SAGAR CEMENTS LIMITED

GUDIPADU UNIT

CII National Award for Excellence in Energy Management
2023: 13- 15 September 2023, HICC, Hyderabad

Team members

1. V V Prasad/GM-Operations
2. K Jagadeeshwara reddy/ Manager

Introduction

Sagar Cements LTD- Gudipadu (Acquired from BMM cements in April-2015)

Clinker Capacity :1.0 mtpa (3000 TPD) & Cement Capacity – 1.35 mtpa

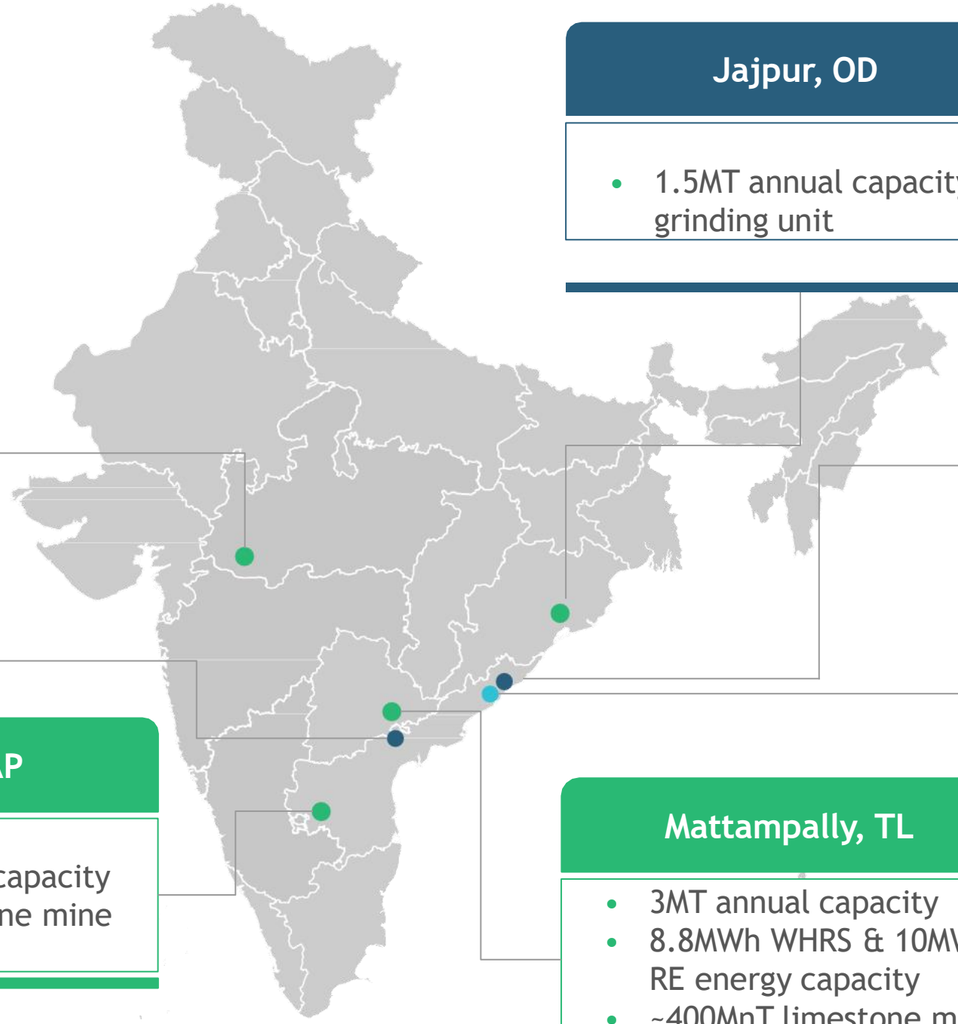
Captive power plants (CPP) CPP 25 MW
Mines with reserve of 129.16 MT.

