

PRESENTATION ON NATIONAL ENERGY AWARD FOR  
EXCELLENCE IN ENERGY MANAGEMENT

# Panasonic

PANASONIC LIFE SOLUTIONS INDIA PVT LTD.

Unit-01, Haridwar

Mr. Ashish Singh

Head- Facility Management & EHS

**CII Certified Energy Professional**

Mr. Chandrashekhar Singh  
AGM -Facility Management



Mr. Susanta Dwivedi  
AM -Facility Management



Mr. Lalit Kumar  
AM -Facility Management



Presenters  
Susanta Dwivedi-AM Facility  
Management  
Lalit Kumar –AM Facility  
Management

- Company profile and Factory information.
- Energy Policy
- Factory Energy flow diagram
- Production and Energy Data
- SEC and % improvement data
- Major E-Con project planned for Fy'20-21
- Last three year Energy Saving projects
- Innovative projects
- Renewable Energy details
- Waste Data
- GHG information
- Green Supply management activity
- Team work and Employee Engagement
- Monitoring
- Kaizen by associates
- ISO-50001
- Achievements.

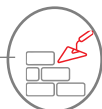
# Company Introduction

# Panasonic

A global mega brand that has been a force in the appliances & electrical goods space



Established 1918



Revenues Billion USD 72.04



Organization Strength 274,000



# Panasonic

Life Solutions India Pvt. Ltd.

A global enterprise that manufactures cutting edge electrical products

## ANCHOR

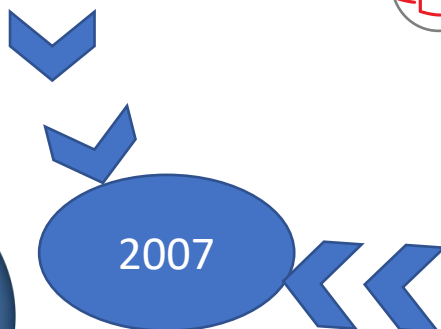
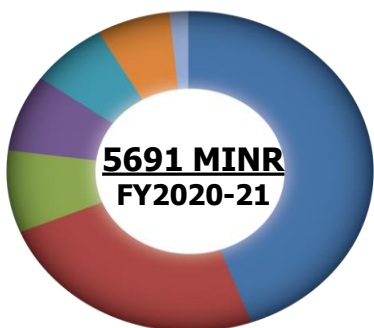
Established 1963



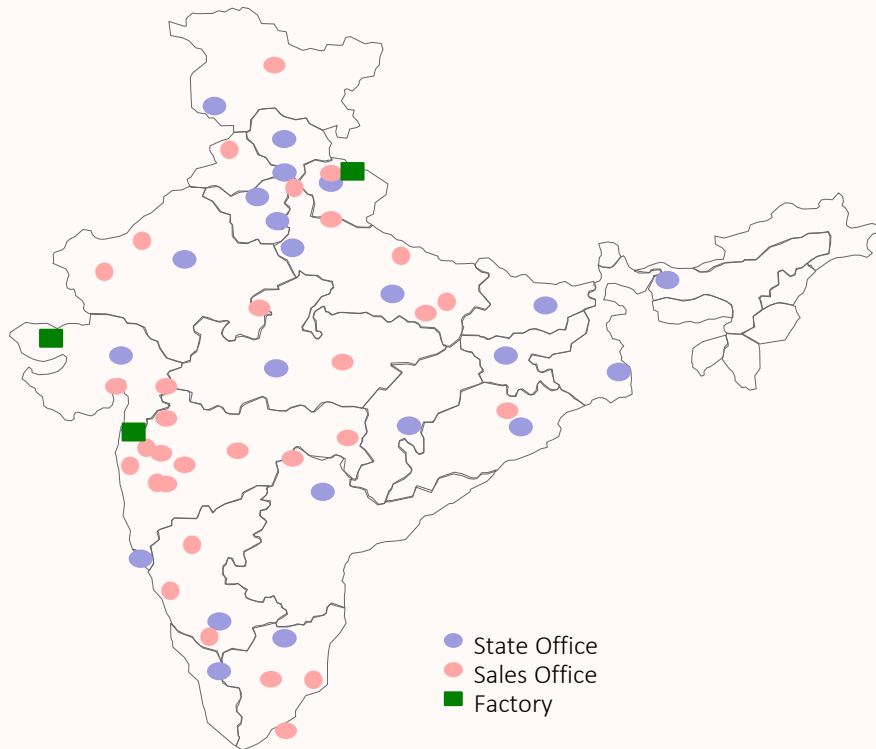
Revenues Million USD 501+



Organization Strength 9000+



## MANUFACTURING FACILITIES



**SALES OFFICES**

**4 Regions & 27 Offices**



**MANUFACTURING**

**3 Areas & 7 Factories**



**HARIDWAR FACTORY**

- Wiring Device
- Switchgear



**DAMAN FACTORY**

- Wiring Device
- Ceiling Fan
- Wires & Cables & Tapes

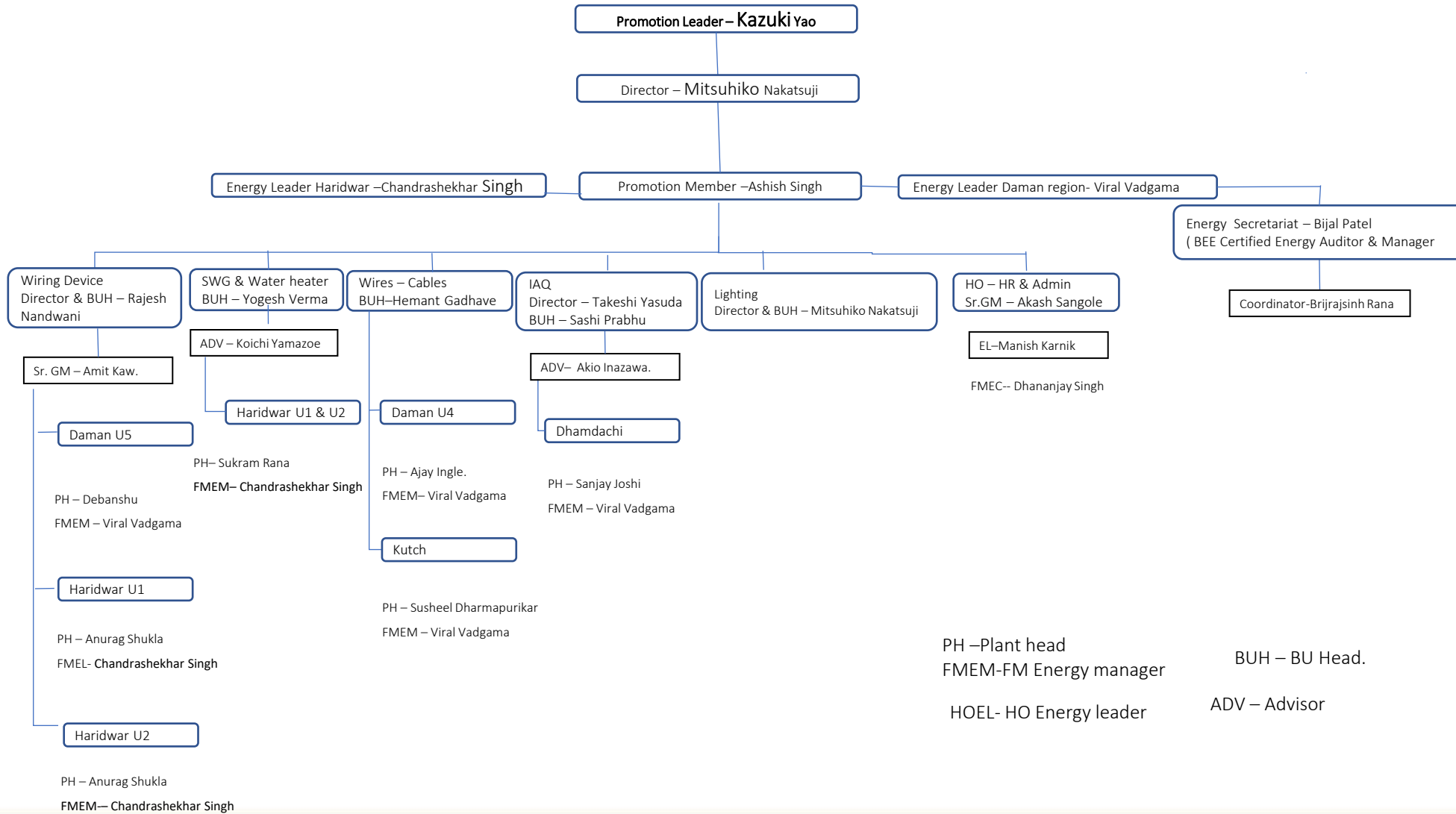


**KUTCH FACTORY**

- Wires & Cables & Tapes
- Lighting

- **NABL accredited laboratory**
- **ISO 50001: 2018 certified for energy Management** · **RoHS Compliant products, QMS ,EMS and OHSAS Certified Units**

# PLSIND Organogram\_Energy Cell



Continuous monitoring and controlling energy consumption.

Management commitment for adopting energy efficient technology, product and design

**Panasonic**

### ॐर्ज नीति

अमारा व्यवसायिक दर्शन अने मूळ मूल्योना अभिन्न अंग तरिके, अमे पेनासोनिक लाइफ सोल्युशन्स इन्डिया प्रा. लि. ॐर्ज संरक्षणमा श्रेष्ठता प्राप्त करवा माटे प्रतिबद्ध छीमे.

आ प्रतिबद्धताने परिपूर्य करवा माटे, अमे अमारी न्धो प्रवृत्तिओमां श्रेष्ठ ॐर्ज संरक्षण प्रथाओओने संकबित करवा माळित अने संसाधनो प्रदाम करीछुं. अमाठ विशेष ध्यान आना पर रवेछे:

- सतत हेमरेष अने ॐर्ज वपराश नो नियंत्रण करवुं.
- उत्पादन प्रक्रियांमां ॐर्ज नो वपराश घटाडवा माटे, सतत सुधारी करवो.
- ॐर्ज ना उपयोग, वपराश, अने कार्यक्षमता पर वाजु घता तमाम संबंघित वैधानिक अने अन्य आवश्यकताओनुं पाबन करवुं.
- ॐर्ज प्रथाओओ संबंघित सतत सुधाराओ माटे उद्देश्यो अने बक्ष्योने नळी करी तेमनी समीक्षा करवो.
- ॐर्ज कार्यक्षम उत्पादन अने सेवाओओनी पुरीदा द्वारा ॐर्ज कार्यक्षमता माटे श्रेष्ठ शक्य तऽनीकी डिजाइन, उत्पादन अने सेवाओओ अपनाववो.
- तमाम कर्मचारीओमां ॐर्ज ब्याव अंनेनी ताचीम द्वारा जागृतिने प्रोत्साहन आपवुं.

