	-	0.00%	-	0.00%	49,744	1.16%	2,30,810	5.37%	-	0.00%
5	1,02,70,091	95,78,160	93.26%	-	0.00%	-	0.00%	2,01,268	1.96%	4,90,663	4.78%	-	0.00%
6	1,58,51,084	1,42,47,352	89.88%	-	0.00%	-	0.00%	86,438	0.55%	-	0.00%	15,17,294	9.57%
7	84,68,625	29,64,301	35.00%	11,50,000	13.58%	40,33,265	47.63%	64,543	0.76%	2,56,516	3.03%	-	0.00%
9	17,12,115	6,96,758	40.70%	-	0.00%	9,85,237	57.55%	30,120	1.76%	-	0.00%	-	0.00%
11	63,01,190	17,80,350	28.25%	-	0.00%	38,97,400	61.85%	1,36,990	2.17%	4,86,450	7.72%	-	0.00%
12	1,90,34,903	59,72,765	31.38%	90,55,000	47.57%	37,69,635	19.80%	2,37,503	1.25%	-	0.00%	-	0.00%
14	6,72,586	6,55,776	97.50%	-	0.00%	-	0.00%	16,810	2.50%	-	0.00%	-	0.00%
15	1,70,525	1,70,525	100.00%	-	0.00%	-	0.00%	-	0.00%	-	0.00%	-	0.00%
FTF	1,11,29,663	25,03,238	22.49%	35,08,000	31.52%	-	0.00%	17,476	0.16%	-	0.00%	51,00,949	45.83%
<b>TOTAL</b>	<b>8,85,42,931</b>	<b>4,59,18,159</b>		<b>1,61,63,000</b>		<b>1,73,20,601</b>		<b>10,58,489</b>		<b>14,64,439</b>		<b>66,18,243</b>	

**POWER CONSUMPTION UNITS IN Kwh FY 20-21**



- DISCOM Power Units in Kwh
- SOLAR PP Units in Kwh
- WIND Power Units in Kwh
- CAPTIVE ( DG ) Power Units in Kwh
- Roof Top SOLAR Power Units in Kwh
- IEX & 3rd Party Power Units in Kwh

# 7. UTILISATION OF RENEWABLE ENERGY SOURCES



# 7. UTILISATION OF RENEWABLE ENERGY SOURCES

## A ) SOLAR ROOF TOP INSTALLATION & PROJECTION PLANT-WISE:

S.No	PLANT	SOLAR ROOF TOP TILL NOW IN Kwh	ADDL SOLAR ROOF TOPTARGET -2025
1	2	0	400
2	3	0	200
3	4	200	200
4	5	400	200
5	6	0	400
6	7	200	200
7	9	0	200
8	11	400	200
9	12	0	400

## B ) SOLAR PP ( THIRD PARTY ) STARTED FROM APR-18 :

Agreement Volume = 22.0 Million Kwh's / Annum.

Minimum Supply Volume = 22.0\*0.8 = 17.6 Million Kwh's / Annum.

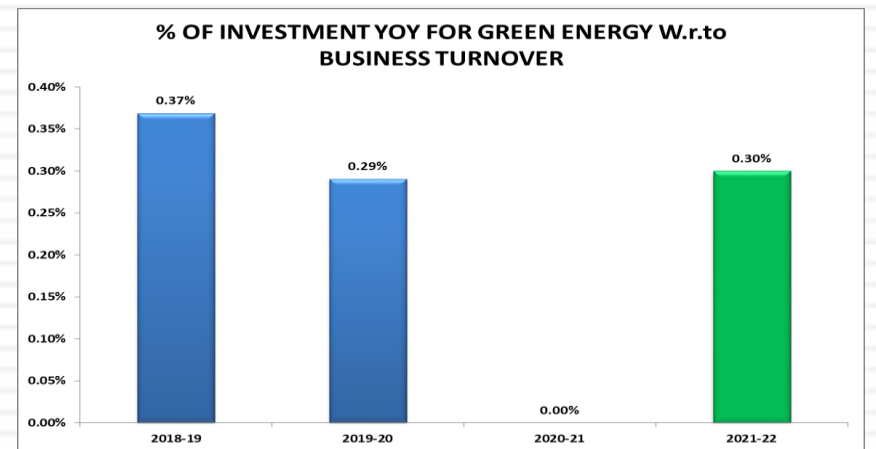
## C ) GROUP CAPTIVE WIND POWER SUPPLY STARTED FROM JAN-20 ( INSTALLED 2.1 MVA \* 3 Turbines = 6.3 MVA by investing 3.59 crores )

Agreement Volume = 20.04 Million Kwh's / Annum.

