

**PRESENTATION ON 22nd NATIONAL AWARD FOR EXCELLENCE IN
ENERGY MANAGEMENT**

Panasonic

PANASONIC LIFE SOLUTIONS INDIA PVT LTD.

Unit-05, Daman



Mr. Ashish Singh
Pan India Head- Facility Management & EHS,
Factory Manager- Daman Unit-05
CII Certified Energy Efficiency professional



Mr. Viral Vadgama
Asst. General Manager-Facility Management
CII Certified Energy Efficiency professional



Mr. Bijalkumar Patel
Dy. Manager-Facility Management
(Certified Energy Auditor and Manager)
CII Certified Energy Efficiency professional



Mr. Brijrajsinh Rana
Executive Engineer – Facility Management

Panasonic

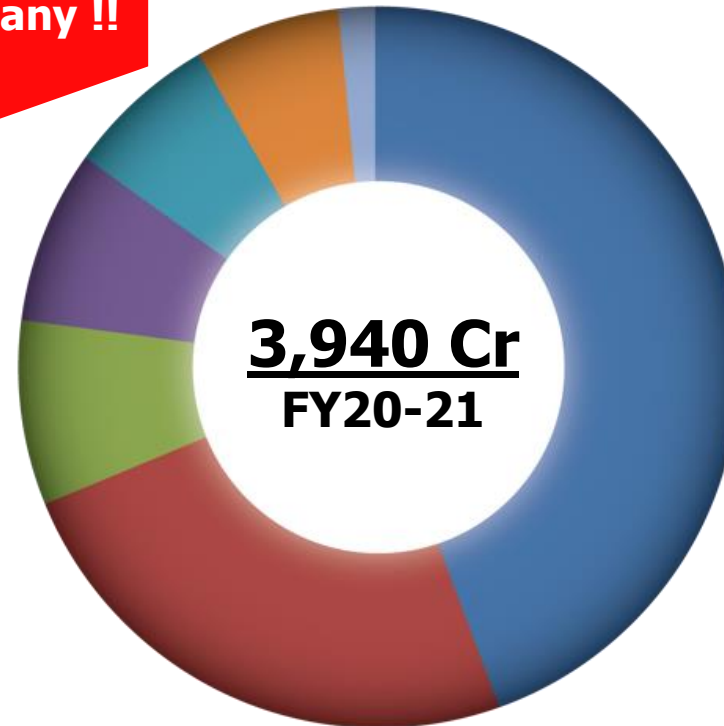
Life Solutions India Pvt. Ltd.






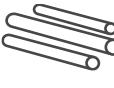


(Formerly known as)

Anchor Electricals Pvt Ltd.

A global enterprise that manufactures cutting edge electrical products

Not just a
Switches
Company !!

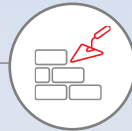


-  Wiring Devices
-  Wires & Cables & Tapes
-  Switchgear
-  Lighting
-  IAQ (Fans)
-  Solar Energy
-  Conduit Pipes
-  Power Tools
-  Homes & Living

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Established

1963



Revenues Million

USD 501+



Organization Strength

9000+



ENERGY POLICY

As an integral part of our business philosophy and core values, we at Panasonic Life Solutions India Pvt. Ltd., are committed to achieve excellence in energy conservation.

To fulfil this commitment, we shall provide information & resources to integrate best energy conservation practices in all our activities.

We will have special focus on:

- Continuous monitoring and controlling energy consumption.
- Continual improvement in manufacturing process, to reduce energy consumption.
- Comply with all relevant statutory and other requirements applicable to energy use, consumption and efficiency.
- Set and review objectives and targets for continual improvements related to energy performance.
- Adopt best feasible technology design, product and services for energy efficiency by purchase of energy efficient product & services.
- Promoting awareness through training on energy conservation among all employees.

For Panasonic Life Solutions India Pvt. Ltd.



Kazuki Yao
Managing Director (Occupier)
Date: 01.05.2021

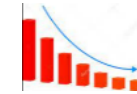
Continuous monitoring and controlling energy consumption.

Continual improvement is process to reduce energy performance.

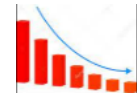
Management commitment for adopting energy efficient technology, product and design.

Energy conservation awareness to all employees.

1. Impact on annual production performance Decreased by 6.6%
2. Impact on specific energy consumption (SEC) Increased by 3% approx.
3. Internally energy awareness training programmer is organized
4. Some energy project has put on hold & minor Energy project implemented inhouse by kaizen teams.
5. Optimization utility run as per availability of production team.
6. ISO Transition Activity completed Even After COVID situation
7. Increase in absenteeism of Remote Location workers due to Transportation issue