### ऊर्जा नीति

हमारे व्यापार दर्शन और मूल मूल्यों के एक अभिन्न अंग के रूप में, हम पेनासोनिक लाइफ सोल्यूशन्स इंडिया प्राइवेट लिमिटेड ऊर्जा संरक्षण में उत्कृष्टता प्राप्त करने के लिए प्रतिबद्ध हैं।

इस प्रतिबद्धता को पूरा करने के लिए, हम अपनी सभी गतिविधियों में सर्वोत्तम ऊर्जा संरक्षण प्रथाओं को एकीकृत करने के लिए सूचना और संसाधन प्रदान करेंगे। हमारा विशेष ध्यान इस पर रहेगा :

- ऊर्जा की खपत की निरंतर निगरानी और नियंत्रण।
- ऊर्जा की खपत को कम करने के लिए निर्माण प्रक्रिया में निरंतर सुधार।
- ऊर्जा उपयोग, उपभोग और दक्षता के लिए लागू सभी प्रासंगिक वैधानिक और अन्य आवश्यकताओं का अनुपालन।
- ऊर्जा प्रदर्शन से संबंधित निरंतर सुधार के लिए उद्देश्यों और लक्ष्यों को निर्धारित करना और उनकी समीक्षा करना।
- ऊर्जा कुशल उत्पाद और सेवाओं की खरीद द्वारा ऊर्जा दक्षता के लिए सर्वोत्तम व्यवहार्य प्रौद्योगिकी डिजाइन, उत्पाद और सेवाओं को अपनाना।
- सभी कर्मचारियों के बीच ऊर्जा संरक्षण पर प्रशिक्षण के माध्यम से जागरूकता को बढ़ावा देना।

### 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.

*K. Y.*

Kazuki Yao  
Managing Director (Occupier)  
Date: 01.05.2021

Continual improvement is process to reduce energy performance

Energy conservation awareness to all employees

# Energy Distribution Plant

1000 KWP Roof Top Solar Plant

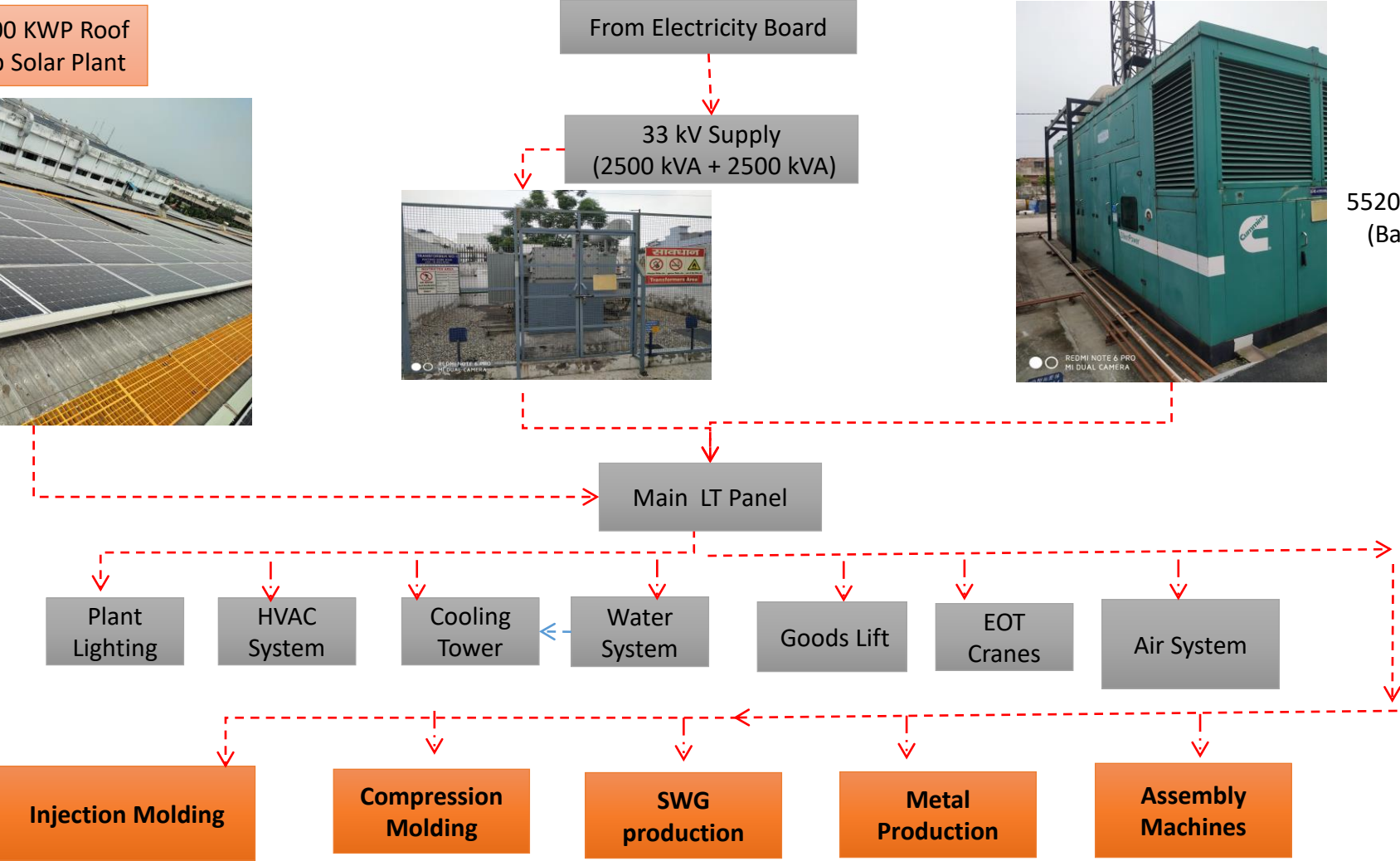


From Electricity Board

33 kV Supply  
(2500 kVA + 2500 kVA)



5520 kVA Capacity DG Sets  
(Backup Power Source)



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## Impact

1. Impact on annual production performance Increased by 11%
2. Impact on specific energy consumption (SEC) Decreased by 10 %
3. Internally energy awareness training programmer is organized
4. Some project has postponed due to Considering Covid-19 Guideline
5. Optimization utility run as per availability of production team.
6. Installation of Renewal Energy(Solar -1000KWp) to reduce CO2



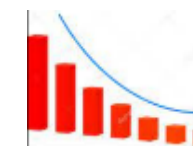
Good



Good



Good



Not Good



Good



Good

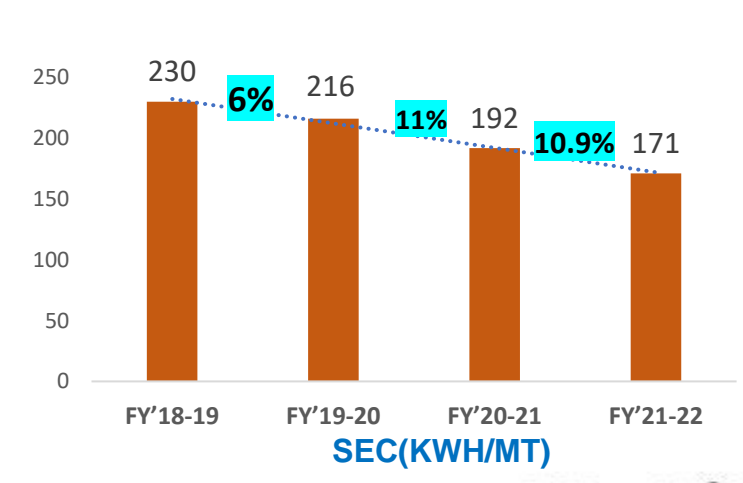
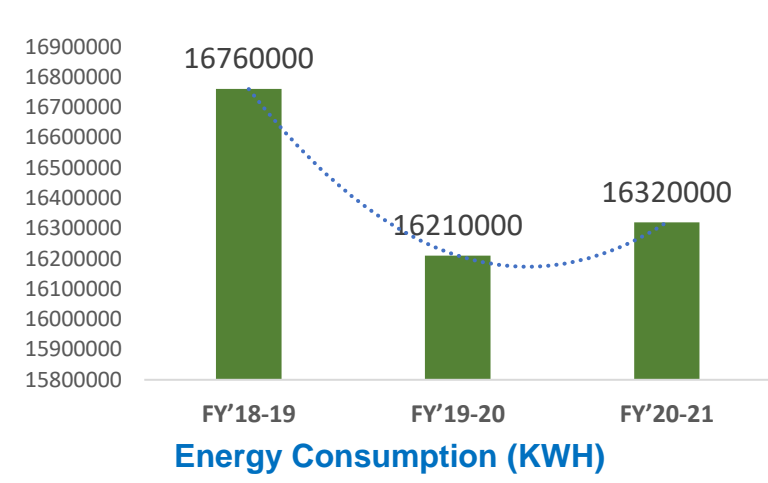
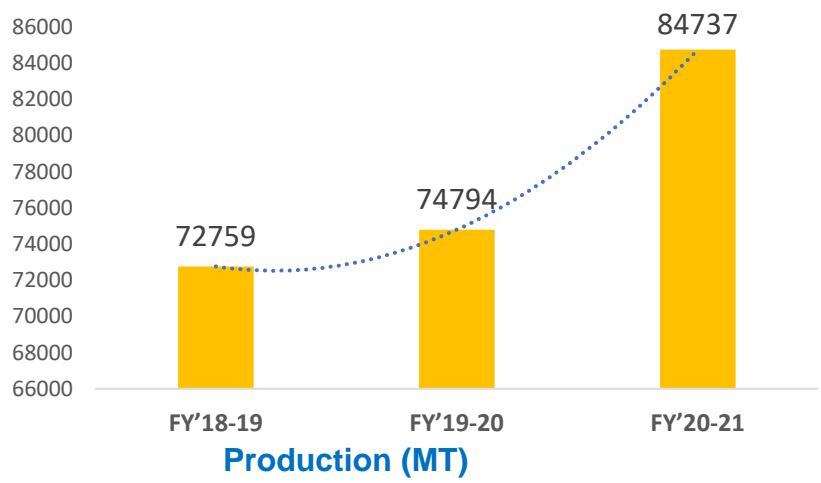
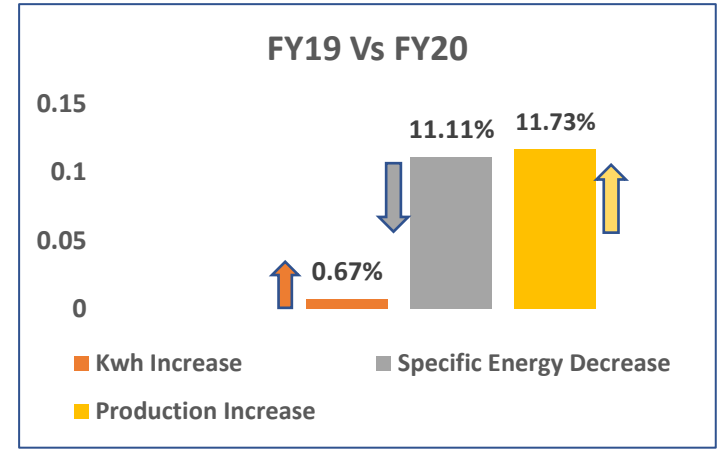
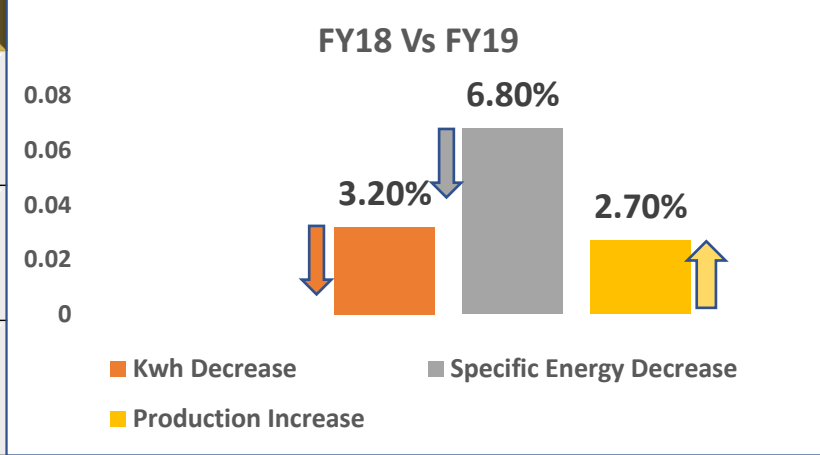
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# Specific Energy Consumption Plant

Year	Total KWH consumption	Production in MT	SEC in KWH/MT
FY'18-19	16760000	72759	230
FY'19-20	16210000	74794	216
FY'20-21	16320000	84737	192

