



**CII NATIONAL AWARD FOR  
EXCELLENCE IN ENERGY  
MANAGEMENT – 2024**

**Presented by:**

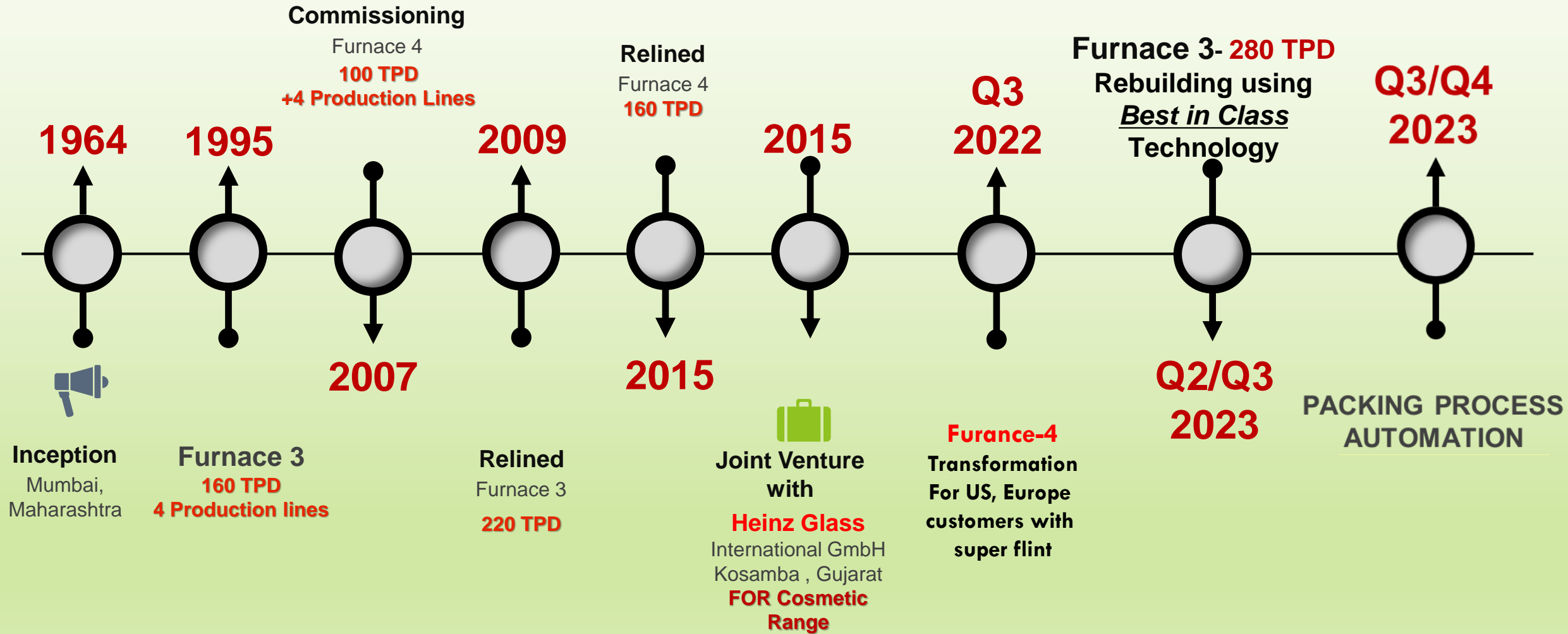
**Mr. Manraj Meena - Head - Plant Operations**

**Mr. Deepak Gaikwad - DGM - Engineering Services**

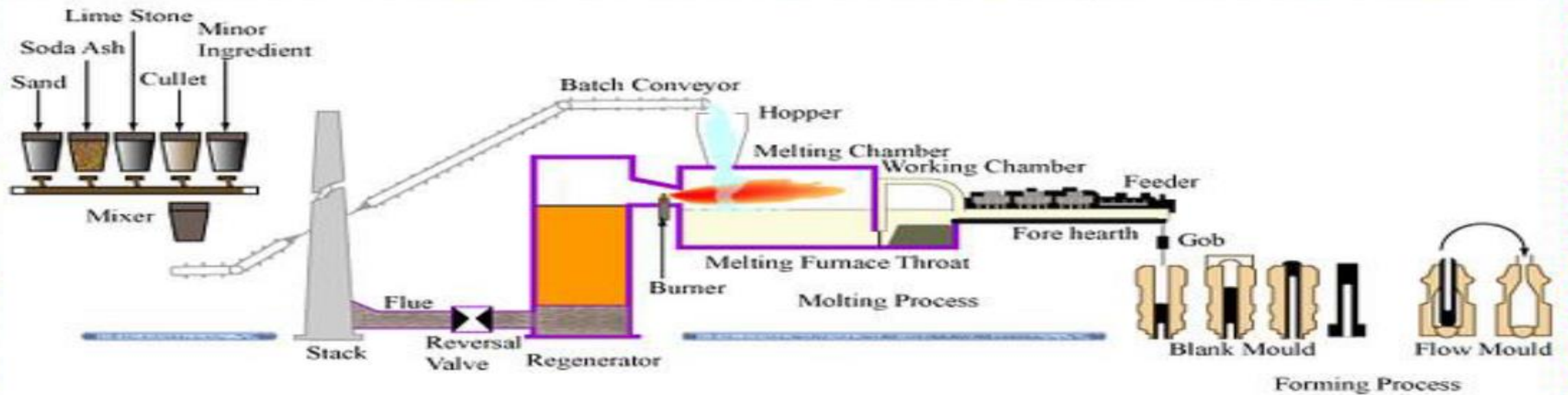
**Mr. Deepak Singh - Asst Manager - Engineering Services**