Product spectrum

a. *Ordinary Portland cement (OPC) includes 43 & 53 grade*
b. *Portland Pozzolana Cement (PPC) (GreenPro certified)*
c. *Portland Slag Cement (PSC) (GreenPro certified)*
d. *Special grade cement Insta power cement (IPC)*

Context | SCL achieved >10 MTPA capacity with the acquisition of ACL

Potential to unlock value through initiatives to drive future growth



Jeerabad, MP

- 1 MT annual Capacity
- 5.3MWh WHRS
- 65MnT limestone mine spread across pockets

Dachepalli, AP

- 1.8MT annual capacity
- 30MW thermal CPP capacity
- ~200MnT limestone mine

Gudipadu, AP

- 1.35MT annual capacity
- 166MnT limestone mine

Jajpur, OD

- 1.5MT annual capacity grinding unit

Mattampally, TL

- 3MT annual capacity
- 8.8MWh WHRS & 10MW RE energy capacity
- ~400MnT limestone mine

Bayyavaram, AP

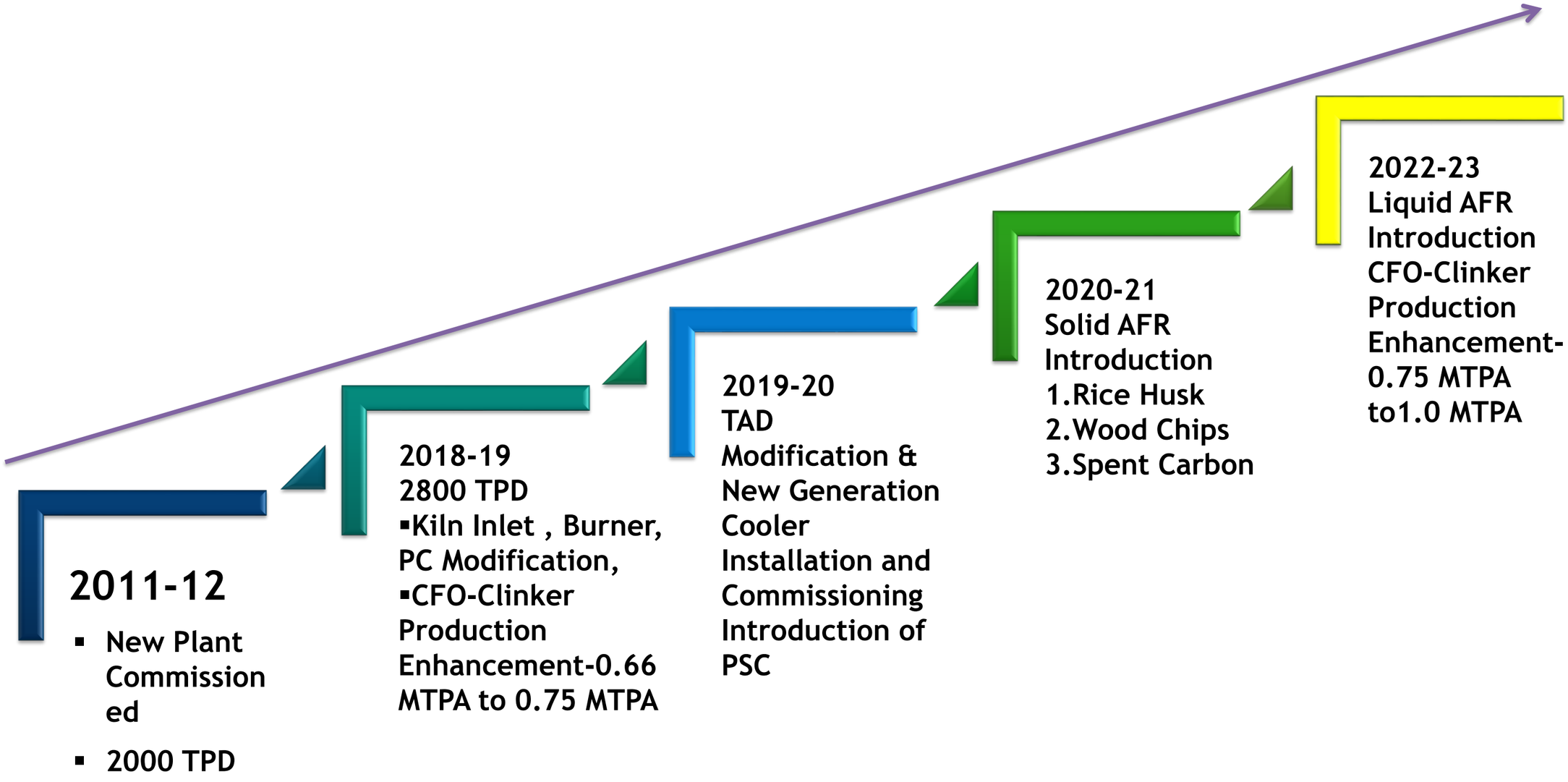
- 1.5MT annual capacity grinding unit
- 8.43 RE energy capacity installed