## % Comparison Trend of Unit consumption/Production/SEC



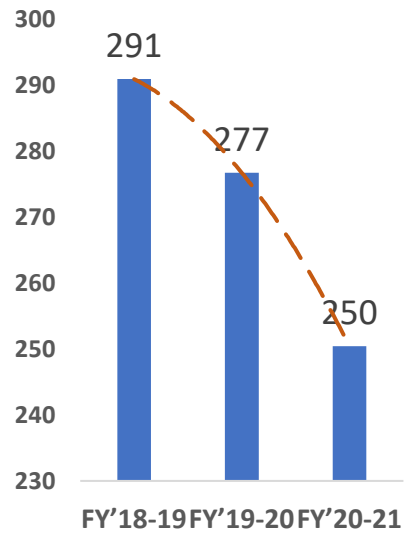
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# Specific Energy Consumption :Section Wise

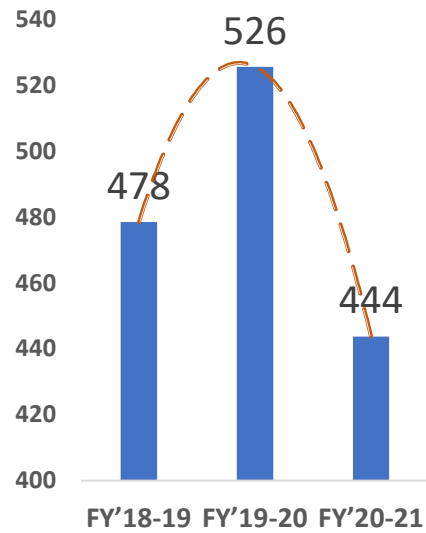
Year	SEC(KWH/MT)				
	I . Moulding	C.Moulding	Metal section	Assembly	SWG
FY'18-19	291	478	20	581	4315
FY'19-20	277	526	17	304	6110
FY'20-21	250	444	12	152	3451

## Reason for Variations in SEC :

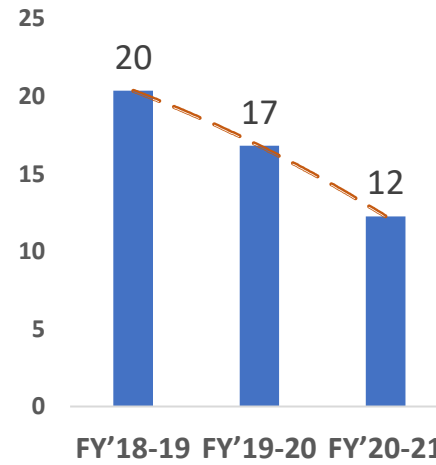
- **C-Moulding** :SEC Increase by 9.12% in FY19 due to less production but basic facility run (Ex: Air washers , Dust collector )
- **SWG** :SEC Increase by 29 % in FY19 due to less production but basic facility run (EX: Chiller , Air washer ,HVAC )
- **Injection ,metal & Assembly** : SEC Decreases year by year considering energy saving activities & production increasing trend



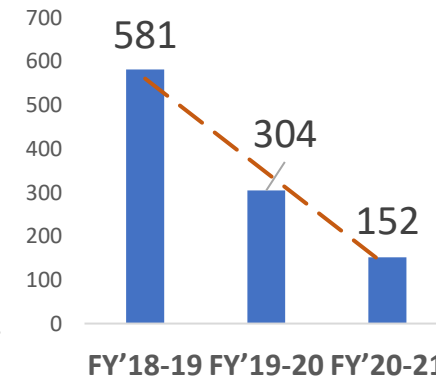
Injection Moulding



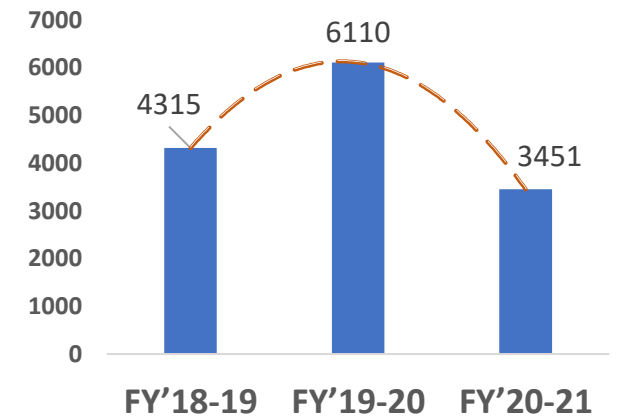
Compression Moulding



Metal Section



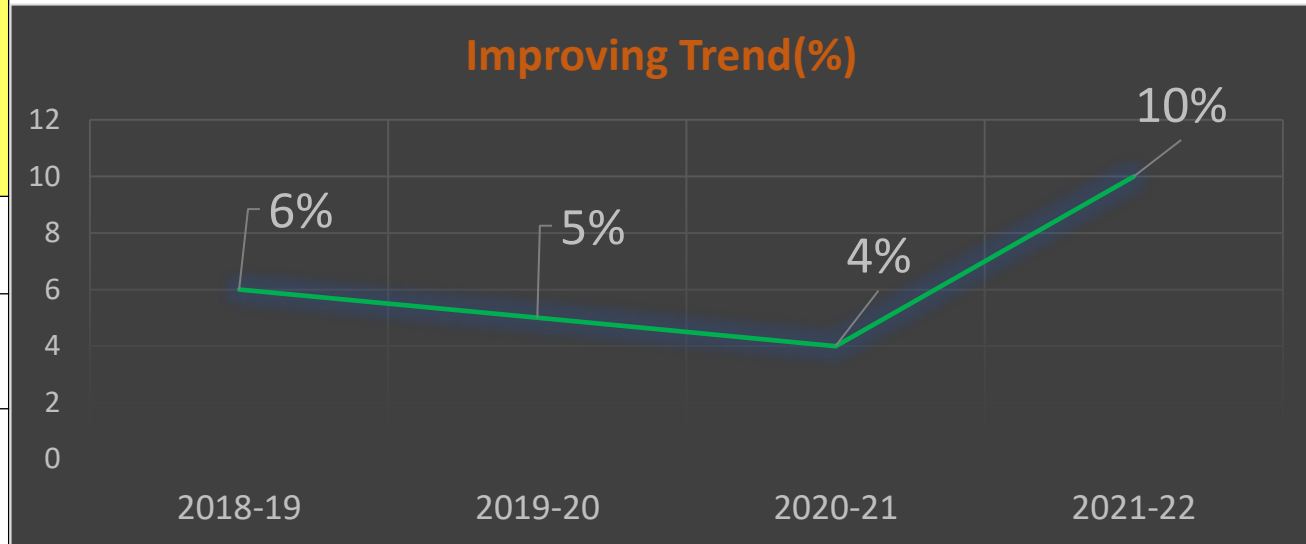
Assembly



SWG

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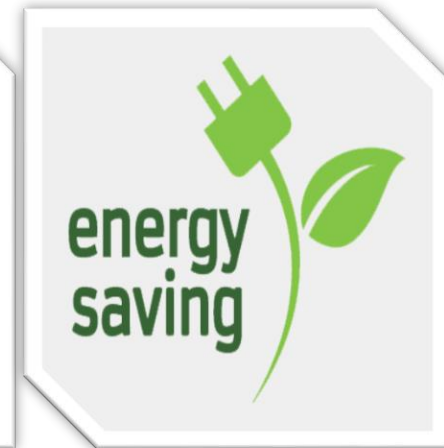
Year	KWH Per Annum	KWH_Saving	KWH_Saving(%)
2018-19	16760000	1004460	6
2019-20	16210000	687975	5
2020-21	16320000	620672	4



### Major Improvement Activities Carried Out :(FY 20-21)

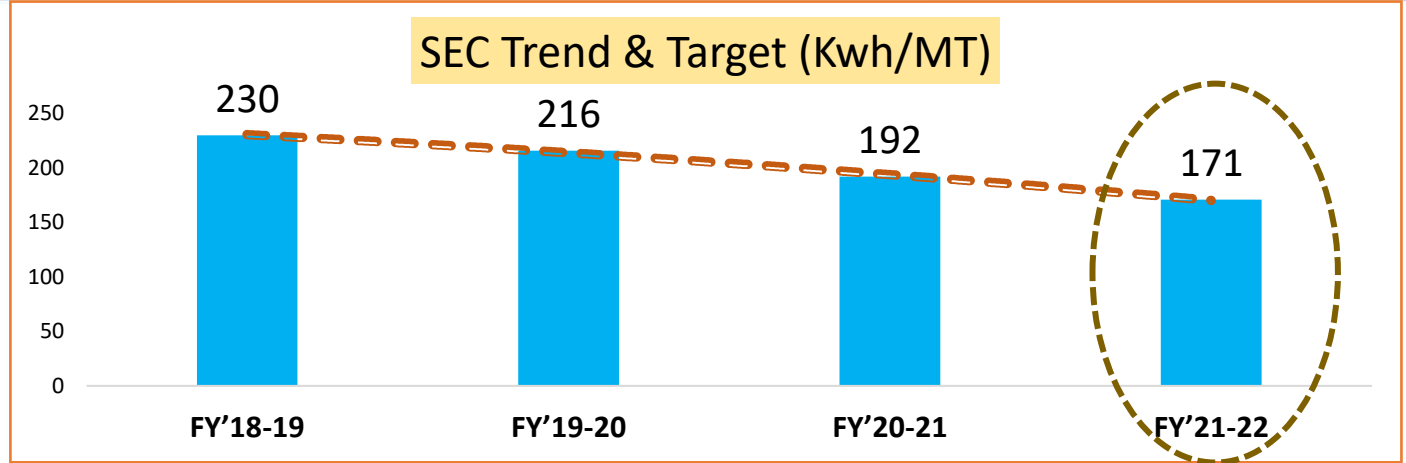
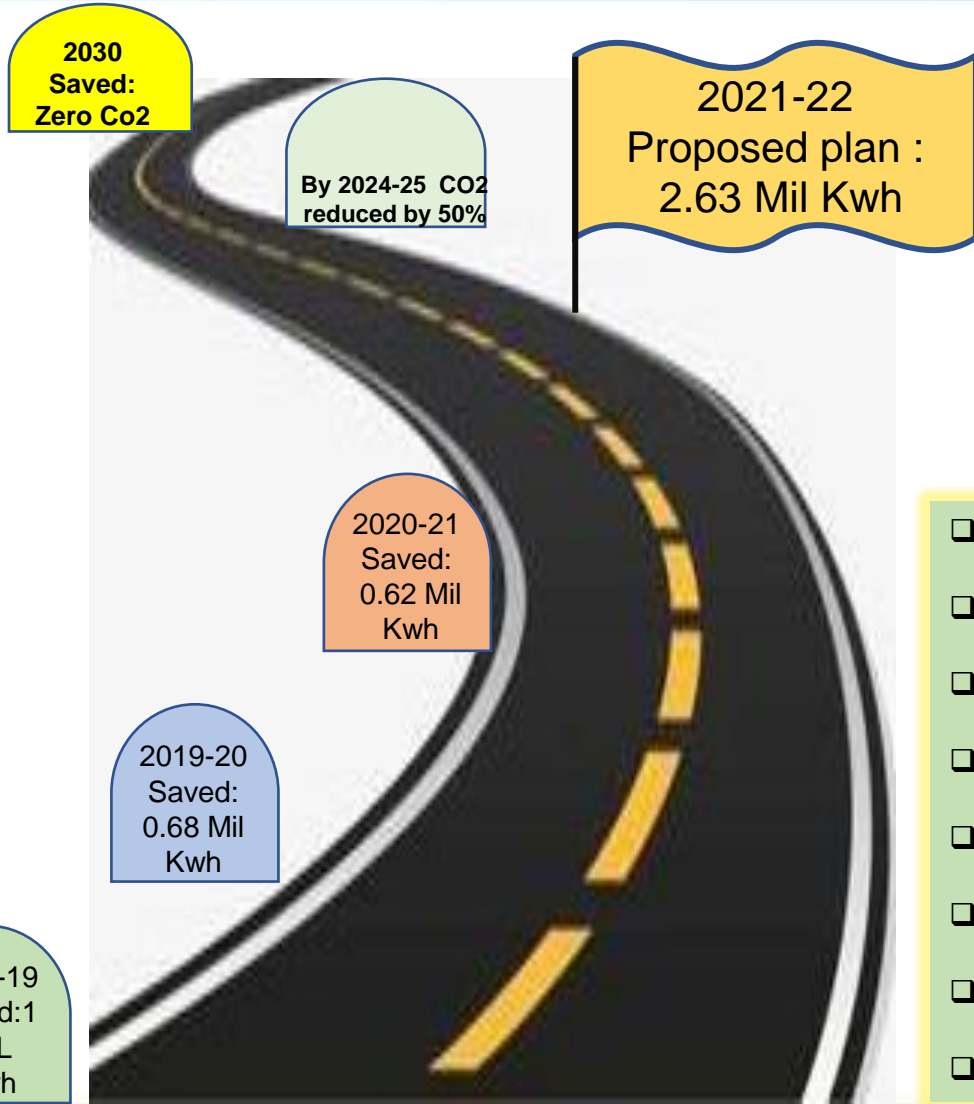
- Replacement of Conventional type APFCR panel to Thyristor based Electronic switching APFCR Panel.
- Utilization of Renewable Energy by Install 1000KWp Solar Roof Top Power plant.
- Replacement of Conventional light to LED light.
- Implement VSD type compressor.
- Replace conventional type starter to VFD in Air washer.
- Replace conventional type starter to VFD in Cooling Tower pumps.
- Implement All Electric I molding machine by Hydraulic Machine.
- Replace Dehumidifier to Centralize Conveying System
- Modification in Chiller line by operation of 1 set Chiller in place of 2 Set chiller.