Negative



Negative



Positive



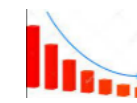
Positive



Positive

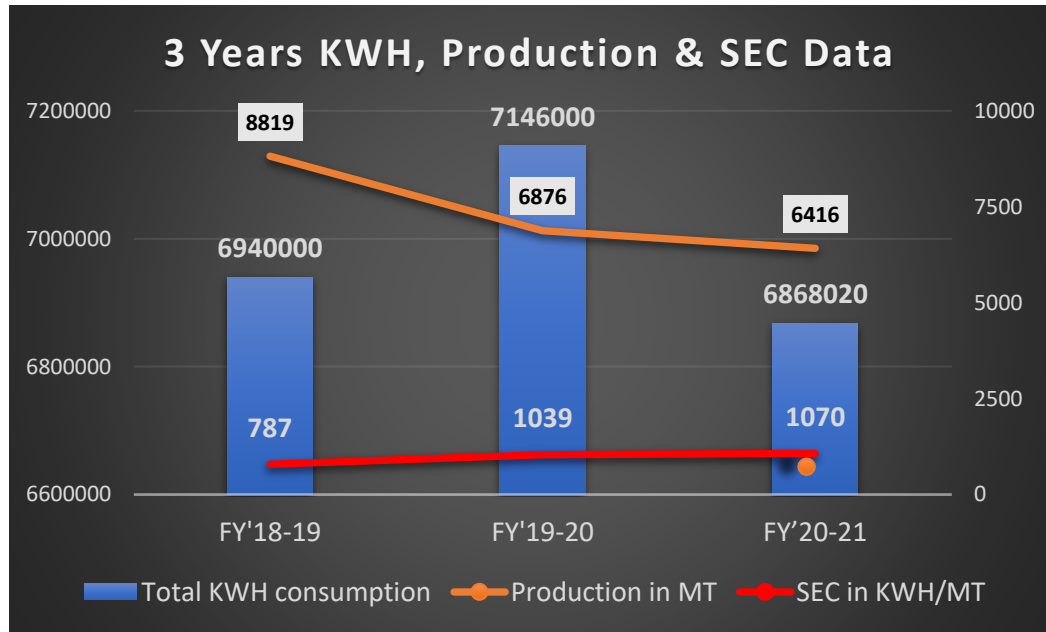
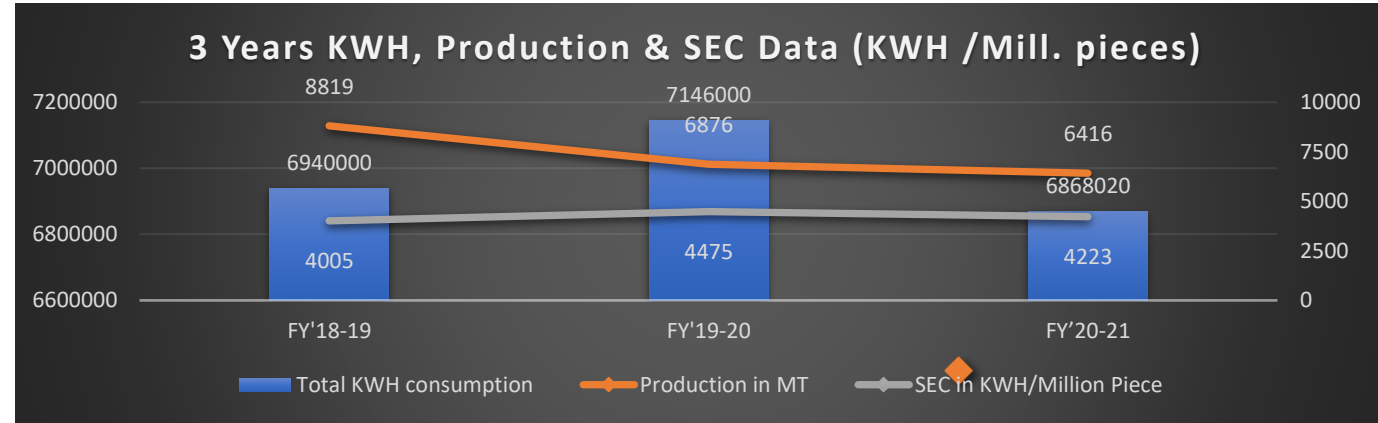


Positive



Negative

Year	Total KWH consumption	Production in MT	SEC in KWH/MT	Million Pieces	SEC in KWH/Million Piece
FY'18-19	6940000	8819	787	1733	4005
FY'19-20	7146000	6876	1039	1597	4475
FY'20-21	6868020	6416	1070	1626.3	4223

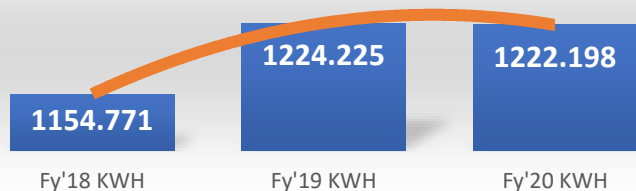


Here , SEC(KWH/MT) is 3% higher. But, SEC (KWH/ Mill. Piece) reduced by 5.6 %.

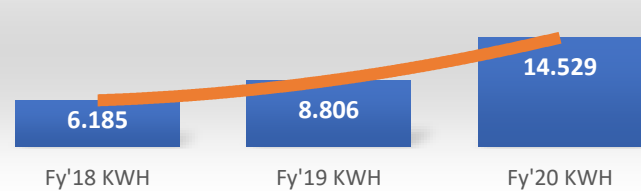
Reason for SEC (KWH/MT) increase are :-

- Post Lockdown Period Sales Demand is fluctuating.
- Some Auxiliaries equipment's added for new product required
- One heavy weight product (i.e Porcelain Kitkat fuse) production stopped.
- Variation in weight of actual production in product size and quantity.
- Addition of Automatic Machines.

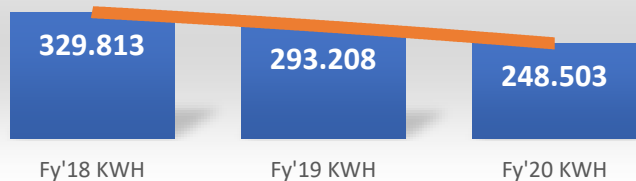
Injection molding



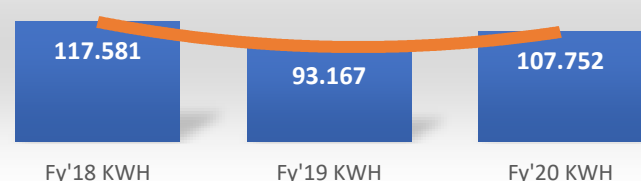
Assembly



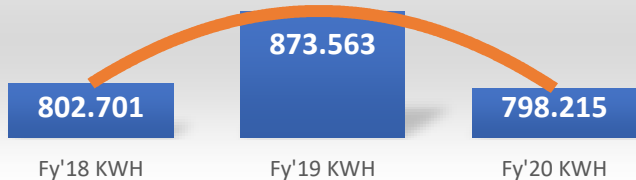
Metal production



M&T



Compression Molding



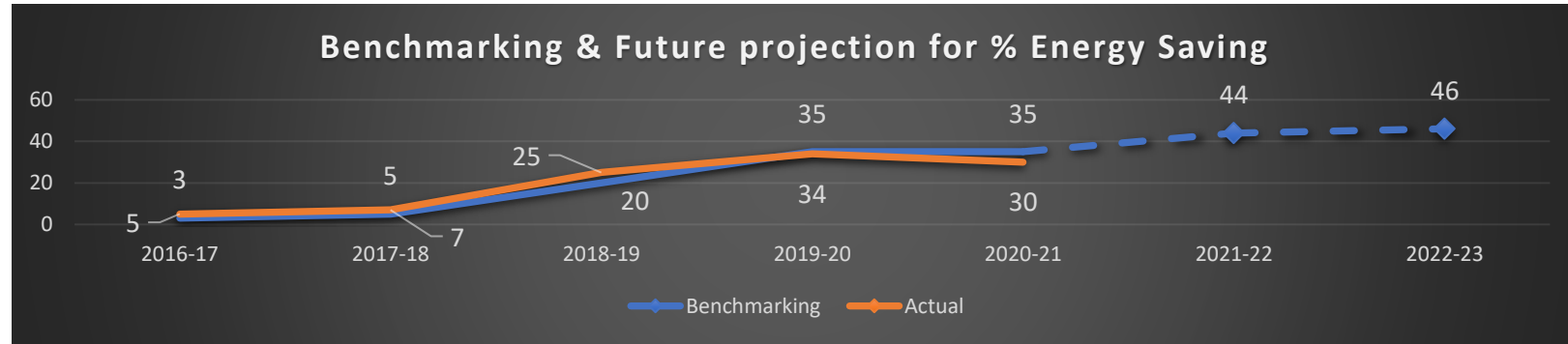
Total Utility



• Section wise SEC almost consistent since last three year and within limit . Minor variation is due integration activity and running of common utilities during less production load.