# Our History



# ◆ Process Flow Chart



## MAKING GLASS

Hot end coating

Cold end coating

Annealing Lehr

Inspection Machine  
Additional Processing

Decorating/Printing

Fuji Seal

Packing

Shipping





# Infrastructure Highlights

**Technology : Forming by Blow-Blow, Press-Blow**

**Product Range – 25 ml to 1750 ml Glass Containers**

**Melting Capacity – 445 Tons Per Day (TPD)**

**Melting technology: End fired Regenerative Design by Horn Germany**

**Forming Machines: 09 Lines comprising of SG/DG/TG from Bottero, Emhart & BDF**

**Hot end Coating by Vidromicanica and IMACA, Netherlands**

**Annealing Lehrs by Antonini, Italy**

**Inspection Technology by HEYE-Germany, IRIS and DATIA**

**Utilities – Air compressors by Atlas Copco, Ingersoll Rand, Kaeser and Air Blowers by LWN, Germany, Scrapper by Carmet, Single liners by KHS, Ware handling by Sheppee**



# Commitment

## **Our Vision :**

*To become a niche, and most trusted glass Container partner, offering the most exciting & innovative range of glass packaging solutions for quality conscious customers in India, US and Europe*

## **Our Mission**

*To provide attractive glass packaging solutions to our customers to promote Glass for all personal consumption products emphasizing attributes like, safety, taste retention & visual appeal because more glass means less plastic – which is good for environment*

# ◆ Certifications



ISO 9001 : 2015  
(QMS)



ISO 14001 : 2015  
(EMS)



FSSC v 5.1 22000  
(Food Safety)



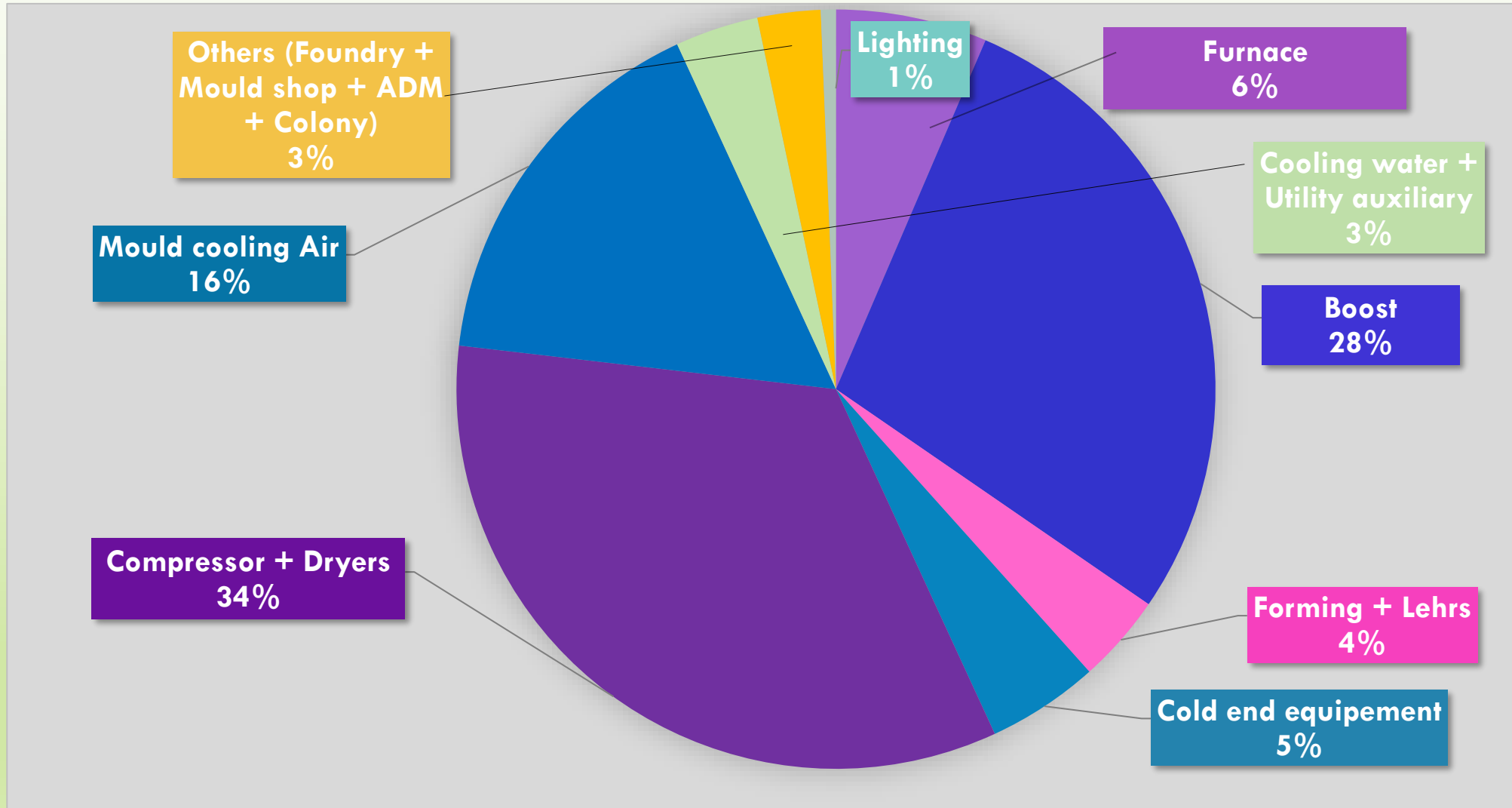
(Social Ethical Data Exchange)