Minimum Supply Volume = 20.04\*0.8 = 16.032 Million Kwh's / Annum.

**NOTE : ADDITIONAL 30.0 Million Units Group Captive Hybrid Power ( Solar, wind etc ... ) from next year, this is under discussion....**

S.No	PLANT	2020-21	
		UNITS IN Kwh	% in Share
1	SANSERA PLANT-1	-	0.00%
2	SANSERA PLANT-2	46,76,558.00	13.38%
3	SANSERA PLANT-3	24,08,506.00	6.89%
4	SANSERA PLANT-4	2,30,810.00	0.66%
5	SANSERA PLANT-5	4,90,663.00	1.40%
6	SANSERA PLANT-6	-	0.00%
7	SANSERA PLANT-7	54,39,781.00	15.57%
8	SANSERA PLANT-9	9,85,237.00	2.82%
9	SANSERA PLANT-11	43,83,850.00	12.54%
10	SANSERA PLANT-12	1,28,24,635.00	36.70%
11	SANSERA PLANT-14	-	0.00%
12	SANSERA PLANT-15	-	0.00%
13	FTF	35,08,000.00	10.04%

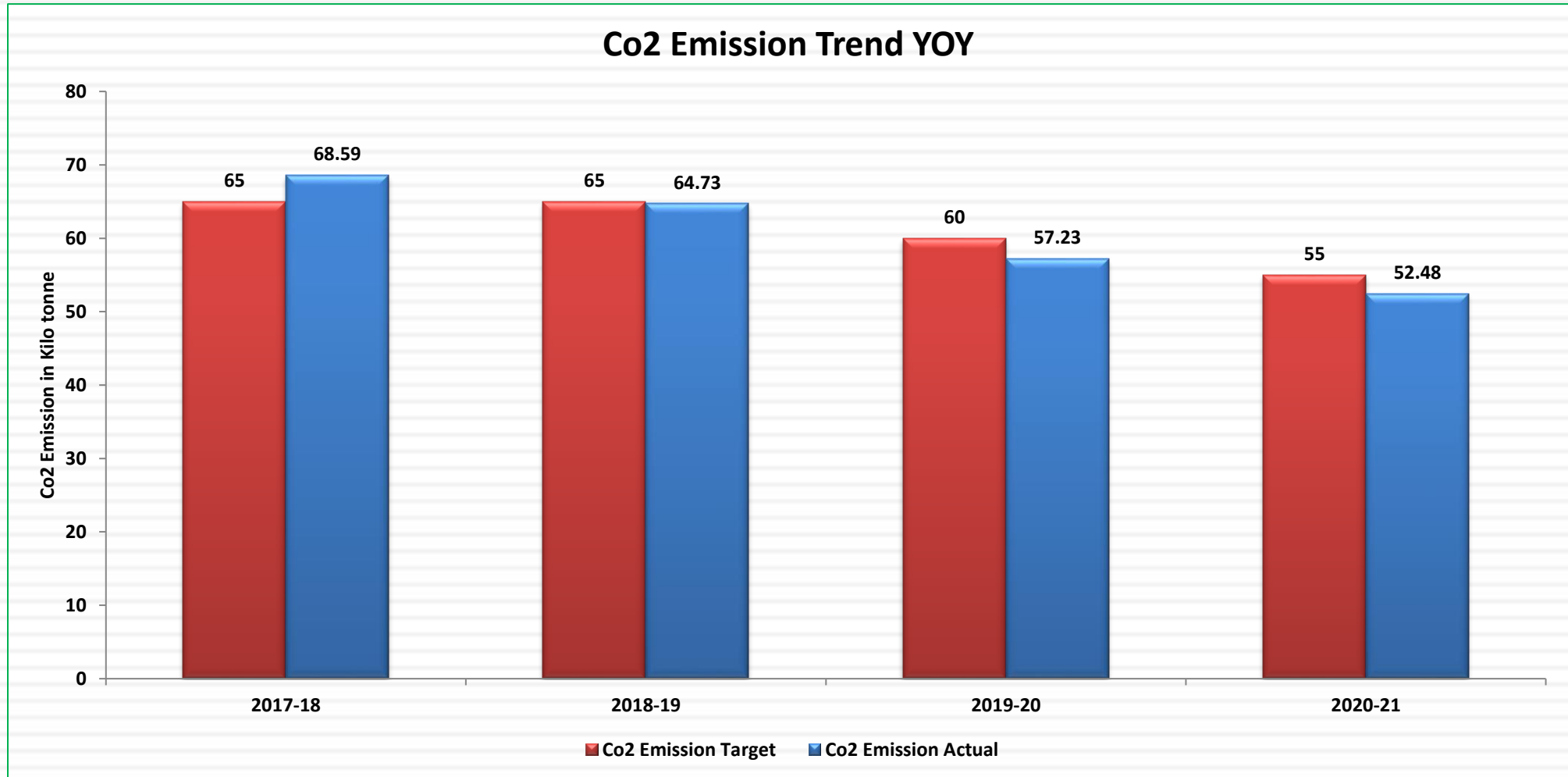


# 8. WASTE UTILIZATION AND MANAGEMENT

Sl No	Year (2018-21)	Type of waste	PER MONTH Kwh	PER YEAR Kwh	Co2 Emission in Tonne
1	2019-20	Heat Energy from Lubrication oil in the Air Screw Compressors	5256	63072	49.13
2	2020-21	Heat Energy from Lubrication oil in the Air Screw Compressors.	15768	189216	147.39

Sl No	Year (2018-21)	Type of waste generated	Savings Ton of oil Equivalent/year	Disposal method
1	2019-20	Heat Energy from Lubrication oil in the Air Screw Compressors	5.43	Dissipated Heat Between Compressor and Lubrication Oil is used in Component Washing Machine through Plate heat exchangers.
2	2020-21	Heat Energy from Lubrication oil in the Air Screw Compressors.	16.26	Dissipated Heat Between Compressor and Lubrication Oil is used in Component Washing Machine through Plate heat exchangers.

# 9. GHG INVENTORISATION



# 10. GREEN SUPPLY CHAIN MANAGEMENT

## Supplier Responsible Sourcing of Natural Raw Materials Policy

### Background

Sansera Engineering Limited Group companies are committed to responsible corporate behaviour and this includes ensuring the natural raw materials we use in our products are produced in a manner that meets or goes beyond applicable laws and regulations, Respects human rights, Safeguards Health & Safety, Protects the Environment, and generally supports the contribution of business to achieving sustainable development.