•Also, For the Assembly area the SEC increased due to production running in night shift.

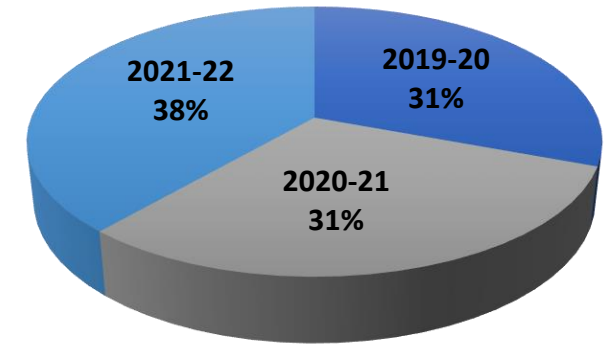
Sr.NO.	Year	Yearly Electrical energy consumption (KWH)	Yearly Saving (KWH)	% Improvement in Saving of yearly KWH
1	2017-18	7344000	537924.5	7
2	2018-19	6940000	1766560	25
3	2019-20	7474000	2566676	34
4	2020-21	6868020	2054126	30



Sustainable Achievements		More Sustainable Competitors	Less Sustainable Competitors
Comparative Analysis	Panasonic		Competitor - 1
	Global	National	Competitor - 1
Renewable Energy Resources	32000 MW	2.0 MW	5.60 MW
Comparative Analysis	Panasonic		Competitor - 2
	Global	National	Competitor - 2
Green House Gases Emissions	10,000 Tons	10 %	8 %

Note:- For Energy Saving Benchmarking we have plotted our internal Benchmarking Based upon Previous year data as the competitive data is not available

% Improvement in Saving of yearly KWH



■ 2019-20 ■ 2020-21 ■ 2021-22

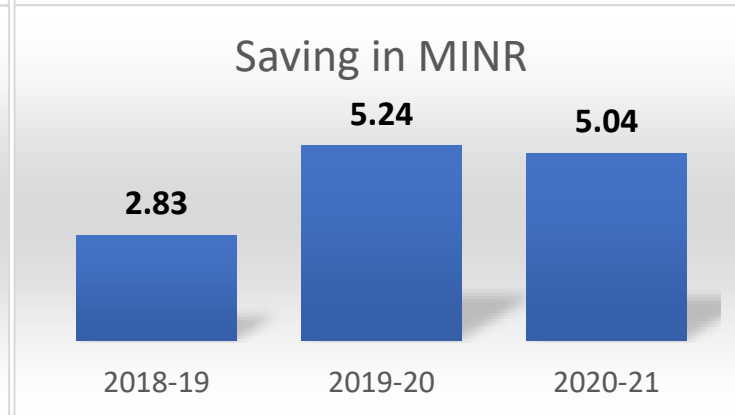
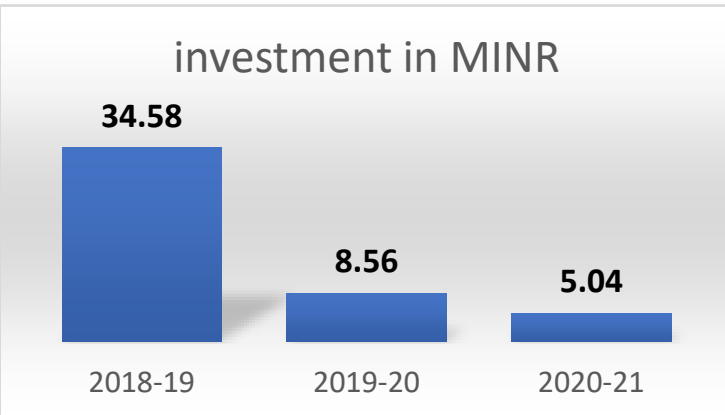
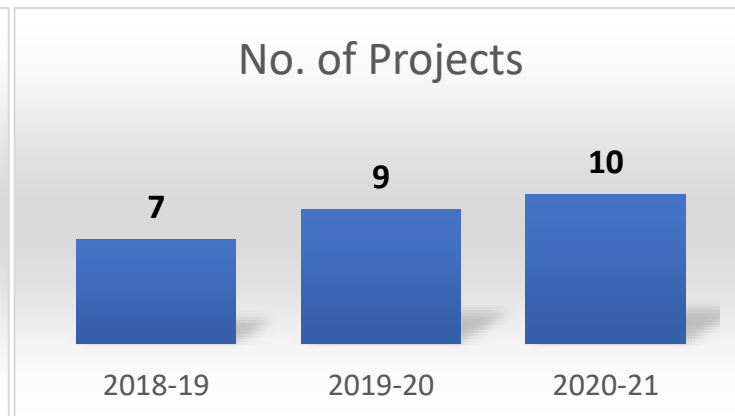
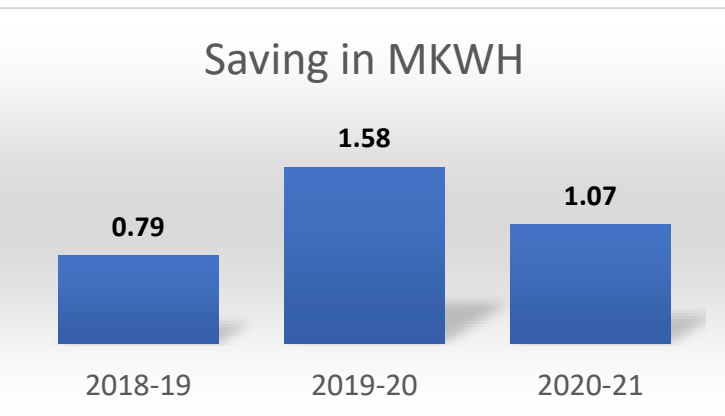
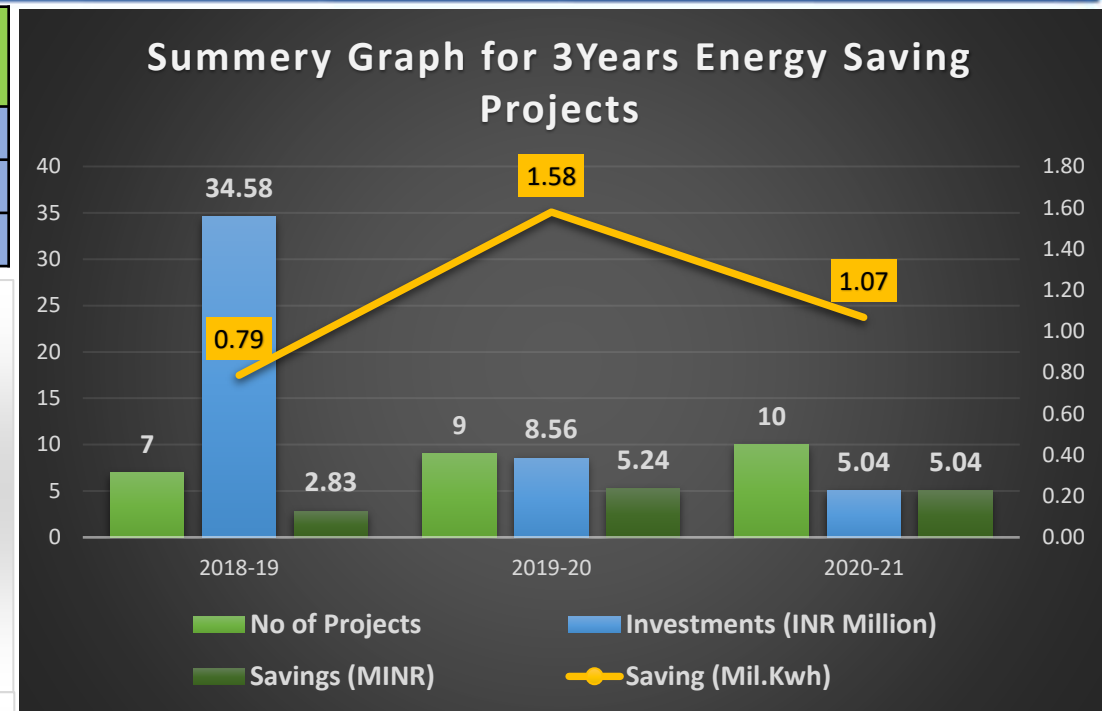
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MAJOR E-CON PROJECTS FOR FY 2021-22