**1000 KWp  
Roof Top  
Solar  
Renewable  
Energy  
Implemented  
in Apr-2021**



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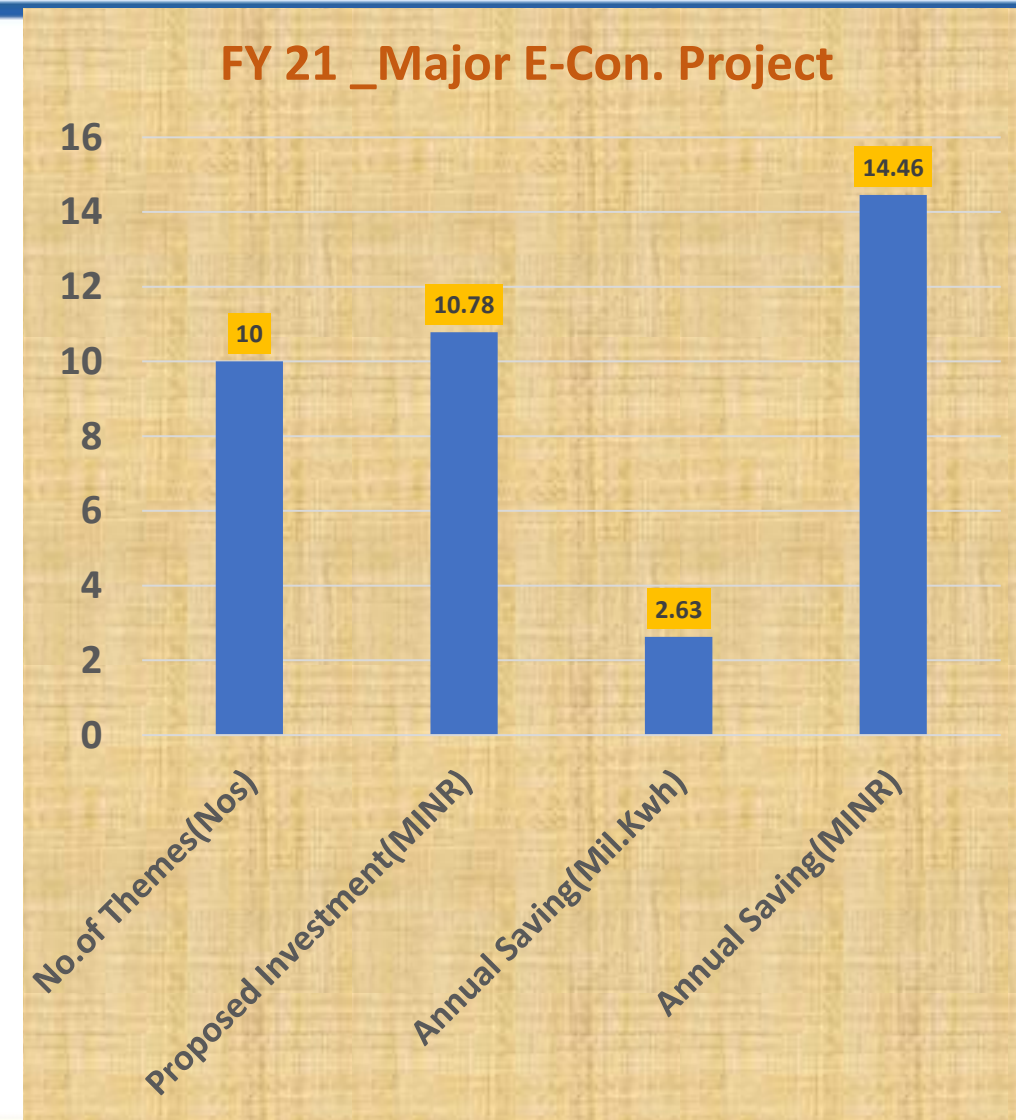
# Road Map for Further Improvement of SEC



- ❑ Maximize utilization of Day Light effectively and reduce the lighting consumption in daytime
- ❑ Greater Use of Energy Efficient Equipment's
- ❑ Optimum Utilization of HVAC System
- ❑ Greater Use of energy efficient lights
- ❑ Continuous Monitoring and audits of energy
- ❑ Implement IFC control for compressed Air system
- ❑ Replacement of Hydraulic machine to All Electric I .molding Machine.
- ❑ Utilization of Renewable Energy by Roof Top solar plant(1000Kwp)

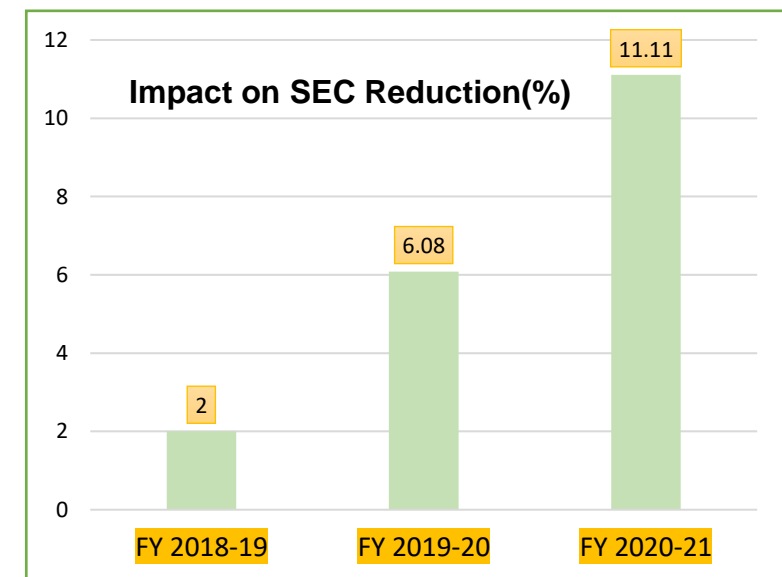
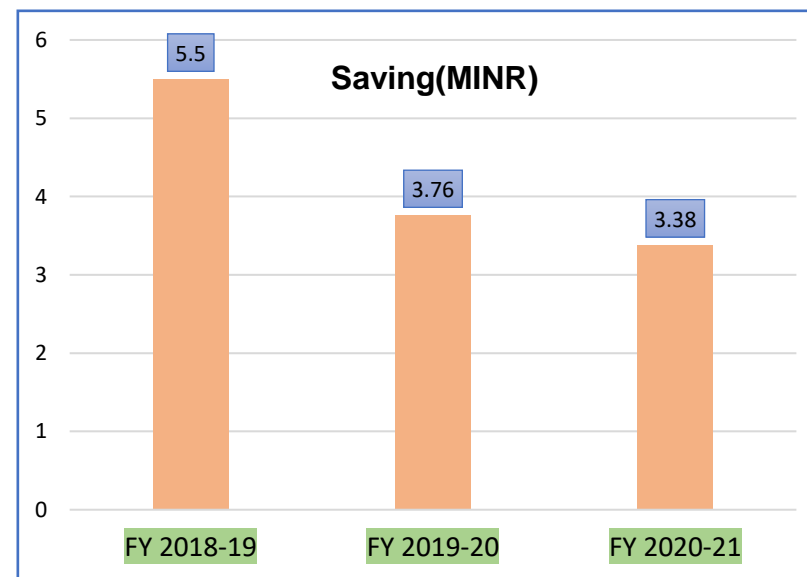
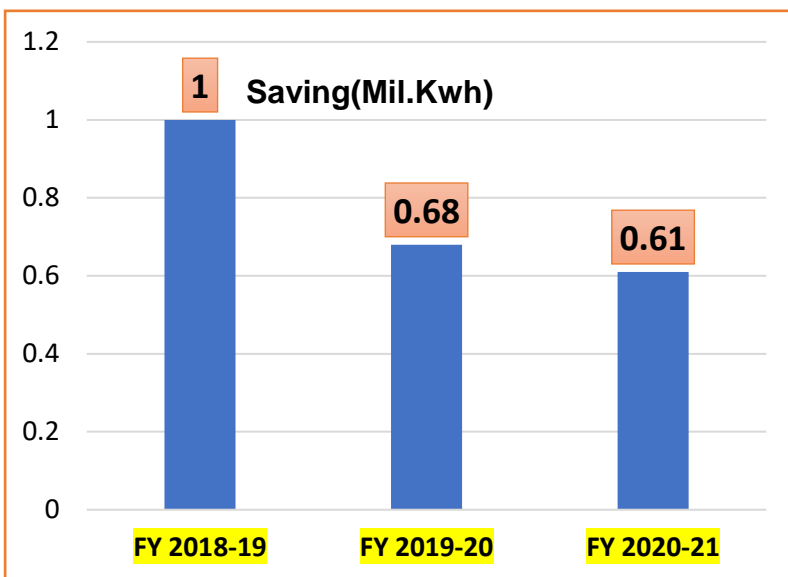
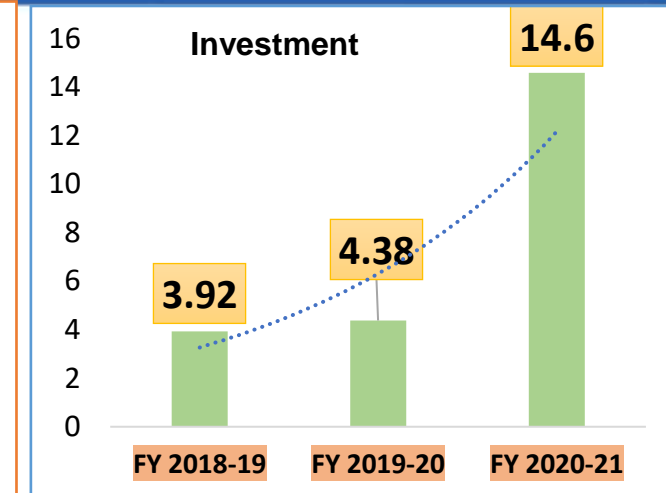
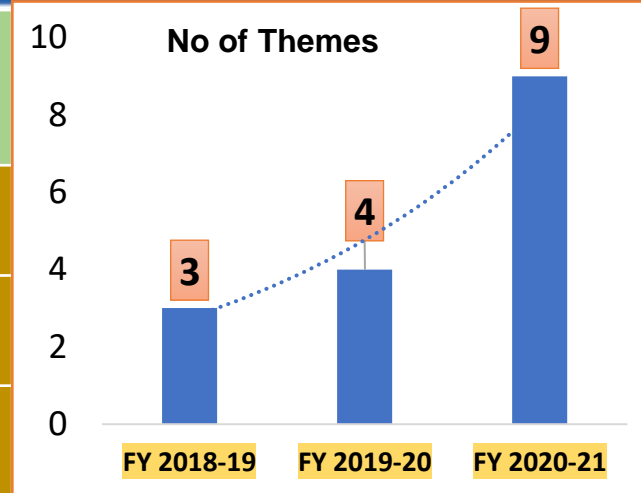
# Major E-CON Projects Panned for FY 2021-22