SMETA 6,1 4 Pillar Audit

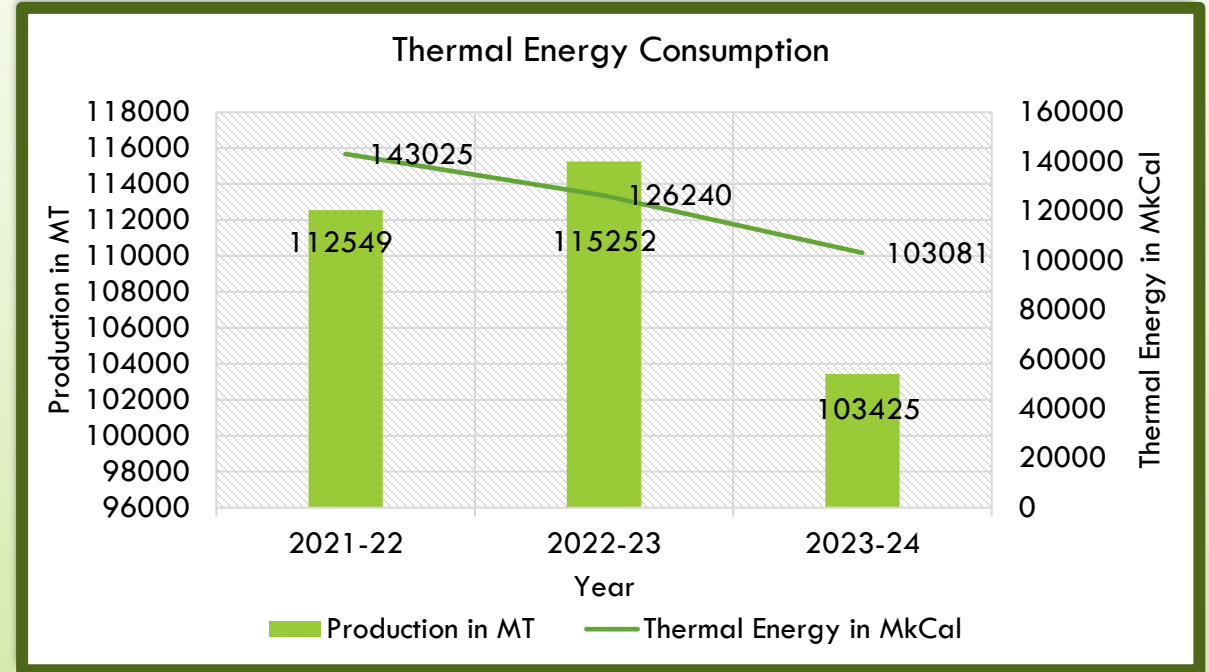
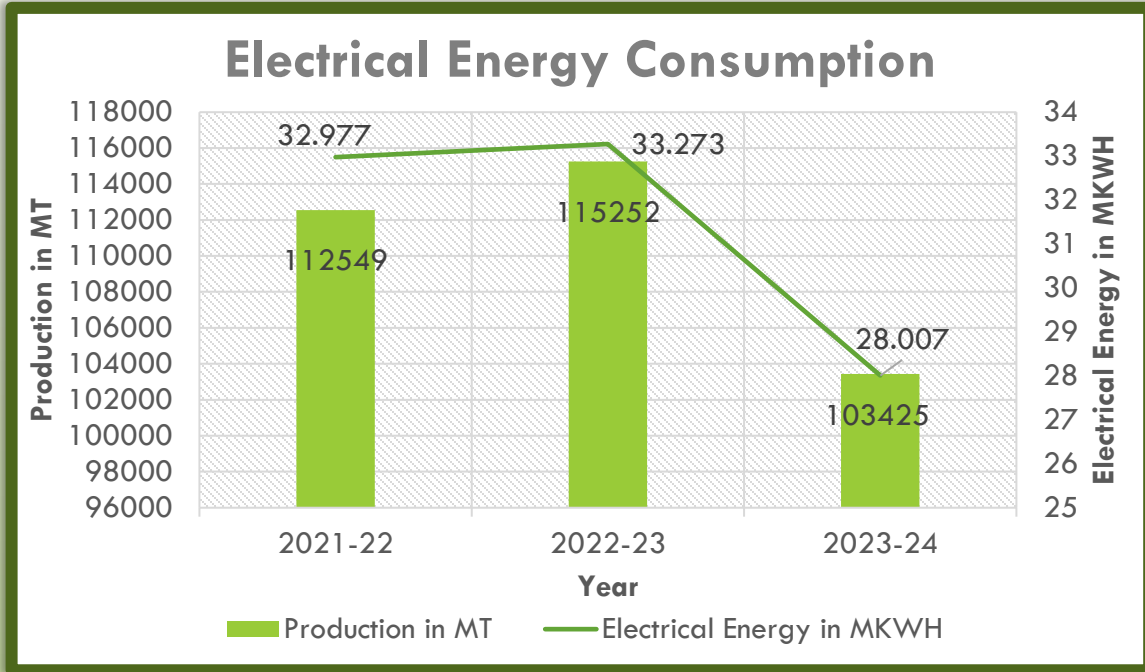