Sr. No.	Title of Project	Annual Electrical Saving	Investment	Payback	Comment
		(kWh)	(Rs in Million)	(Months)	
1	reduce energy consumption by installation of Motion sensor in 50 nos. of light.	4320	0.005	2.94	Technology Up-grade
2	reduce assembly area air conditioner energy consumption by procuring energy efficient air conditioner at unit-5	160494	2.3	36.36	Technology Up-grade
3	Reduce energy consumption by installation of drive in cooling tower fan and STP Air blower.	12484	0.044	8.95	Technology Up-grade
4	Reduce energy consumption by replacing CFL lights to LED in canteen area, locker room, washroom, staircase.	27648	0.005	0.46	Technology Up-grade
5	Generation of renewable energy i.e solar power generation	976639	0	0	Renewable energy Generation
6	Energy saving by utilizing cell fans instead of AC after regular shift 4:15 PM.	282963	0.32	2.87	Innovative Thinking
7	Reduce energy consumption by manufacturing moulds with higher cavities to reduce machine loading time energy saving.	66560	0	0	In-House work
8	Energy saving by installation of LED street lights in place of conventional street lights	8985	0.09	25.47	Technology Up-grade
9	By increasing utilization of thyristor based APFC panel and installation of the Active filter in the panel (servo control machine) (reduction of electricity by 2%)	504313	1.6	8.05	Technology Up-grade
10	Energy efficient sludge pump set installation in both STP	720	0.07	246.62	Technology Up-grade
Total		2045126	4.434		

ENERGY SAVING PROJECTS IMPLEMENTED IN LAST 3 YEARS

Year	No of Projects	Investments (INR Million)	Saving (Mil.Kwh)	Savings (MINR)
2018-19	7	34.58	0.79	3.6
2019-20	9	8.56	1.58	5.23
2020-21	10	5.04	1.07	5.04



Approach : Improvement the plant energy Quality helping of reducing wastage due to higher THD's

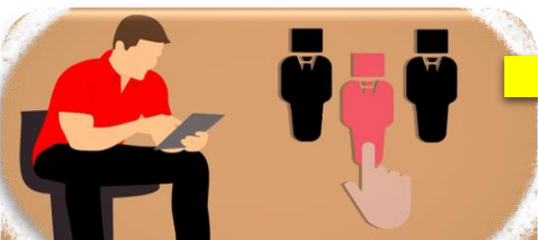
Before

harmonics present in the electrical System

We have idea for conducting the Harmonic study from 3rd Party Vendor.



Discussed in Internal Meeting



Searched For Vendor



We understood the process of the harmonic study, but the quote received was high

Incomer 1 Factory Building
Transformer 1 2000KVA, 11kV / 433V, 104.97A / 2666.75A Z: 6.55%
Condition - Capacitor ON
Recording Period - 07-Jul-18 >00:00 PM to - 08-Jul-18 >08:00 AM

Parameters	Min			Avg			Max		
	L1-L2	L2-L3	L3-L1	L1-L2	L2-L3	L3-L1	L1-L2	L2-L3	L3-L1
Voltage	432.20	433.60	433.80	441.66	443.80	443.35	450.60	452.80	452.20
Current	L1	L2	L3	L1	L2	L3	L1	L2	L3
	500.8	508.8	510.2	975.30	913.91	980.21	1296.00	1208.80	1285.60
Power (kW)	290.51			721.75			933.93		
Active Power (kVA)	386.72			734.34			960.49		
Reactive Power (kVAR)	258.80			9.18			213.09		
Power Factor	0.75			0.97			1.00		
PF (DPF)									
Voltage THD%							2.10		
Current THD%							18.00		

16 % Harmonics present in the system

In House Harmonic Study

After



We have done some brain Storming

We have done some discutiion with expert vendor and they suggests us to install Active filter