### Policy

#### 1. Definition, Policy & Application

Natural raw materials are defined as raw materials that come from nature and include extraction, processing, refining and transportation, but are not limited to, minerals, chemicals, wood and corrugated box etc.

It is the policy of Sansera Engineering that natural raw materials used in Sansera group companies' products and product packaging are responsibly sourced and are from suppliers that comply with:

1. All applicable laws and regulations; and
2. Sansera's requirements for responsible sourcing of natural raw materials.

This policy applies to on behalf of Sansera Group companies, including at both company owned / managed facilities and those facilities owned / managed / operated by suppliers, contractors and subcontractors.

#### 2. Requirements for Responsible Sourcing of Natural Raw Materials.

Sansera's requirements as per the below annexure for Responsible Sourcing of Natural Raw Materials sets out general requirements for the sourcing of natural raw materials in line with customer-specific requirements and comply with Water Quality testing and consumption, Air Quality monitoring, Energy consumption and Greenhouse Gas emission, Waste reduction etc. monitoring and maintenance of the record.

Sansera's Responsible Sourcing of Natural Raw Materials policy is available at [www.sanseraindia.com](http://www.sanseraindia.com)

#### 3. Implementation

Sansera's Purchasing Head is responsible for distributing and monitoring this policy.

Sansera Group companies globally are responsible for applying it throughout their supply chain, including making suppliers, contractors and subcontractors aware of the policy and their responsibility to comply with it. Suppliers, contractors and subcontractors should also promote the standards throughout their supply chain.

Queries regarding the implementation of this policy should be directed to [purchase1\\_corp@sansera.in](mailto:purchase1_corp@sansera.in)

Approved by  
Gr. CEO  
16<sup>th</sup> October 2019.