# Electrical Power Consumption centers





# Electrical and Thermal Energy Consumption Trend

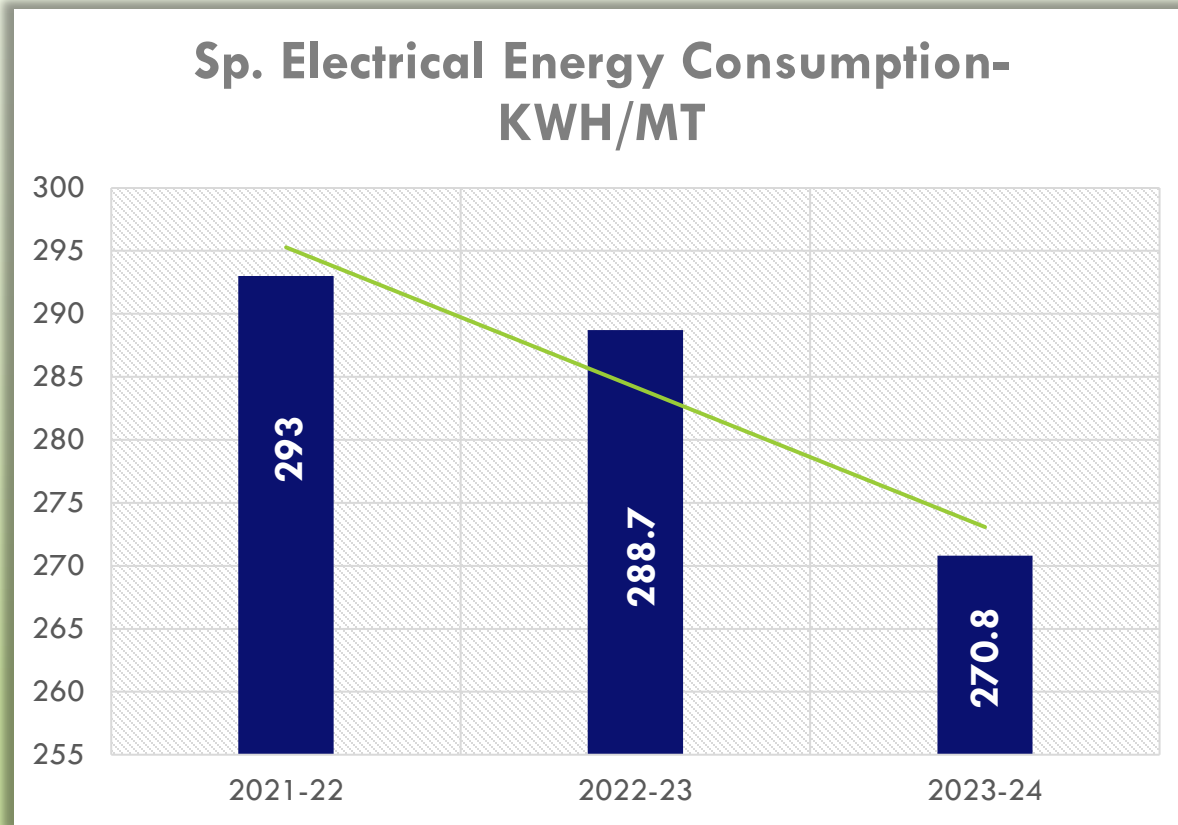


Production decreased in 2023-24 due to stoppage in production for relining of Furnace from 200 tpd to 285 tpd