Take support from Purchase Team

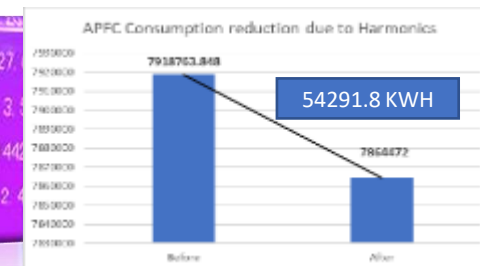


We have installed Active filter in the LT room and checked Energy Quality

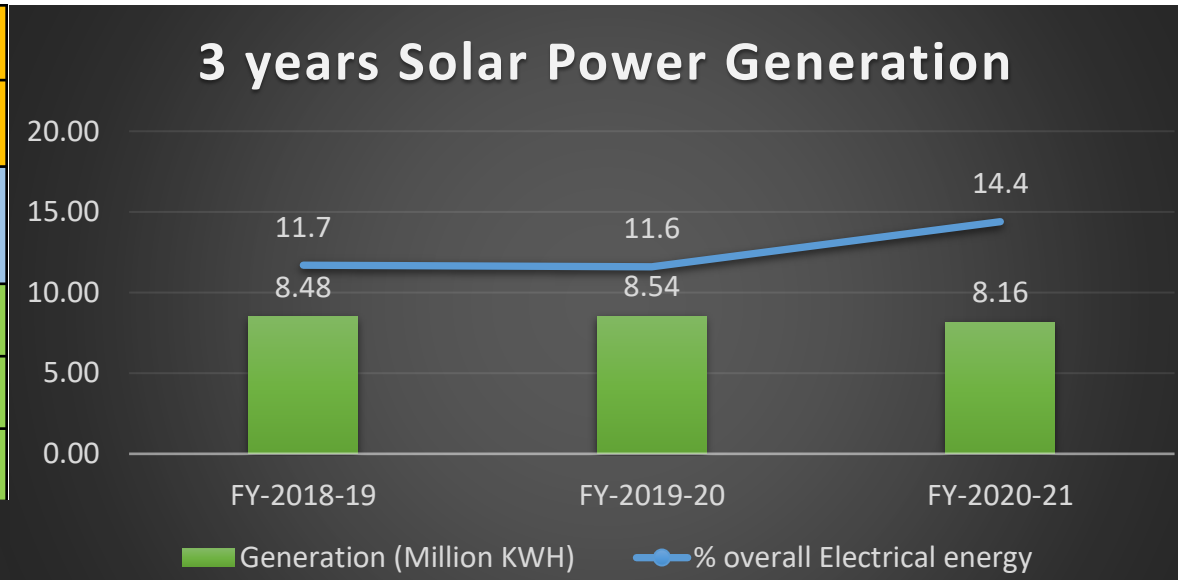
Vendor done site visit and checked energy quality from there side and supply us a 100 Amp Active filter

Vrms	R/S/T (A)	427.8	431.0	427.8
THDu	R/S/T (%)	3.3	3.3	3.3
I rms	R/S/T (A)	1577	1582	1400
THDi	R/S/T (%)	2.8	2.9	2.4

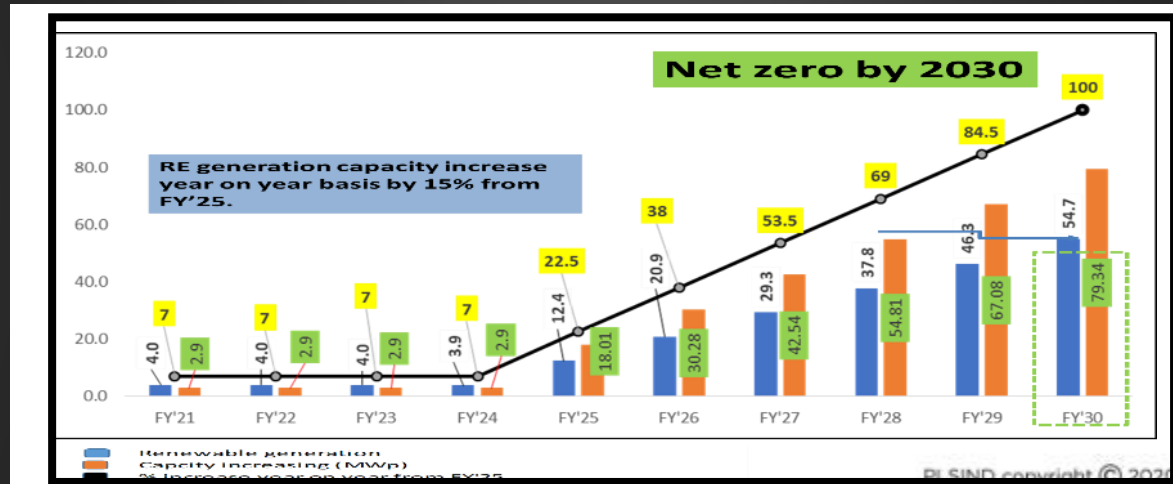
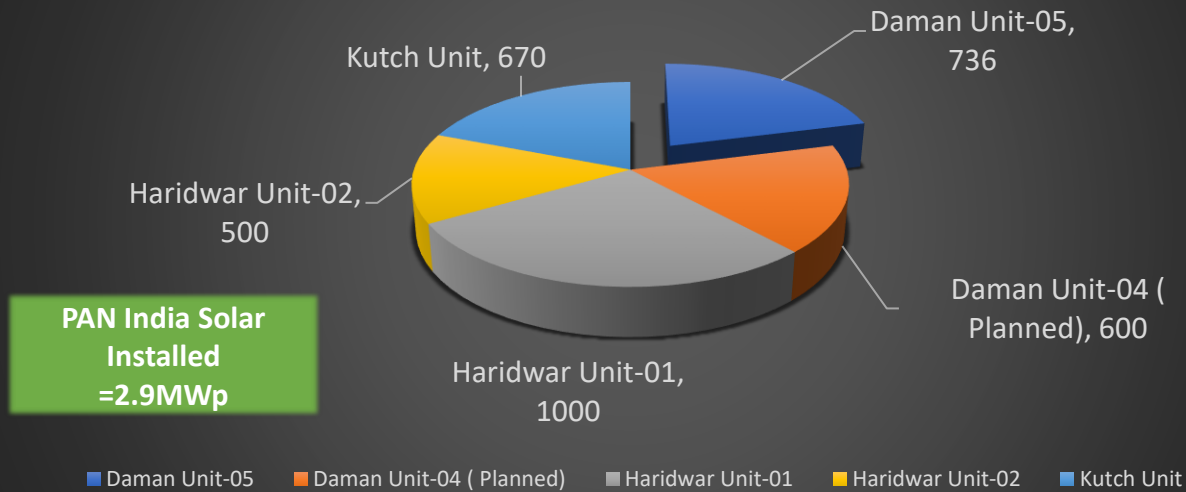
3.3 % Harmonics present in the system. Which is within limit.