Supplier Responsible Sourcing of Raw material Policy-FUR-CSR-ANNEXURE-01 / Rev 0 Dated 16.10.2019

## Supplier Responsible Sourcing of Natural Raw Materials Policy

### Supplier Commitment

Sansera request that all suppliers who receive the "Sansera Supplier Responsible Sourcing of Natural Raw Materials Policy" submit the "Supplier Commitment" form signed by an authorised person representative.

By signing this form, the supplier acknowledges having read and accepted all the aforementioned terms and conditions of this policy pertaining to all parts, including evidence of Air Quality test, Water Quality test and consumption, energy consumption and Greenhouse Gas emission, Waste reduction etc. monitoring and maintained as per Statutory & Regulatory requirements and as per the below annexure

Company name:

Supplier code:

Address:

Signatory's name:

Signatory's function:

Signatory's email address:

Date:

Signature:

Please return the signed form by mail or the scanned copy by E-mail to: [purchase1\\_corp@sansera.in](mailto:purchase1_corp@sansera.in) specified in the attachment.

Supplier Responsible Sourcing of Raw material Policy-FUR-CSR-ANNEXURE-01 / Rev 0 Dated 16.10.2019

## Supplier Responsible Sourcing of Natural Raw Materials Policy

### Annexure

1. Air Quality parameter – As per State and Central PCB Norms- Test reports
2. Water consumption as per State PCB consent order
3. Water Quality Parameter as per Water act – Test reports
4. Submit your last financial year Form 5 (Environmental Statement)
5. All chemical with MSDS to be ensured at Plant operations
6. Waste reduction plan per Hazardous Waste Management rule
7. Natural Raw material consumption Monitoring such as minerals, Oils, chemical, Water etc.
8. Energy Consumption and Greenhouse Gas emission norms as per below Table

Calculation Table for CO2 emission

Energy	Unit	Yearly Consumption	Conversion factor	Yearly Consumption X Conversion factor = CO2 emission in tonne/year
Electricity (EB)	MWH		0.856	
Diesel	KL		2.667	
LPG	KG		2.86	

Supplier Responsible Sourcing of Raw material Policy-FUR-CSR-ANNEXURE-01 / Rev 0 Dated 16.10.2019

## SUSTAINABLE PROCUREMENT POLICY

Sustainable Procurement Guideline.



### The Principles Ethically Driven:

We conduct our business activities in a fair and transparent manner with honesty, integrity, high ethical & moral standards and respect for human rights. We strongly believe that high ethical standards are essential for sound business relationships. We expect our suppliers to share this commitment while conducting their business.

#### 1.1. Business Integrity and Ethics

##### a. Conflict of interest:

Suppliers are expected to report any conflict of interest in any business dealings with Sansera that supplier is aware of to allow us the opportunity to take appropriate action. It should be disclosed if any Sansera employee or professional under contract with Sansera might have significant ownership or interest in a supplier's business.

##### b. Bribery, corruption, gifts and donations:

Suppliers in all commercial dealings with Sansera or otherwise must not receive or offer to make any illegal payments, gifts, bribes, donations or other improper advantage in order to obtain unethical favours for the business. All suppliers must ensure that no action is taken to violate any applicable anti-bribery or anti-corruption laws and regulations in the locations of their operations and make every effort to eliminate all forms of corruption and bribery.

SUSTAINABLE PROCUREMENT POLICY –PUR-CSR ANNEXURE 01 DATED 10.10.2019, Rev 1

Page 4

**Various Green Power Utilization Projects are under Process ( Additional 30 Million units Green Power Purchasing through Group Captive sector for Bangalore Plants and 10 Millions units for Sansera Pune Plants).**



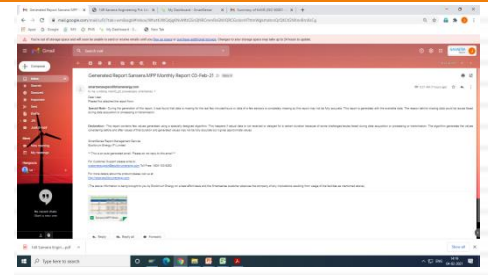
# 11. TEAMWORK, EMPLOYEE INVOLVEMENT & MONITORING.