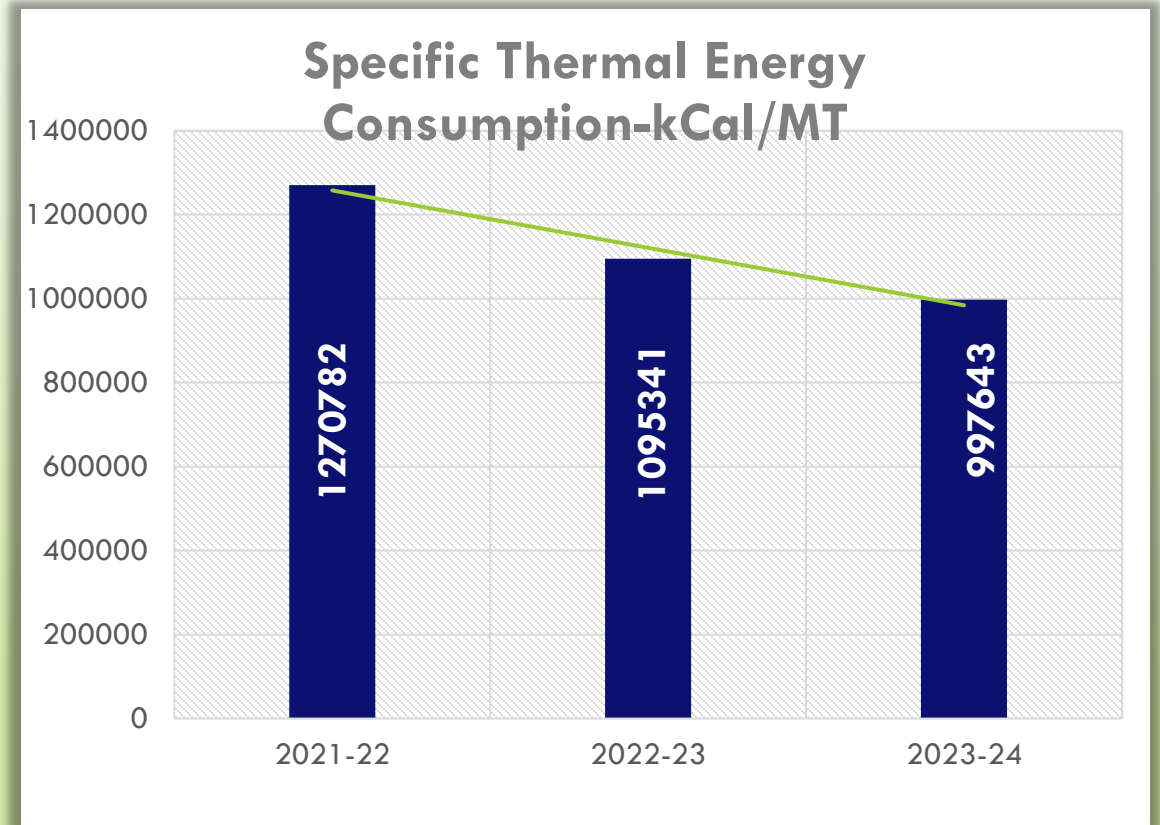




# Specific Energy Consumption – Electrical and Thermal



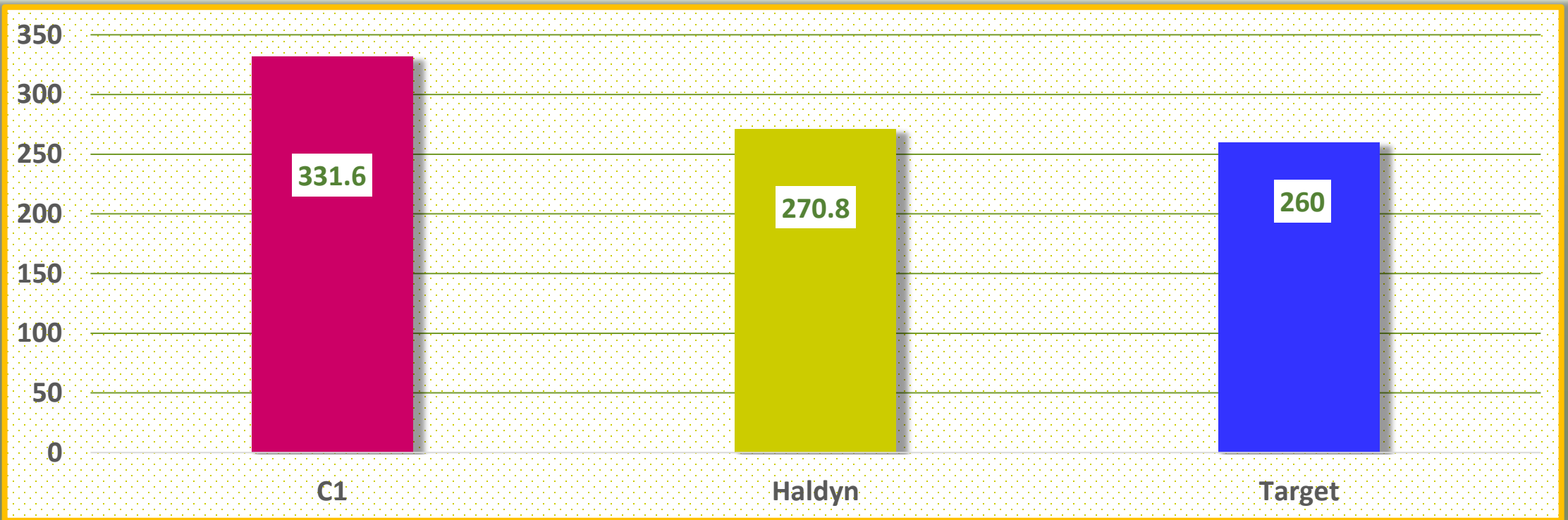
**% Improvement - 6.2%**



**% Improvement – 8.9%**

# ◆ Benchmarking with Competitors

## Specific Electrical Energy Consumption Benchmarking with competitors



Source : Data Collected from CII Presentation

# ◆ Energy Saving Projects planned for 2024-25

SN	Title of Energy Saving project implemented	Annual Electrical Savings estimated		To be Invest
		Units Million	Rs Million	Rs Million
1	Compressor cooling secondary circuit PHE pumps to be stopped by circulating direct cooling tower water.	0.33	2.96	0.5
2	8 nos. Energy inefficient pumps to be replaced.	0.27	2.79	0.8
3	Installation of VFD for cooling tower fans.	0.015	0.14	0.4
4	Replace F-4 Plant Blower-41 with New Energy Efficient Blower	0.013	1.32	0.3
5	Replace F-4 Plant Throat Cooling Blower with New Energy Efficient Blower	0.008	0.08	0.15
6	Replace F-4 Plant FH Combustion Blower with New Energy Efficient Blower	0.016	1.56	0.6
		0.652	8.85	2.75

# ◆ Energy Saving Projects implemented in Last 3 years

Year	No of Energy saving projects	Investment (INR Million)	Electrical savings (Million kWh)	Thermal savings (Million Kcal)	Total Savings (INR Million)	Payback period (In Months)
FY 2021-22	4	4.2	0.469	0	4.23	12
FY 2022-23	7	3.32	0.49	0	4.445	9
FY 2023-24	11	76.9	1.8	3172	11.2	84**