Type		Solar Power		Capacity	736 KWp	Onsite
Investment			6 MINR	Make-Panasonic		
Year	Technology	Type of energy	Onsite / Offsite	Installed Capacity	Generation (Million KWH)	% overall Electrical energy
FY-2018-19	Solar Power Plant	Solar	Onsite	736 kWp	8.48	11.7
FY-2019-20	Solar Power Plant	Solar	Onsite	736 KWp	8.54	11.6
FY-2020-21	Solar Power Plant	Solar	Onsite	736 KWp	8.16	14.4



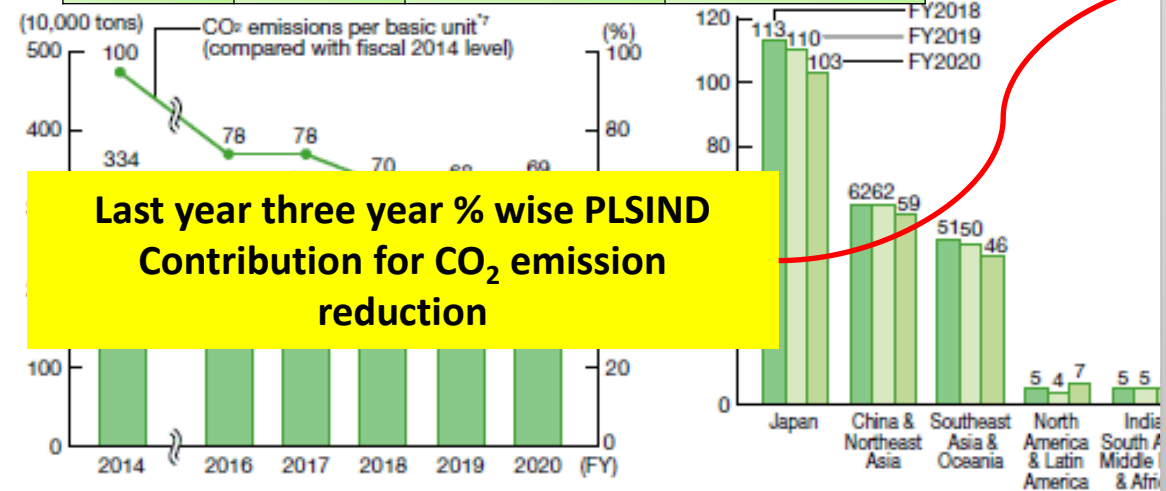
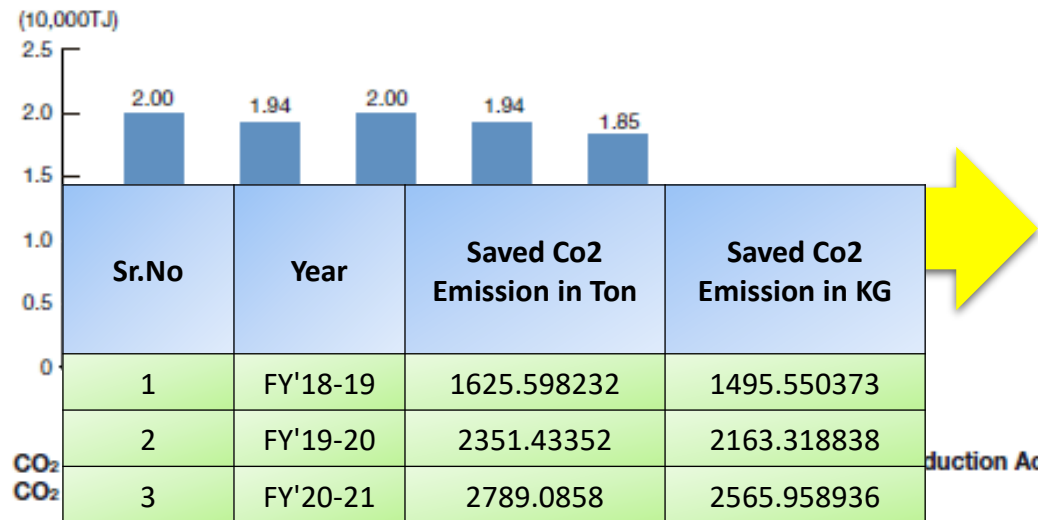
PLSIND Pan India Solar Installation