Title of Project	Annual Saving	Investment	Status
	(Million kWh)	(MINR)	
Utilization of Inclined conveyor ie 2 machines 2 conveyor's by 2 machines 1 conveyor	0.018	0	In-house work
Bin stocker pneumatic & electrical operation to minimize by gravity Bin stocker	0.119	0.219	Material procurement going on.
Reduce Heat loss by use Heat insulation jacket's on Fanuc machines	0.032	0.5	Under approval
Replacement of Cooling Tower Processing pump by energy efficient pumps in Cooling Tower.	0.037	0.075	Under approval
Implement 6 nos ALL Electric molding machine by replacement of Hydraulic machine	0.224	70	2 machine Installed. Remaining under process
Monitoring and controlled Compressed air leakage reduction	0.067	0	In-house work
Generation of 1MW Renewable energy	1.39	36	Installed.100% Generation started
Installation of Godrej IFC control system to minimise Compressed air leakage.	0.09	0.92	Under Budget Approval
Lighting ckt modification for use only require lights on shop floor	0.01	0.05	Inhouse activity going ON
Replacement of conventional light to LED Lighting in Admin building	0.65	0.11	Activity going On
	<b>2.637</b>	<b>107.8</b>	



# Last Three-Year Energy Saving Projects

Year	No of Projects	Investments (INR Million)	Saving (Mil.Kwh)	Savings (MINR)	Impact on SEC (%)
2018-19	3	3.92	1	5.5	Reduced by 2 %
2019-20	4	4.38	0.68	3.76	Reduced by 6.08%
2020-21	9	14.6	0.61	3.382	Reduced by 11.11%

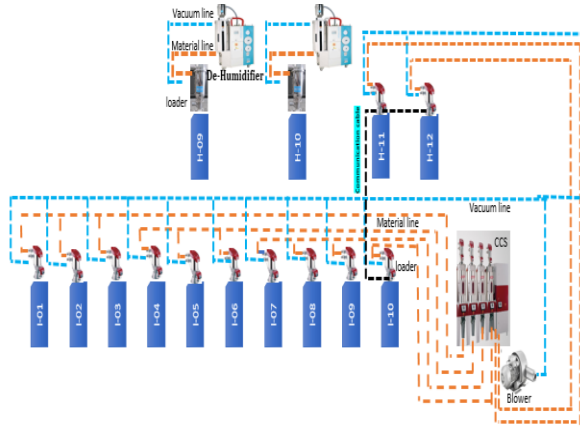


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# Innovative Project Implemented / Benefit

## Project No-1 :Centralized Dehumidifier System Implementation:

### De-Humidifier

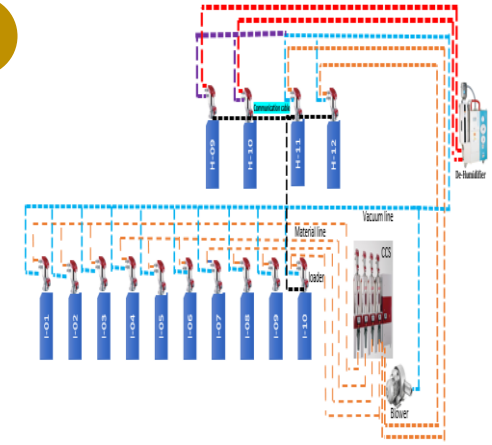


### Before

Before: Material feeding to machine by individual Dehumidifier for each machine. Taking more power consumption .

### After

### centralized conveying system



After : installation of Centralized conveying system material feeding from one station. Reduce the energy cost & CO2 emission by removing 10 nos Individual Dehumidifier system

### Implementation



#### In- Tangible Benefit :-- >

- Introduce new technology.
- Morale improve on shop floor.
- New Equipment cost saved
- 5 S improve on shopfloor by space generation
- Aesthetic improve wrt material conveying by laying SS piping

**Efforts and contribution :** Existing area covered with individual dehumidifier with space concern for operating of machine. Complete Team effect to replace by Centralize conveying system by reduce heat ,improve 5S,manpower saving.

### Result

1. Now material is conveying from single dryer w.r.t. 10 Dryers before.
  2. Presently material conveying to machine by Matsui Dryer & vacuum is synchronized by Wittmann vacuum loader.
- Total energy saving (KWH)::191952 KWH  
Total Cost saving (MINR):: 1.05 MINR

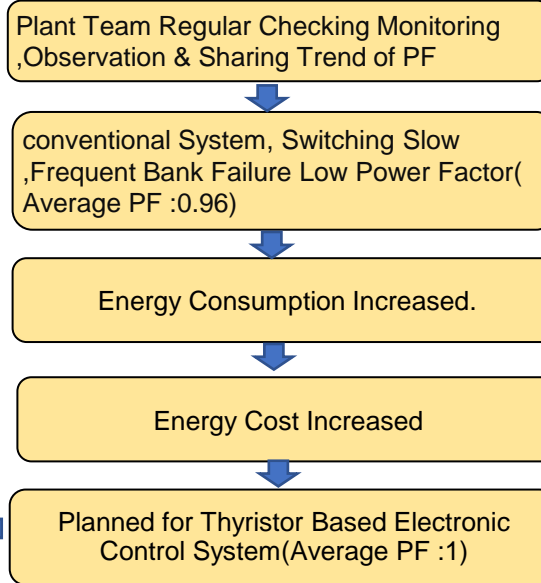
**Energy Saving (KWH) : 191952 KWH**  
**Energy Saving (INR) : 1.05 MINR**

**Replication:** This projects can be replicate to all manufacturing sector. We have implement this project in our moulding process

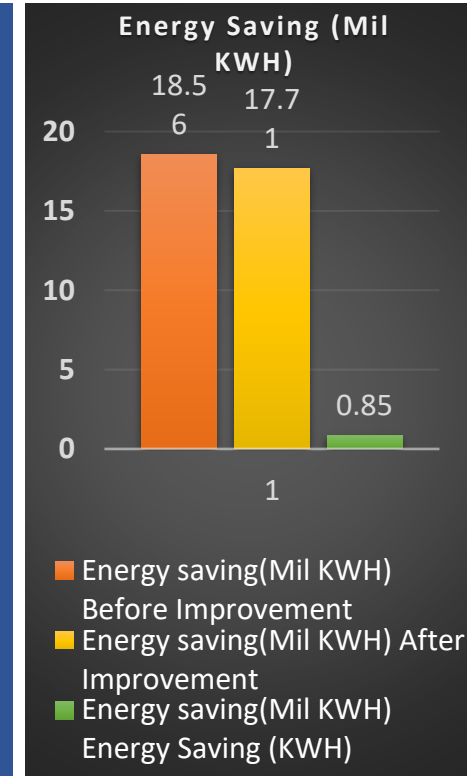
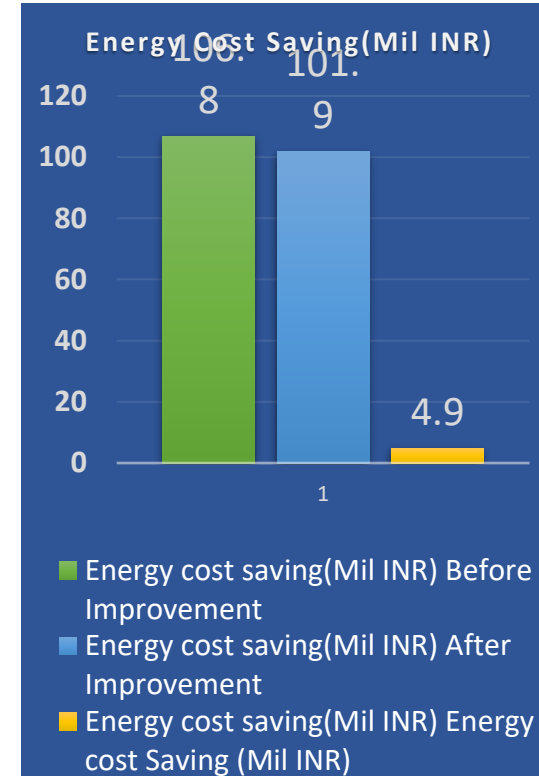
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# Innovative Project Implemented / Benefits

Project No-2 : Installation of Thyristor Based Electronic Switching "Automated Power Factor " Correction Panel



- Switching is fast as these are Thyristor based switching operation. Less risk of Elect Fire.
- Maintain required KVAR as per load variation with accuracy



**Investment** : 3.8 MINR  
**Saving** : 4.9 MINR  
**ROI** : 1.2 Years

**Replication:** This projects can be replicate to all manufacturing sector. We have implement this project in our main Distribution system

**Tangible Benefits :**

- Improve Power Factor upto "Unity"
- Minimize Kwh Consumption by 0.85 Mil.Kwh per annum
- Cost Saving by 4.9 MINR per Annum
- CO2 Reduced by 697 Ton Per Annum
- Reduced Spare Parts & maintenance cost by 0.3 MINR Per annum

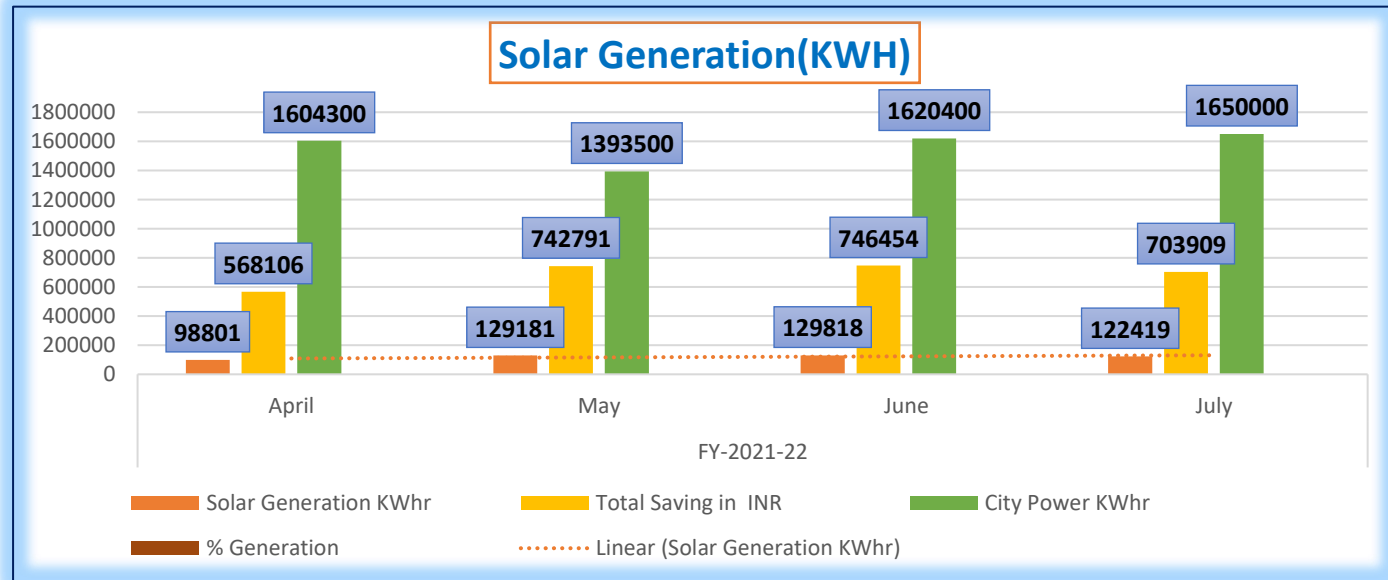
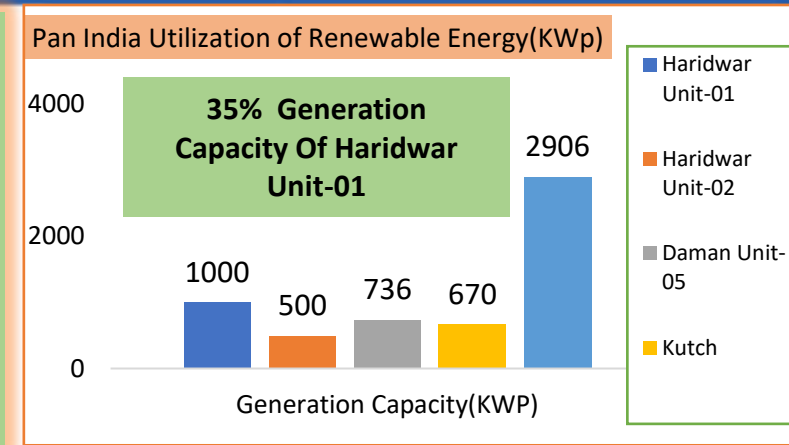
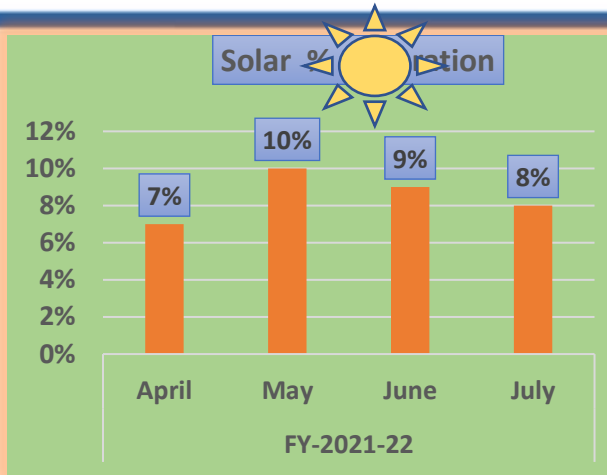
**Intangible Benefits :**