**\*\* Despite a long payback period the projects for 23-24 were executed due to the focus on energy savings..**

# ◆ Energy Saving Projects implemented in Year 2021-22

SI No	Title of Energy Saving project implemented	Annual Electrical Savings achieved		Total Annual Savings	Invest. Made	Payback months
		Units Million	Rs Million	Rs Million	Rs Million	
1	Air leakages arrested & plugged the unwanted tapping's.	0.009	0.082	0.08		
2	Single energy efficient pump installed at cooling tower in place of 2 pumps.	0.245	2.212	2.21	0.4	2.5
3	Mould heating oven converted to gas oven.	0.105	0.948	0.61	0.8	16
4	Reciprocating comp. replaced with screw comp.	0.110	0.988	0.99	3	37
<b>Total for 2021-22</b>		<b>0.469</b>	<b>4.23</b>	<b>4.23</b>	<b>4.2</b>	



# Energy Saving Projects implemented in Year 2022-23

SN	Title of Energy Saving project implemented	Annual Electrical Savings achieved		Total Annual Savings	Invest. Made	Payback months
		Units Million	Rs Million	Rs Million	Rs Million	
1	Energy saving in compressors. Cent. comp. surge level critically analyzed & reduced min. amp setting from 34A to 32A.(At 11 KV), which reduced the blowing of air to atmosphere during low demand condition.	0.037	0.33	0.33	0	0
2	HT Compressor intercoolers replaced with new coolers.	0.108	0.97	0.97	1.4	18
3	LT compressor new cooling water system installed with higher capacity PHE.	0.024	0.21	0.21	0.4	23
4	HP, LP header separation done.	0.106	0.95	0.95	0.8	11
5	Vibrator tray magnetic coils replaced with imbalanced motor.	0.210	1.90	1.90	0.5	4
6	Cullet washary vibratory Seivear drive replaced with unbalanced motor.	0.009	0.08	0.08	0.1	15
7	Small high pressure compressor installed in workshop.	0.073	0.66	0.66	0.12	3
<b>Total for 2022-23</b>		<b>0.493</b>	<b>4.44</b>	<b>4.44</b>	<b>3.32</b>	

# ◆ Electrical Energy Saving Projects - Year 2023-24

SN	Title of Energy Saving project implemented	Annual Electrical Savings achieved		Total Annual Savings	Invest. Made	Payback months
		Units Million	Rs Million	Rs Million	Rs Million	
1	Comp discharge pipe size increased from 6" to 8". Reduced the pressure drop. HP line from F3 to F4 size increase from 8" to 12"	0.05	0.49	0.49	0.30	5
2	Reduced bends & Removed PRV from LP line.	0.03	0.28	0.28	0.20	9
3	Compressor room isolated with Coco coir sheets with water spray to maintain efficiency of comp suction filters & keep comp room temp down.	0.07	0.66	0.66	0.20	5
4	Power factor maintained Near to Unity.	0.00	2.50	2.50	1.10	6
5	Mould cooling blowers replaced with Energy efficient blowers of LWN.	0.96	8.69	8.69	11.00	22
6	Separate low pressure blower installed for conveyor cooling.	0.24	2.17	2.17	0.40	3
7	Furnace & throat cooling blowers replaced with energy efficient blowers from LWN.	0.31	2.82	2.82	10.00	43
8	ISMC pusher cooling changed for compressed air to blower air pipe	0.02	0.15	0.15	0.01	1.5
9	Additional air dryers installed to reduce pressure drops.	0.11	0.99	0.99	0.50	6
<b>Total Energy saving for 2023-24</b>		<b>1.80</b>	<b>18.76</b>	<b>18.76</b>	<b>23.71</b>	

# ◆ Thermal Energy Saving Projects - Year 2023-24

SN	Title of Energy Saving project implemented	Annual thermal savings		Total Annual Savings	Invest. Made	Payback months
		SCM Of Natural Gas	Rs Million	Rs Million		
1	Gas consumption reduction. 1.All distribution lines checked for leakages & sealed. 2. Regular combustion analysis furnace, distributor, forehearth temp. were set to run burners at minimum fire. 3.Regular burners & gas mixers.cleaning. 4.The conditioning of glass in distributor was done through top & bottom cooling instead of running burner on excess fire.	82125	2.79	2.79		
2	Annealing lehrs 4 nos replaced with energy efficient Lehrs.	262800	8.41	8.41	66.00	94
	Total Energy saving for 2023-24	344925	11.20	11.20	66.00	



# ◆ Innovative Project-1



Generally for compressor cooling, **Soft water** is provided through MS Pipe lines which was choking & leaking. Choking affecting comp performance due to low cooling. After a brain storming session we concluded that replacing MS lines by SS would result in minimal heat exchange which will improve the cooling which would subsequently improve the compressors efficiency. Furthermore, this will result in low corrosion / choking of heat exchangers.

**Compressor cooling water line  
replaced with SS.**

**Investment made- 80 Lacs**

**Annual saving- 16.5 Lacs**

**Payback- 5 Years**

**Status – **Successfully completed****

# ◆ Innovative Project-2



The Glass manufacturing environment is dusty and choking of filters by dust and glass cullet results in significant inefficiency of blowers and compressors.

A civil wall or sheet partition could restrict dust but the air suction of compressor and blowers could be compromised. We came up with an idea of partition using **Coco coir** to manage sufficient volume of suction air whilst preventing dust and cullet particles, which also resulted in reduction of temperature of compressor room. This is also helpful in maintaining humidity during monsoon.