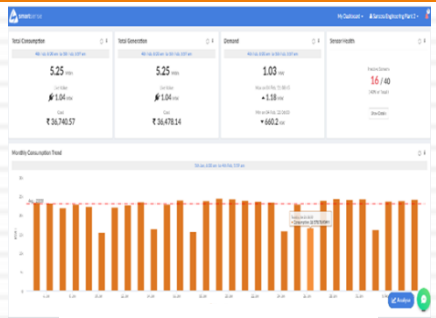
**Daily morning review**



**Daily variance analysis**



**Daily Mailers**



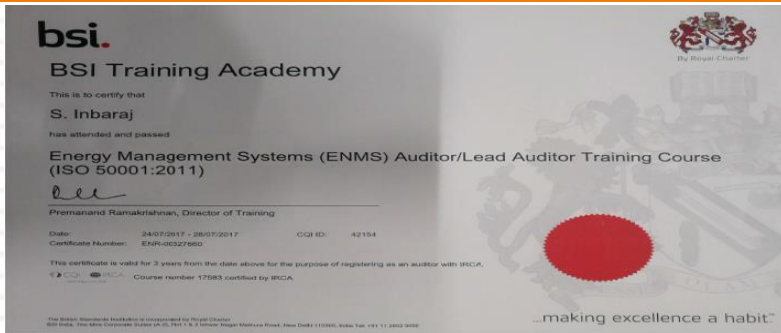
**Monthly MIS**

	Energy Manager	Cell Incharge	Energy Co-ordinator	Core Cell Member	Facility Member
Daily Energy Consumption Report	●		●		●
Monthly Consumption Report	●	●	●	●	●
Daily Variance Analysis	●		●		●
Monthly Variance Analysis	●		●		●
Daily Shop Consumption	●	●	●	●	●

Year	Budget Alloted in Million
2018-19	15
2019-20	22
2020-21	25
2021-22	28



**Monthly MRM**



# 12. IMPLEMENTATION OF ISO 50001 / Green Co / IGBC RATING

**CERTIFICATE**

Energy Management System as per ISO 50001 : 2018

In accordance with TÜV NORD CERT procedures, it is hereby certified that

**SANSERA ENGINEERING LIMITED - PLANT 7**  
REGD. OFFICE & CORPORATE OFFICE :  
143/A, Jigani Link Road,  
Bengaluru - 560 105, Karnataka,  
India  
and other Locations as per Annexures

applies a management system in line with the above standard for the following scope

**Manufacture of Precision Forged, Machined Components & Assemblies**

Certificate Registration No. 44 764 160906  
Audit Report No. 2.5-0848/2000

Valid until 07.09.2022  
Valid from 10.11.2019  
Initial Certification 00.03.2010

Certification Body  
at TÜV NORD CERT GmbH

Issue 10.11.2019  
Place : Mumbai

This certification was conducted in accordance with the TÜV NORD CERT auditing and certification procedures & shall be valid subject to regular Surveillance Audits.

TÜV NORD CERT GmbH Langemarkstrasse 20 45141 Essen www.tuev-nord-cert.com

TUV India Pvt. Ltd., 801, Rameja Plaza - 1, L.B.S. Marg, Ghatkoper (W), Mumbai - 400 086, India www.tuev-nord.com/in

IAF DAKKS

PLANT-1: No. 05, K.H.T Co  
Antharasanahalli Industrial A  
Tumkuru - 572 106, Karnataka  
India