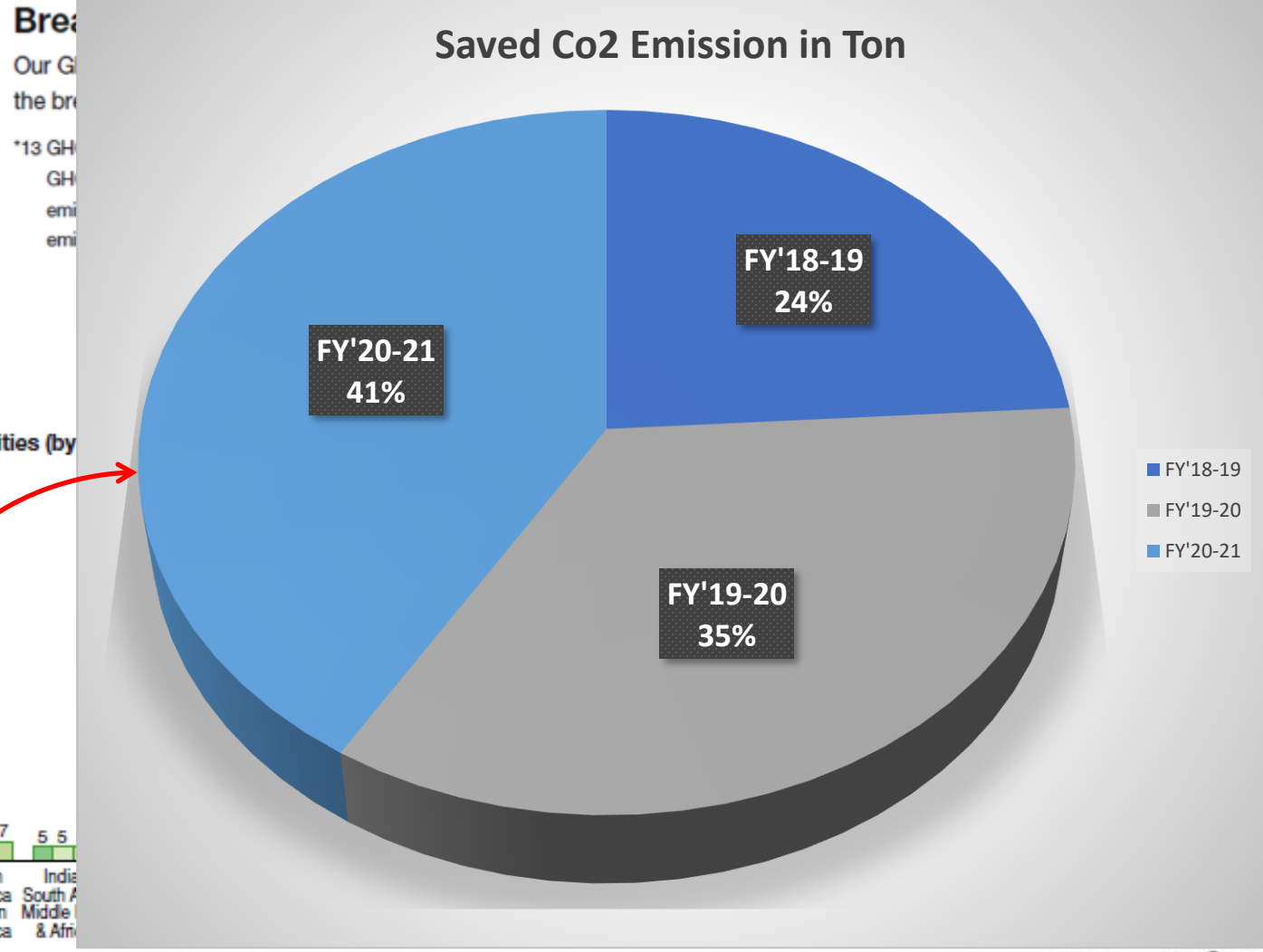
WASTE UTILIZATION AND MANAGEMENT

Year	2018-2019			2019-2020			2020-2021			
No	Type of waste generated	Quantity of waste generated (MT/year)	Disposal method	Type of waste generated	Quantity of waste generated (MT/year)	Disposal method	Type of waste generated	Quantity of waste generated (MT/year)	Disposal method	
1	Wastes OR Residue Containing oil	3.328	Send to Authorized TSDF Site - M/s. GEPIL	Wastes OR Residue Containing oil	2.426	Send to Authorized TSDF Site - M/s. GEPIL	Wastes OR Residue Containing oil	2.019	Send to Authorized TSDF Site - M/s. GEPIL	
2	Used Oil	8.93	Send to Authorized Recycler - M/s. Bombay Barrels Supply Co.	Used Oil	5.547	Send to Authorized Recycler - M/s. Bombay Barrels Supply Co.	Used Oil	1.973	Send to Authorized Recycler - M/s. Bombay Barrels Supply Co.	
3	Empty Discarded Containers	1.88	Send to Authorized Recycler - M/s. Rhythm Chemicals	Empty Discarded Containers	1.537	Send to Authorized Recycler - M/s. Rhythm Chemicals	Empty Discarded Containers	0.974	Send to Authorized Recycler - M/s. Rhythm Chemicals	
4	Waste Thinner & Flux	0.37	Send to Authorized TSDF Site - M/s. GEPIL	Waste Thinner & Flux	0.122	Send to Authorized TSDF Site - M/s. GEPIL	Waste Thinner & Flux	0.073	Send to Authorized TSDF Site - M/s. GEPIL	
5	Waste Resin	0.72	Send to Authorized TSDF Site - M/s. GEPIL	Waste Resin	0.2	Send to Authorized TSDF Site - M/s. GEPIL	Waste Resin	0.29	Send to Authorized TSDF Site - M/s. GEPIL	
6	Waste Coolant	1.43	Send to Authorized TSDF Site - M/s. GEPIL	Waste Coolant	1.8	Send to Authorized Recycler - M/s. Bombay Barrels Supply Co.	Waste Coolant	1.4	Send to Authorized Recycler - M/s. Bombay Barrels Supply Co.	
7	Waste Batteries	0	Buy Back to Original Manufacture / Send to Send to Authorized Recycler	Waste Batteries	0	Buy Back to Original Manufacture / Send to Send to Authorized Recycler	Waste Batteries	0	Buy Back to Original Manufacture / Send to Send to Authorized Recycler	
Total Water Consumption			31538 KL	Total Water Consumption			28393 KL	Total Water Consumption		
STP Treated Waste Water Used for Gardening			22774 KL	STP Treated Waste Water Used for Gardening			20385 KL	STP Treated Waste Water Used for Gardening		

Energy Consumption in Production Activities



Last year three year % wise PLSIND Contribution for CO₂ emission reduction



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100% water coolers of factory premise are replaced by eco friendly gas water coolers as a sustainable organization.

	Thought for green building supply chain									
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70% Air-conditioners replaced with eco-friendly gas.

2	Communication to supplier	Status								
		Plan								
		Status								

Only Energy efficient products are being procured in factory as a energy efficient factory.

4	Proper policy drafting	Plan								
		Status								

With each purchase order ,it is communicated to vendors to supply only energy efficient product ,environmental friendly and safe products.

	50 % implementation for inspection at vendor's premises									
--	---	--	--	--	--	--	--	--	--	--

For supply of any item by vendor , with PUC and License ,vendor vehicles are not allowed in plant area.

		Plan								
		Status								

No plastic allowed having less than 50 micron thickness.

8	Continual improvement	Plan								
		Status								



GREEN SUPPLY CHAIN POLICY

As an integral part of our business philosophy and core values, we at Panasonic Life Solutions India Pvt. Ltd., are committed to achieve excellence in green supply chain mechanism.

To fulfil this commitment, we shall provide information & resources to integrate green supply chain practices in all our activities.

We will have special focus on:

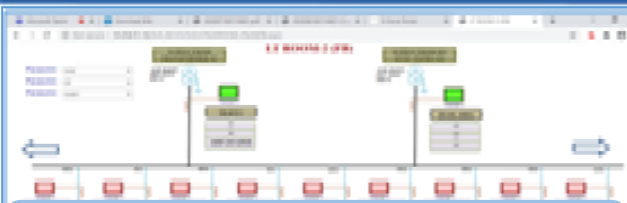
- Procurement of energy efficient and eco friendly products.
- Continual improvement in manufacturing process, to reduce energy consumption.
- Comply with all relevant statutory and other requirements applicable to green supply chain mechanism.
- Set and review objectives and targets for continual improvements related to green supply chain.
- Development of supplier, transporters, dealers and other associate's competency toward resource conservation and energy conservation.
- Promoting awareness through training on energy conservation and green supply chain mechanism among all stockholders.
- Strive for sustainable partnership.
- Reduce ,Reuse and Recycle.

For Panasonic Life Solutions India Pvt. Ltd.