**Coco Coir curtain / Partition installed in comp room.**

**Investment made- 2 Lacs**

**Annual saving- 6.6 Lacs**

**Payback- 4 Months**

**Status – Successfully Completed**

# ◆ Renewable Energy Utilization

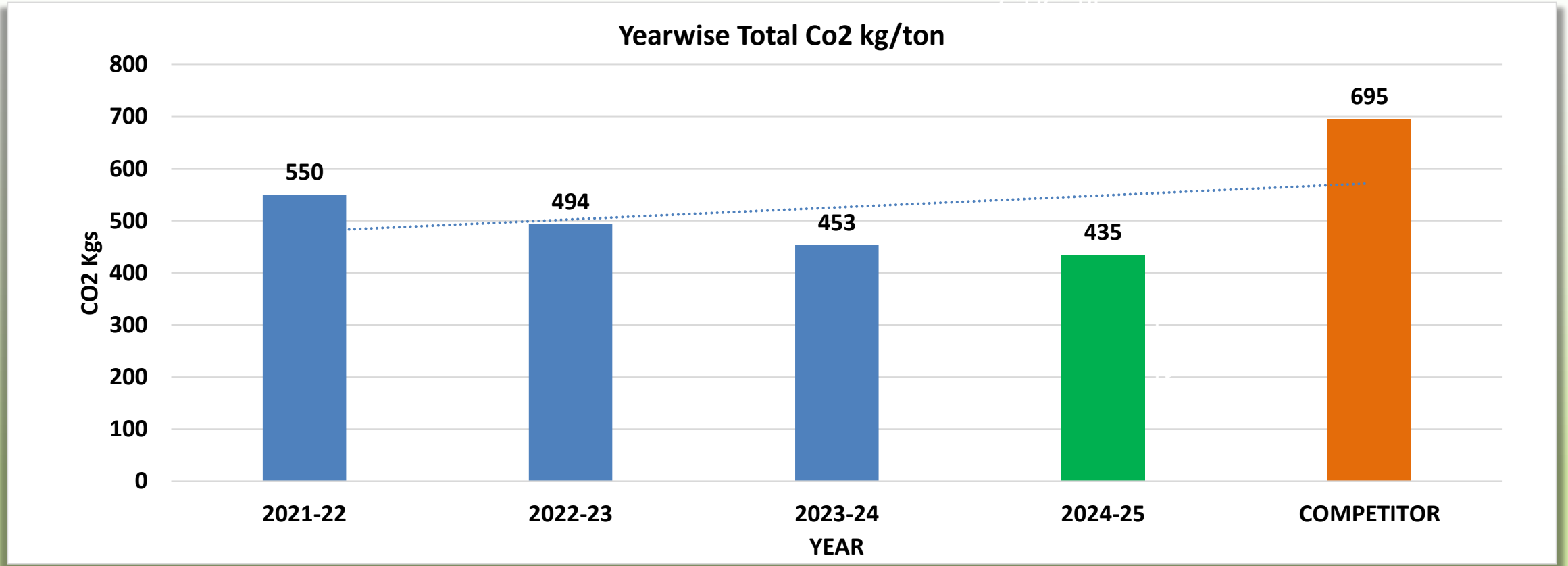
## Offsite

Year	Source (Solar, Wind, etc.)	Total Installed Capacity (MW)	Capacity Addition (MW)	Total Generation (million kwh)	Share % w.r.t to overall energy consumption
FY - 2021-22	--	--	--	--	--
FY - 2022-23	--	--	--	--	--
FY - 2023-24	Hybrid	1.49	--	5.123	20.88%

**\*\* We made a small beginning in 23-24 to get familiar with this option & to prepare a roadmap of creating The infrastructure for deriving higher benefits. Presently we are working on Group captive model and will start utilization of 100% RE by June-2025**

# ◆ GHG Inventorisation

☐ Scopes included- Scope- 1 & Scope-2



## GHG EMISSION INTENSITY

We are following all measures towards achieving ESG goals.

# ◆ GHG Inventorisation

## GHG REDUCTION ACTION PLAN

### Use Of Renewable Energy

- Installing Renewable energy- Group Captive Hybrid power for total capacity.


### Reduction of Energy Consumption

- Improve efficiency of fuel usage
- Curb emissions related to growth through green industry practices.
- Reduce consumption through the exchange of knowledge, training, awareness campaigns.
- Replacement of old Equipment with Energy Efficient latest technologies.

**We have brought extreme awareness in our employees about energy conservation resulting in benefit to environment.**

# Green Supply Chain Management

## Procurement Policy

 <b>Supplier Selection - Evaluation &amp; Reevaluation Procedure</b>	Doc No.	PIB-FI-014
	Issue No. / Date	01/01-Jan-2023
	Rev. No. / Date	01/01-Jul-2024
	Effective from	01-Jul-2024
	Page No.	Page 1 of 2