- Promote Standardization
- Increased Operation Satisfaction
- Support for Clean Environment
- Team Technical Skill Improvements



# Utilization of Renewable Energy Resource

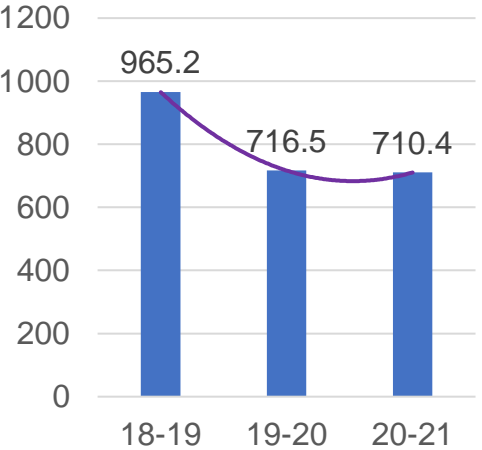
Type	Roof Top	Capacity	1000 KWp	On Grid	
Investment		3.6 MINR	Make-Panasonic		
Year	Month	Solar Generation KWH	Total Saving in INR	City Power KWhr	% Generation
FY-2021-22	April	98801	568105	1604300	7
	May	129181	742790	1393500	10
	June	129818	746453	1620400	9
	July	122419	703909	1650000	8



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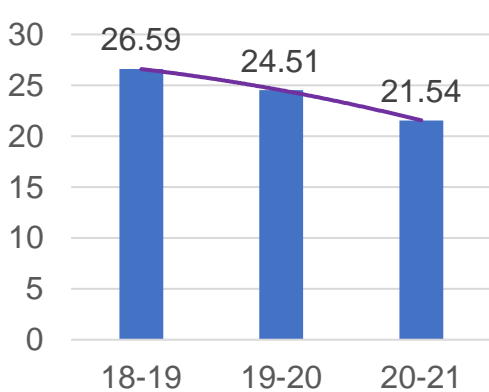
# Waste Utilization and Management

**Urea scrap  
MT/Year**



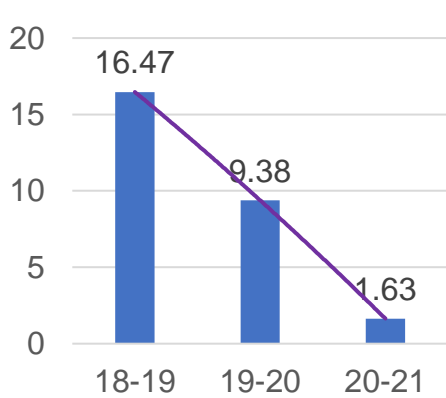
Save RM wastage by Reducing shot molding and flash generation

**Corrugated Box  
MT/Year**



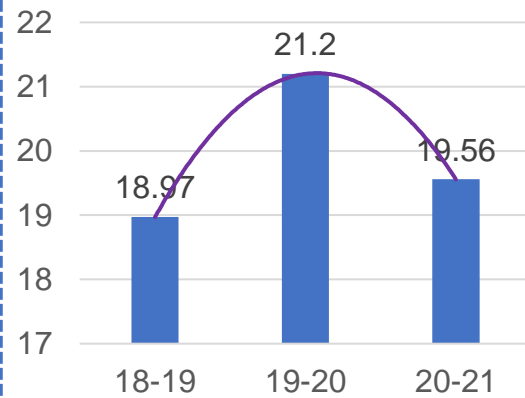
Raw material directly received in Unit-2, Few master carton merged for common packing

**Plastic Bags  
MT /Year**



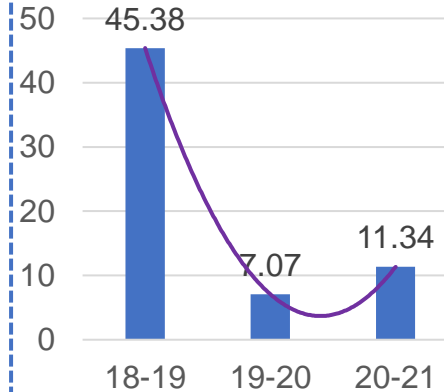
Replace plastic bags by Non woven bag and Corrugated box in moulding

**Copper Scrap  
MT/year**



Develop and use standard Tool for cutting and use the complete part to reduce scrap

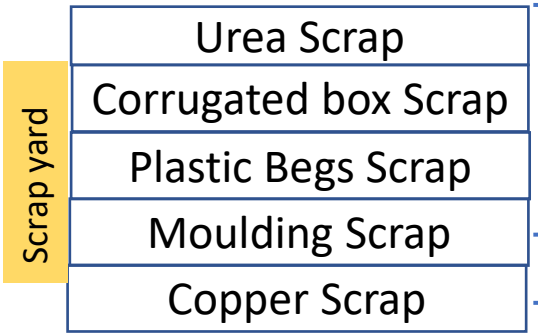
**Moulding scrap  
MT/Year**



Reduce machine shutdown hence less generation of lumps, optimum reuse of lumps and runner as per standard.



PLSIND U1



Send to authorized Recycler of M/s. Arun Plastic

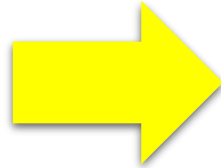
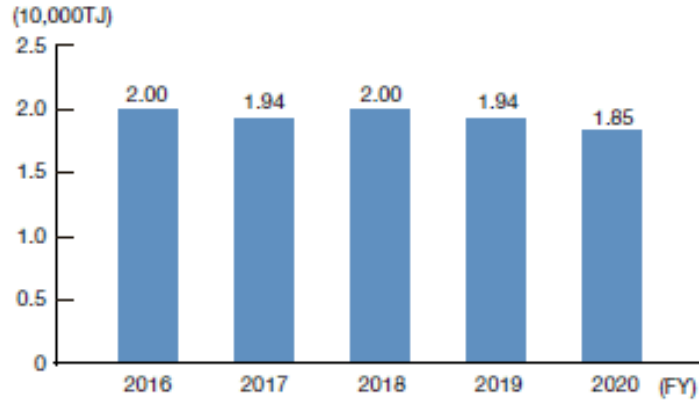


Recycler Site of M/s. Gupta Metals & Agarwal Metals

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# GHG Inventarisation– Monthly Energy results are being submitted on Panasonic Global portal

## Energy Consumption in Production Activities

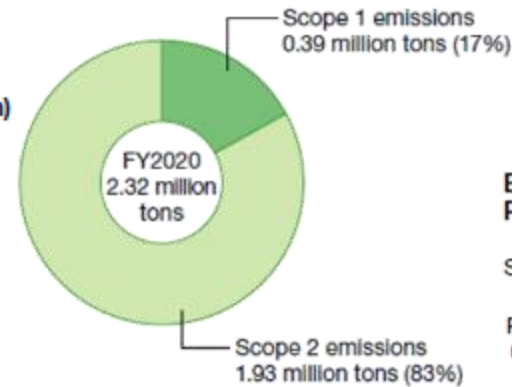


## Breakdown of Total GHG Emissions (by gas and by scope)

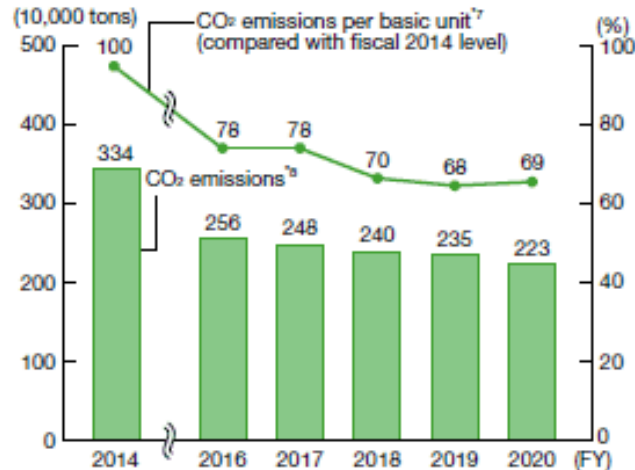
Our GHG emissions, including emissions from energy sources and other sources, reached 2.32 million tons in fiscal 2020, the breakdown being 17% for Scope 1 emissions<sup>\*13</sup> and 83% for Scope 2 emissions<sup>\*13</sup> (see page 31 for Scope 3 emissions).

<sup>\*13</sup> GHG emissions defined by the GHG Protocol, an international calculation standard for GHG emissions. Scope 1 emissions refer to all direct GHG emissions from facilities that are owned or controlled by the reporting entity (e.g. emissions from usage of town gas or heavy oil). Scope 2 emissions refer to GHG emissions from manufacturing of the energy that is consumed in facilities owned or controlled by the reporting entity (e.g. emissions from generation of electricity that the reporting entity purchased).