Valid Until 07.09.2022

**TED - PLANT 7**

Precision Machined Assemblies

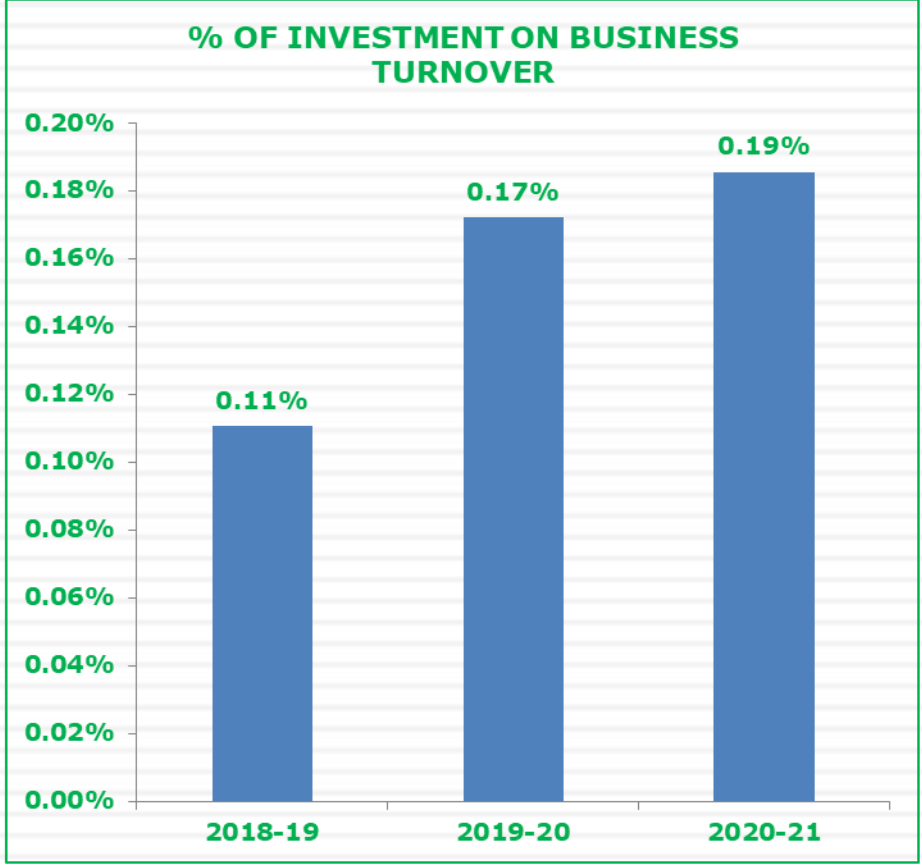
Precision Machined Assemblies

Precision Machined Assemblies

Precision Machined Assemblies

Precision Forged, Machined Assemblies

Precision Forged, Machined Assemblies



Indian Green Building Council (IGBC)

Indian Green Building Council (IGBC)

Indebly certifies that

**Sansera Engineering Limited**  
Plant-11, Bidadi, Karnataka

IGBC Registration No. GF 17 0303

has successfully achieved the Green Building Standards required for the following level of certification under the IGBC Green Factory Building Rating System

**Platinum**  
September 2020  
(This certification is valid for next 1 year)

**PLATINUM**  
2020 - 2023

Sansera Engineering Limited  
Plant-11, Bidadi, Karnataka

Pradeep Bhargava, Chair, IGBC Green Factory Building  
V. Suresh, Chairman, IGBC  
S. Rajagopal, Deputy Director General, CII  
K.S. Vinayakrishna, Executive Director, CII Greening, CII



## 13. LEARNING FROM ENERGY AWARDS :

- **Motivated to Implement Many more Energy Saving Projects.**
- **Learnt Presenting Methodology.**
- **Gained Stage Presentation skills.**
- **Learnt different kind of Energy saving Potentials while looking at other companies presentations.**
- **Gained Horizontal deployment Potentials.**
- **Understood the Importance of Co2 Reduction.**
- **Understood the importance of Energy security by doing Energy saving Projects.**
- **Importance of Energy saving w.r.to reducing Ozone layer depletion and other environmental effects.**

# 13. AWARDS & RECOGNITION'S.



**Awarded by CII for Best Energy efficient case study - 2018**



**Awarded by ACMA and Won 1<sup>st</sup> Prize in Interplant Kaizen for Adopting WHR System - 2019**



**Awarded by HONDA for Best Environmental Initiatives for Adopting WHR System - 2019.**



**Awarded by CII for Excellence in EHS Practices - 2019.**



CII Southern Region Environment, Health & Safety (EHS) 5 Star Award 2019



# 13. AWARDS & RECOGNITION'S.

## Award received from HONDA for BEST Environmental Initiatives FY 19-20



## CII AWARDED FOR IGBC – PLATINUM AWARD



## DAIMLER SUSTAINABILITY RECOGNITION - 2021





***Thank you***

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***P. Jaishankar – [maint1\\_plant2@sansera.in](mailto:maint1_plant2@sansera.in) - 7259497479.***

***Abhishek Kulkarni – [maint2\\_p3@sansera.in](mailto:maint2_p3@sansera.in) - 9148157424***