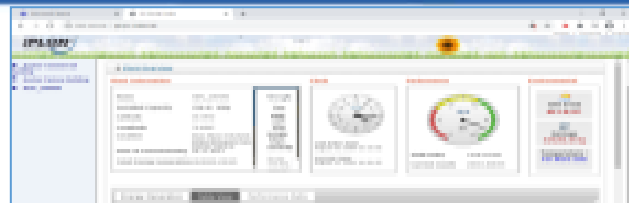
Mr. Dinesh Agarwal
Joint Managing Director & Occupier

Date:

MONITORING



Online energy management system is available.



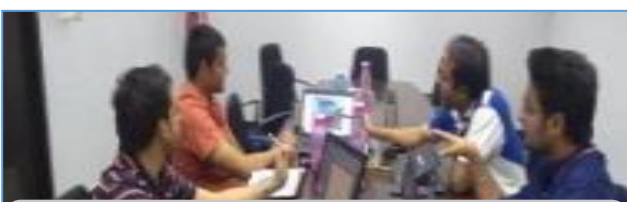
Online Solar power generation system is available.

			Plan	1st Week	2nd Week	3rd Week
1	FB Ground	Air-leakage checking	Injection Molding	Monthly		
			Metal production	Monthly		
			M & T	Monthly		
			Compression molding	Monthly		
2	FB First floor	Air-leakage checking	Vision	Monthly		
			ROMA	Monthly		

Daily energy waste observation is being monitored and recorded



Energy review meeting is chaired by MD for Global Level



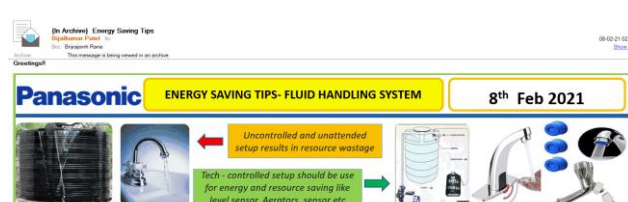
Energy review meeting is chaired by Factory Manager at Plant Level

Part No	Apparatus	Part Group	Component/Parameter	Equipment Name	Physical Parameter (unit)	Test Plan Method (MTR or Specification)
005-0010-04-001	005-0010-04-001	Other Equipment	Check & Maintenance	Check & Maintenance	0-Range check program	MS Manual
005-0010-04-002	005-0010-04-002	Other Equipment	Check & Maintenance	Check & Maintenance	0-Range check program	MS Manual

Separate investment budget of 4.4 MINR is allotted for energy saving projects for FY-21.



Energy awareness programme is organized on regular basis FY'20 716 Manhour Achieved



Energy Saving Tips, Environment Bulletin & safety survey Circulation through Mass Mail

Automation Development_Daman								
	FY-15	FY-16	FY-17	FY-18	FY-19	FY-20	FY-21 (Plan)	FY-21 (Actual)
No. of M/C Development	19	11	5	7	3	2	6	1
Manpower Saving	36	17	43	126	47	37	67	15
Investment(Mill)	21	9	13	25	18	12	21	6
Space Saving(Sq. M)	0	0	44	90	38	34	60	14



Star Energy Saving Performer & Best Energy Saving Department award scheme for continual Energy improvement

Energy Saving projects are being executed through kaizens also- Refer next slide

Approach : Reduction in energy cost by using table fan after office hour i.e after 4:15 PM

Before

At assembly floor approx. 150 to 200 persons work after 4:15 PM to 07:00 AM depend upon the prod. requirement. All ACs of the area kept ON for ventilation during night shift as no partition available and man-power were scattered.



Manpower is less but All the AC are running

energy consumption is higher due to use of AC.

Description	Before
Daily Average energy consumption (12 HRS)	1063.20999
Monthly Average energy consumption (KWH)	26580.24975
Yearly Average energy consumption (KWH)	318962.997
Electricity Cost (4.73 INR/KWH)	4.73
Yearly energy cost	1508694.976

How can we reduce Energy consumption by AC when manpower is less in the area



After

We have Provided Minio fan in the assembly area at cell table to use after 04:15 PM and switch off all AC.



Brain Storming & Internal Discussion



Provide Fan's for the Ventilation After 4:15 PM at Assembly Section

We have done discussion with Fan BU and get the suggestion to install Minio fan because it take less power and cab be provide on cell table.

We have Done internal transfer of Minio fan from Fan BU and provided at assembly floor



Description	Fan
Daily Avr energy consumption (12 HRS)	120
Monthly Average energy consumption (KWH)	3000
Yearly Average energy consumption (KWH)	36000
Electricity Cost (4.73 INR/KWH)	4.73
Yearly energy cost	170280

Expected Reduction

After using table fan in night shift.
 $1508694.9 - 170280.0 = 1338414.9/-INR.$

Previous Cost when AC used at Night Cost – 1508694.9INR / Yr

Replacement of the Motor with Energy Efficient Motor

720 KWH/ Year Saving

Identification of less Utilized area and installation of motion Sensor.

4320 KWH/ Year Saving

Inhouse installation of VFD's by inhouse team

12484 KWH/ Year Saving

Replacement of Conventional Street Light's with the LED Street Lights

8985 KWH/ Year Saving

Manufacturing of Higher Cavity moulds for reducing the loading time

66560 KWH/ Year Saving

Running of Single Grinder for grinding of runners in place of 2 nos of grinder

10800 KWH/ Year Saving

Conversion of Manual Machine to Semi Automatic Machine

2075 KWH/ Million Piece

TOTAL  ACTIVITY = 7 Nos

TOTAL SAVING (IN KWH) = 103842 KWH / Year

Section Wise Capturing of SEC in KWH/ MT Started as suggested by CII.

Automation Implementation of Energy Kaizen from Other Industries .

IFC System Installed for Air Compressor at the PLSIND U-5 Premises as per suggestion received From CII

Gain More Knowledge for Green Supply Chain management.

Zero Waste Land field certification

GreenCO Certification

Resource and Energy Management form APEX INDIA award & Golden Peacock Award



PLSIND Unit—05 is EnMS Certified Since Nov-17 & it's Transition form ISO 2011 to ISO 2018 has been Implemented in Oct'20.

EnMP are being taken and implemented on regular basis by each department

Regular Energy review and monitoring is being done

Energy awareness programmes are being planned on regular basis

More Emphasis given for procuring energy efficient products.

Compliance related to EnMS is being strictly maintained

1 % Budget kept for the Energy Saving project & IoT's on total turnover of the Factory

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1



1st Prize National Energy Conservation Award 2019 BEE by Ministry of Power, Govt. of India

2



Awarded by CII for Best Energy efficient unit for Daman Unit-5

3 & 4



Awarded by Apex India Foundation
 1. Best waste management to Daman U5 and
 2. Best Water management Haridwar U2.

5



Awarded by Golden Peacock awards for Best Environment Management System to Daman U4

Thank You

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