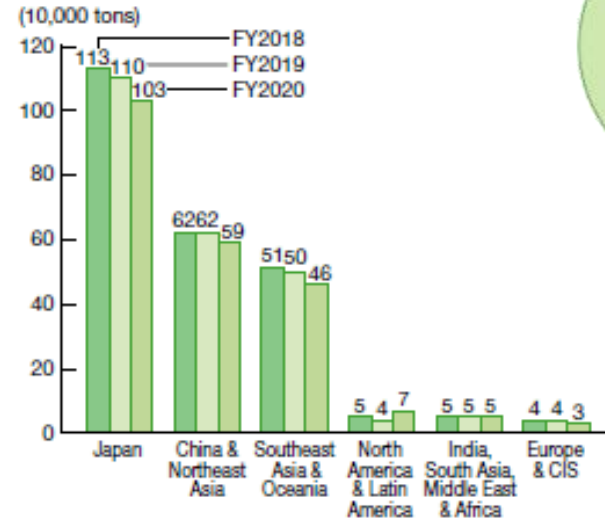
### Breakdown of Total GHG Emissions (CO<sub>2</sub>-equivalent) in Production Activities (by scope)



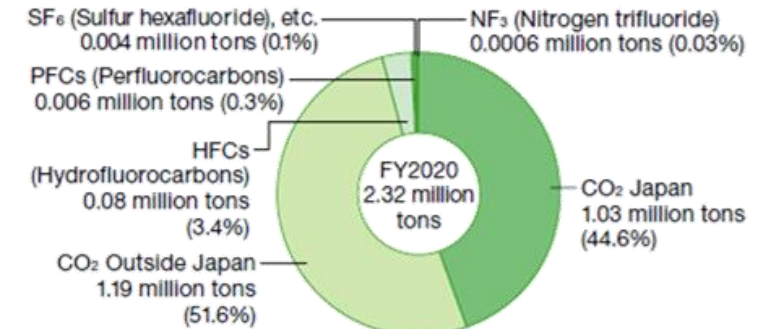
## CO<sub>2</sub> Emission in Production Activities and CO<sub>2</sub> Emission Per Basic Unit



## CO<sub>2</sub> Emission in Production Activities (by region)



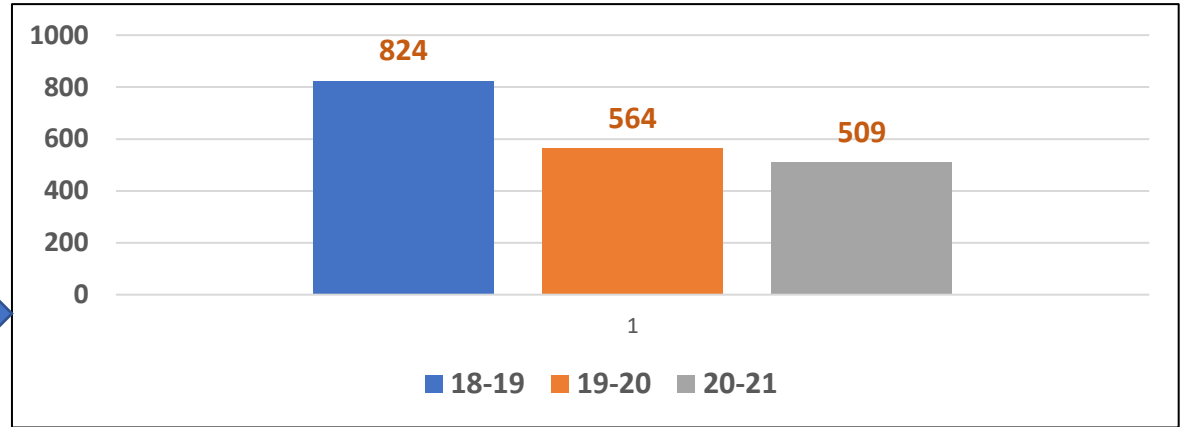
## Breakdown of Total GHG Emissions (CO<sub>2</sub>-equivalent) in Production Activities (by category)



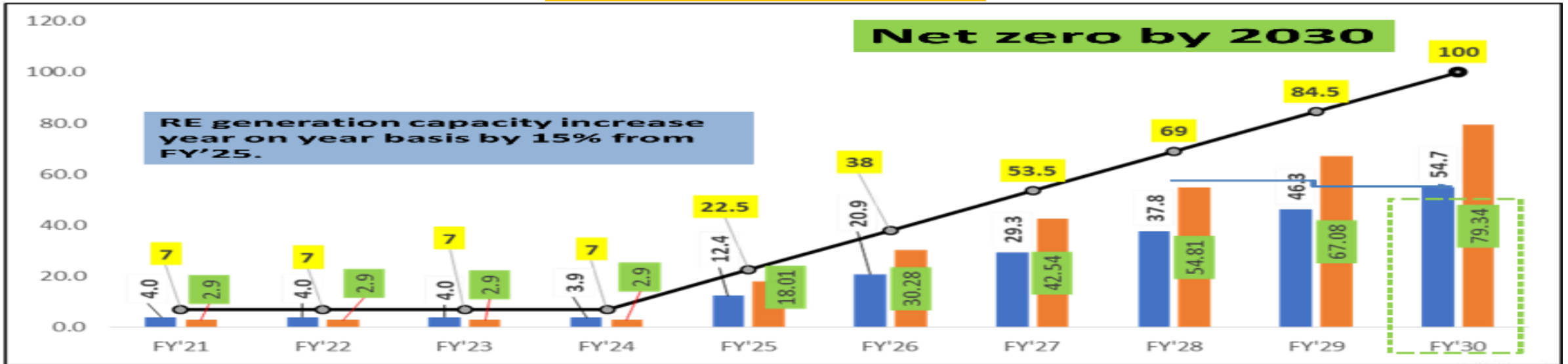
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# CO2 Emission Reduction Trend

Co2 Emission Reduction _Last 3 Years		
Year (FY)	Energy Saving (KWH)	Saved Co2 emission in Ton
18-19	1004460	824
19-20	687975	564
20-21	620672	509



## Reduction Plan 2021-2030



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

100% Air-conditioners to be replace with eco-friendly gas

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

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

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

Zero single use plastic goal for FY '2021

No plastic allowed having less than 50 micron thickness.

## Panasonic

### 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.

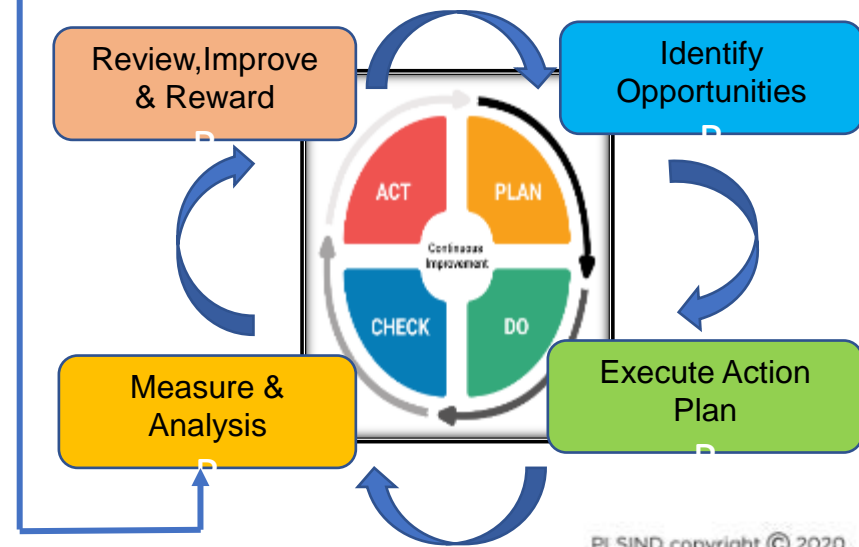
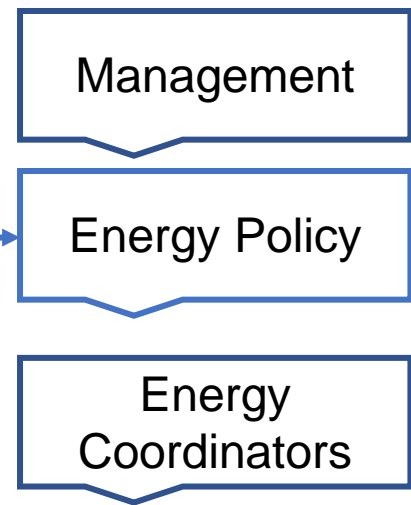
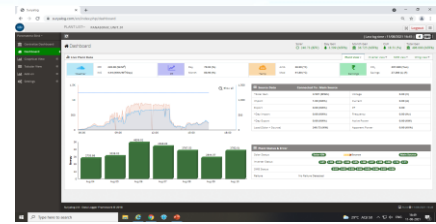
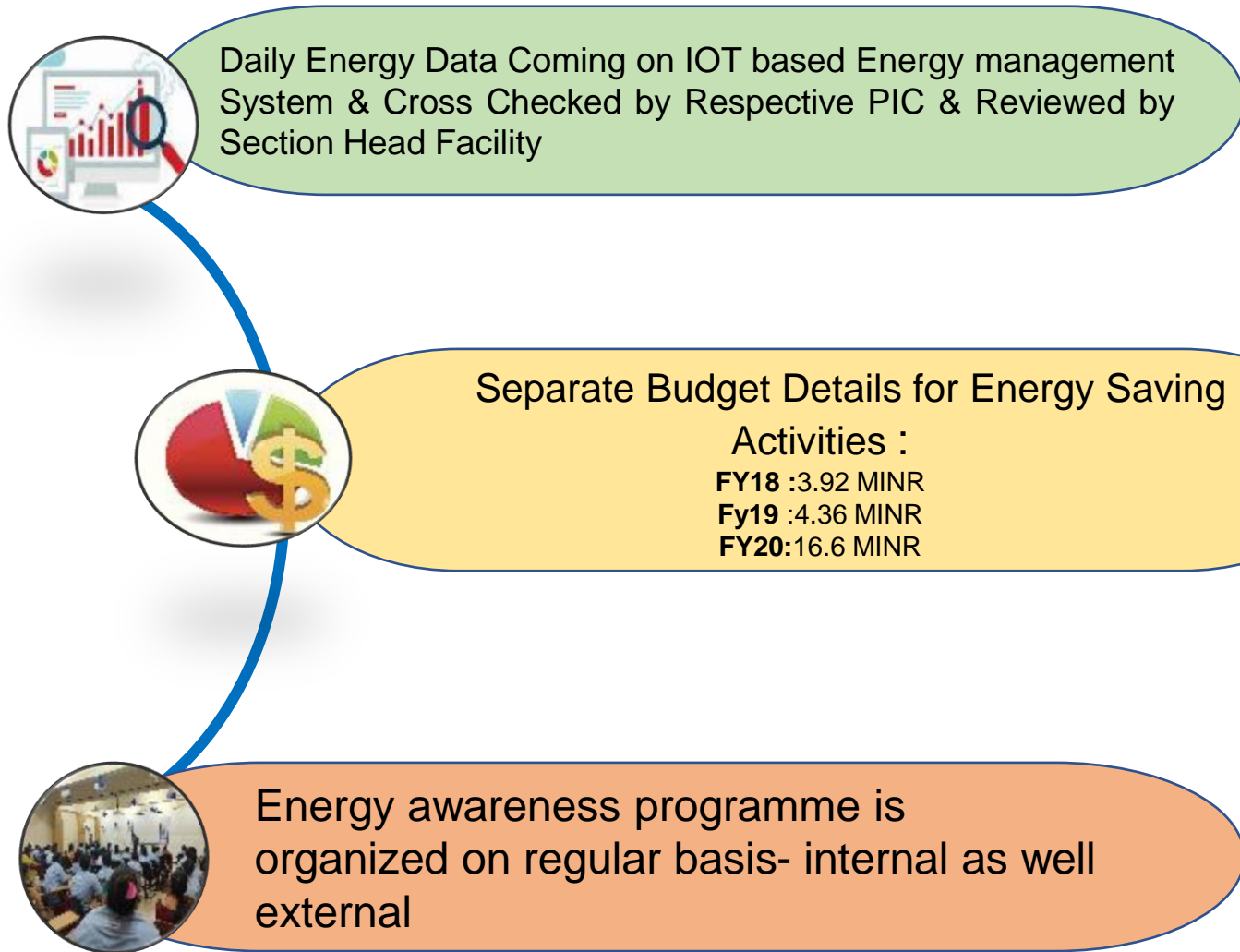
We will have special focus on:

- 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

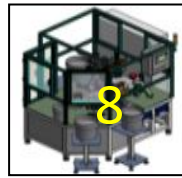
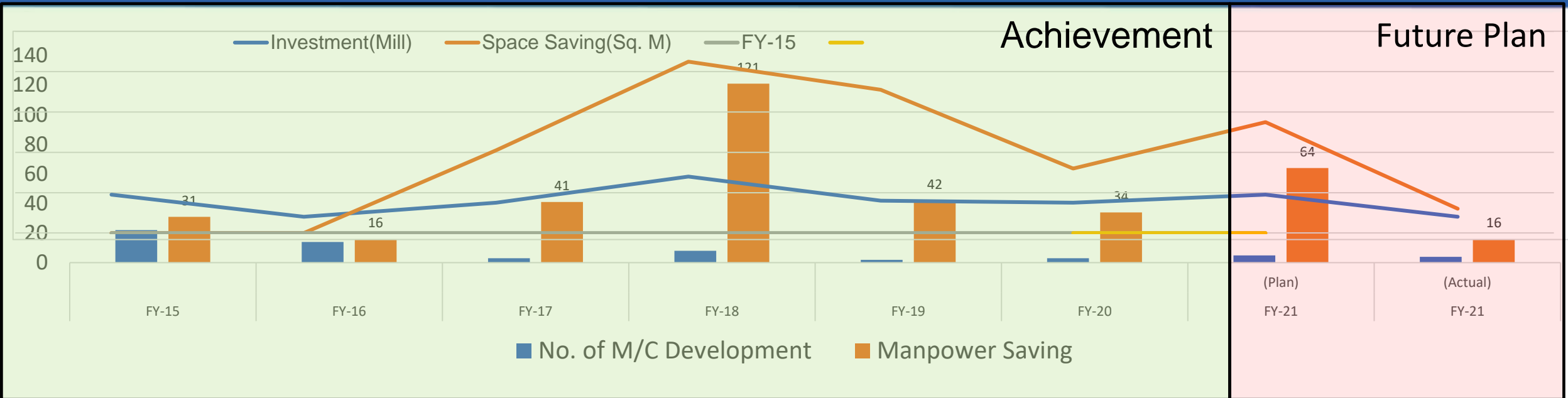
Date:



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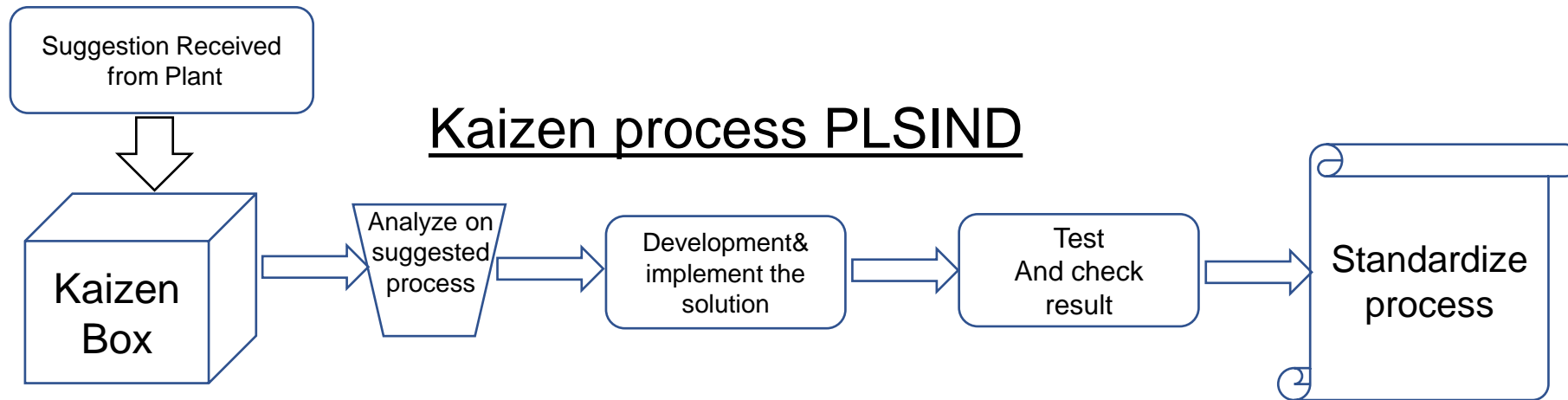
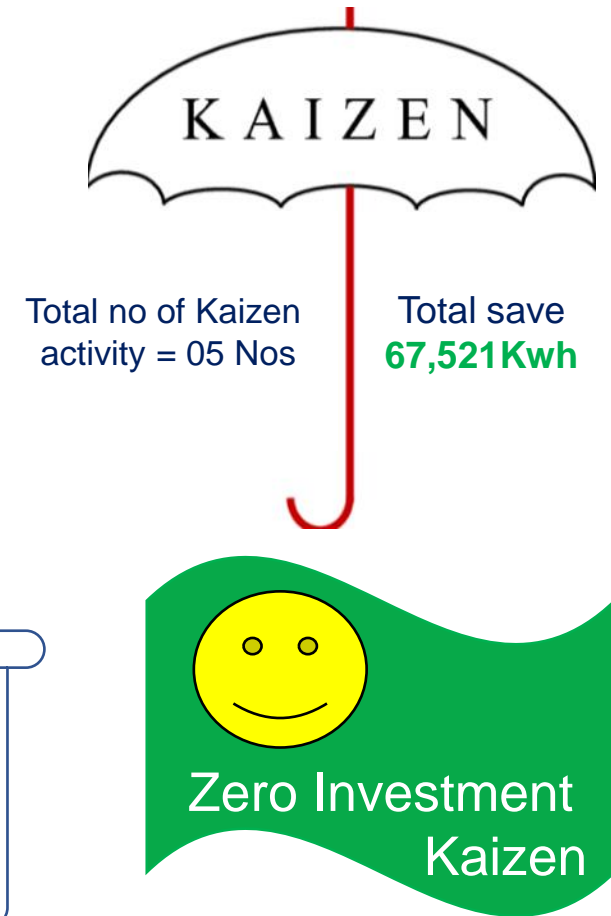
# Automation Development Plan

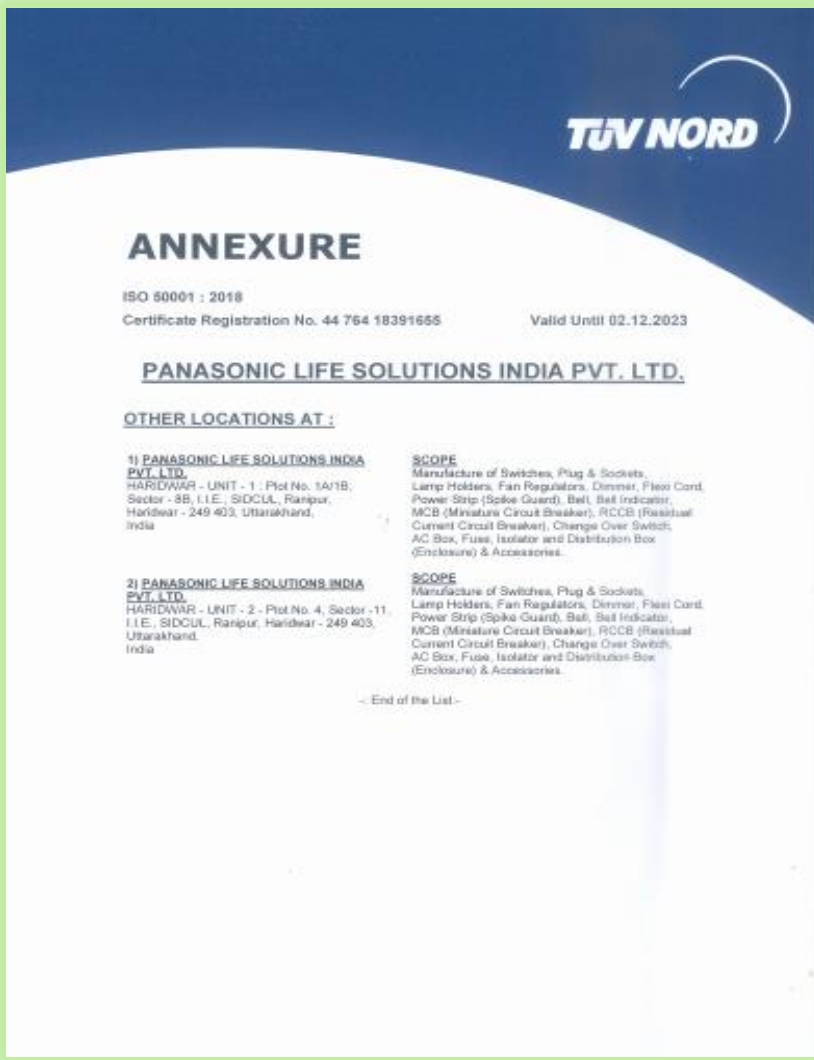


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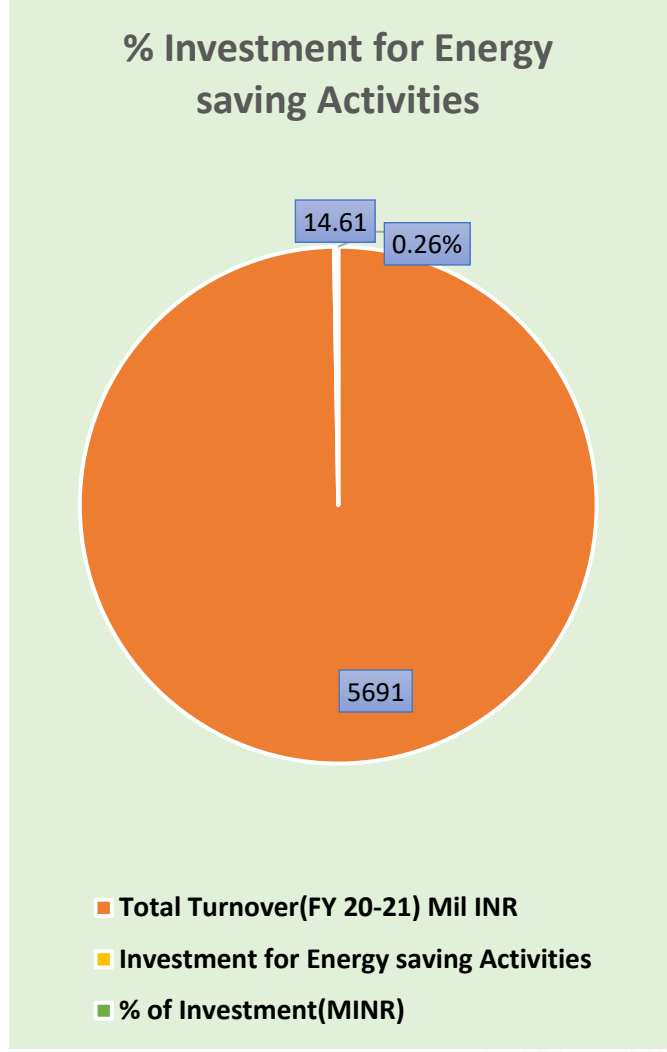


- |   |                 |
|---|-----------------|
| 1. Energy save by chiller pipeline modification work                      | 25,321 Kwh/Year |
| 2. Energy save by electric wire network modification work                 | 2,426 Kwh/Year  |
| 3. Energy save by operation lubrication unit gravity concept              | 3,774 Kwh/Year  |
| 4. Energy save by modification work in conveyor line for product transfer | 24,000 Kwh/Year |
| 5. Energy save by modification work in conveyor line pouch printing area  | 12,000 Kwh/Year |





- **PLSIND Haridwar Unit is EnMS Certified Since Nov-17 with 2018 version**
- **Set and monitoring Energy Baseline for individual departments.**
- **Regular Energy review and monitoring is being done**
- **Identify the SEU and taken monitoring control**
- **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.**



- ❑ Deep understanding of Energy management system and conservation.
- ❑ Better utilization of Renewable Energy source.
- ❑ Elimination of Non-value added activities.
- ❑ Learned systematic approach towards improvements for energy saving ideas and technic.
- ❑ Enhance cost consciousness among team.
- ❑ Culture of Energy Improvement through Sustainable Activities.

**NOTE: We have participate 1<sup>st</sup> time for CII Energy award**

## APEX India Green Leaf Award-2021



## CII National Award for Environmental Best Practices – 2021



# Thanks

## Panasonic Life Solutions India Pvt. Ltd.



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