- Purpose:** - Examine Supplier / Service Provider compatibility to provide material / service as per HGL defined specification & within stipulated timelines.
- Scope:**- Raw Material  
Packing Material
- Responsibility**  
Functional HOD  
Purchase Manager
- External Reference**  
ISO 9001 Clause 8.4
- Terms used**  
HGL – Haldyn Glass Ltd.  
COC – Code of Conduct for External Service provider
- Procedure**
  - Request for business to be shared by HGL via email with Supplier / Service provider. (Vice versa)
  - Once both the party (HGL & supplier) agrees to the business initiation, formal meeting/ telephonic discussions will be held b/w both the representatives.
  - After provisional understanding about suitability of supplier capabilities to provide service / material as per HGL requirement, COC to be shared by HGL with supplier
  - COC to be signed by Supplier and returned back to HGL for review and confirmation.
  - Once COC approved, formal evaluation programme will be scheduled in mutual agreement regarding dates.
  - Energy Efficiency shall be considered as important aspect during procurement applicable header items (RM, PM, Fuel)**
  - Supplier Evaluation Form (PUR-F-003) to be shared by HGL with supplier for Self-assessment.
  - Same form to be verified against evidences during physical / remote audit.
  - Audit to be conducted by HGL Quality / Purchase representative at supplier end.
  - After completion of Audit, Action plan to be prepared to fill gaps, Time line for closing gaps to be mutually agreed.
  - Once actions are completed as per plan, supplier needs to submit it along with evidences to HGL.
  - HGL auditor will verify actions and evidences for its effectiveness.

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- HGL specification to be shared with supplier for sign off by supplier.
- Once this is approved, sampling process will start.
- In Case of RM, raw material receiving inspection (BHF-DI-003) procedure to be followed during sample inspection.
- In case of PM, Incoming Inspection Procedure (QAQC-DI-003) to be followed during sample inspection.
- After sample approval, initial three lots (possible minimum quantity) to be analysed for acceptance and timely delivery.
- After successful completion of initial three deliveries supplier to be termed as approved vendor and same needs to be amended in approved vendor list PUR-L-001.
- For all approved vendors, Vendor Performance Monitoring (PUR-F-002) to be followed on yearly / half yearly / quarterly basis
- In case of process / design change at supplier end, re-evaluation audit needs to be scheduled as per same procedure.

- 7. Related Documents/Records :**  
 Supplier Evaluation Form (PUR-F-003)  
 raw material receiving inspection (BHF-DI-003)  
 Incoming Inspection Procedure (QAQC-DI-003)  
 approved vendor list PUR-L-001  
 Vendor Performance Monitoring (PUR-F-002)

**8. Revision Record :**

Rev Number	Revision Description	Rev Date	Issued to
00	Synchronisation as per IMS document control procedure P/PUR/002.	01/01/2023	None
01	Update of added	01/01/2024	None

Prepared by		Approved by	
Dharmendra Dubey	Purchase Manager	N A Shetty	Purchase Head

## Action Plan to Expand Green Supply Chain

Initiative	Details
<b>Cleaner Material Sourcing</b>	Will develop suppliers who source their materials using environmentally responsible methods. Audit & help vendors in their green initiative.
<b>Lower transport Emissions</b>	This can involve sourcing materials from nearby suppliers to reduce carbon emissions due to transportation and delivery. Reduce emissions by using more efficient transportation systems and cleaner alternative fuels.
<b>Logistic Optimization</b>	By strategically locating distribution facilities and optimizing truckloads to reduce empty trailer space. Will try to lower transit mileage and reduce environmental footprint.
<b>Certifications</b>	Will avoid engaging with suppliers that use banned products or materials by requesting certain types of certifications.

# ◆ Energy Monitoring System

<b>ENERGY MONITORING FORMAT</b>														
<b>Sr. No</b>	<b>Description</b>	<b>Average (From Apr to March )</b>	<b>April</b>	<b>May</b>	<b>June</b>	<b>July</b>	<b>Aug</b>	<b>Sept</b>	<b>Oct</b>	<b>Nov</b>	<b>Dec</b>	<b>Jan</b>	<b>Feb</b>	<b>Mar</b>
1	Glass Draw (MT) Average													
2	Cullet %													
3	Power Consumption (GEB)													
4	Power Consumption (DG)													
5	Power Consumption (CPP)													
6	Total Power Consumption													
7	Power consumption Per Ton Glass (KWH/Ton)													
8	CPP Gas													
9	CPP SFC													
10	Dist + FH + Lehr - Total Gas													
11	Furnace Melter Gas													
12	Furnace Gas/Ton (SCM/Ton)													
13	Total Gas (Fur + FH + Lehr + CPP)													
14	Other Gas (Foundry + Canteen+ ACL)													
15	Plant Total Gas consumption													
16	Plant Total Gas & Oil Per Ton													
17	Plant WE + FH + Lehr Gas per Ton													
18	Furnace Oil													
19	Total Energy Consumption MKCAL													
20	Energy For Glass (KCAL / MT)													





# ◆ Net Zero Commitment

## Haldyn Glass Committed to achieve Net Zero by 2035

Sr. No.	Initiatives	Details
1	Use of renewal energy.	Have plan to get 100 % electrical power from Renewable sources.
2	Reduction of energy consumption.	Energy saving initiatives is a contineous process.
3	Carbon credit.	Will try to trade carbon.
4	Use of alternative fuel	Oxy Fuel furnace, Electric forehearths
5	Increased Glass Recycling.	Will use maximum glass cullet.
6	Other Initiative	Conservation forests (without the use of wood) Developing Forests with selective Harvesting. (Tree plantation)

**We will continuously scout new technology to explore avenues for energy conservation.**

# ◆ Environmental Initiatives



Returning to the Mother Earth - Ground Water Recharging

Prepared Rain Water Harvesting well for Land Charging  
– 03 Nos in plant premises

# Tree plantation drive for Environment



*Thank You*



**Contact Us:**

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*Mr. Deepak Gaikwad – 9970053925*

*Mr. Deepak Singh - 8758907003*