- 0.8MT annual capacity grinding unit

Sagar Cement *Andhra Cement (Acquired)* *Grinding Unit (Toshali Cement)*

Source: SCL Annual report, Management discussions; BCG analysis

MILESTONES


2011-12
New Plant Commissioned
2000 TPD
2018-19
2800 TPD
Kiln Inlet , Burner, PC Modification,
CFO-Clinker Production Enhancement-0.66 MTPA to 0.75 MTPA
2019-20
TAD Modification & New Generation Cooler Installation and Commissioning
Introduction of PSC
2020-21
Solid AFR Introduction
1.Rice Husk
2.Wood Chips
3.Spent Carbon
2022-23
Liquid AFR Introduction
CFO-Clinker Production Enhancement-0.75 MTPA to1.0 MTPA

Specifications of Major Sections

Particulars	Design Parameters
Make & Model	M/s. Promac & TI PM 16x15
Type	Impact Crusher
Capacity	350 TPH
Feed Material	Lime Stone
Inlet feed Size	1000 x 10000 x 1000 mm
Product Size	- 60 mm
Motor Power	500 kW

Particulars	Details
Make	Promac-AVM-320
Capacity	90 TPH
Grinding table f	3200 mm
Roller diameter	2240 mm
No. of rollers	3
Gear box make	SEISA Gear Ltd.,-Japan
Model	BPP125V
Ratio	1/29.02
Power	1500 KW
Input speed	960
Output speed	33.08
Classifier type	SNU
Rotor diameter	2400mm
Motor	55 Kw
Output speed	196 rpm

Particulars	Details
Preheater	
Model	Six Stage suspension(DDF/RSP) Pre-heater
Calciner diameter	3470 mm
TA Duct diameter	2100 mm
TA Duct length	64 M
Preheater Fan	
Model	KBZ-180-800010-252(DIDW)
Make	REITZ india Ltd.,
Capacity	450000 CUM./Hr.
Inlet temp.	400oc
Motor	1500 Kw
Speed	992
Kiln	
Make /Capaciyu	Promac/3000TPD
Diameter	3.4 Mtr
Length	53 Mtr
Slope	3.50%

Particulars	Details
Clinker Cooler	
Make	FLS Cross Bar cooler
Type	CB 10 x 39 with ABC inlet
Capacity	3000 TPD
Grate area	65.2 Sq m
Cooling fan -ABC inlet	132 kW
Chamber Cooling fans	2 x110 Kw
Chamber Cooling fans	2 x132 Kw
Chamber Cooling fans	2 x160 Kw
Clinker Breaker	Hydralic roller breaker
Model	MF-310.
Motor	18.5 Kw-for Tr-1
	22 Kw-for Cr-1
	22 Kw-for Cr-2

Particulars	Design Parameters
Mill Type	Ball mill
Make	Promac
Type	Closed circuit
Capacity TPH	150
Mill length (m)	17.50
Mill Dia (m)	4.40
Mill speed (RPM)	14.80
Motor power (kW)	2500 x 2
High efficiency classifier Make	Promac
Classifier model	Dynamic

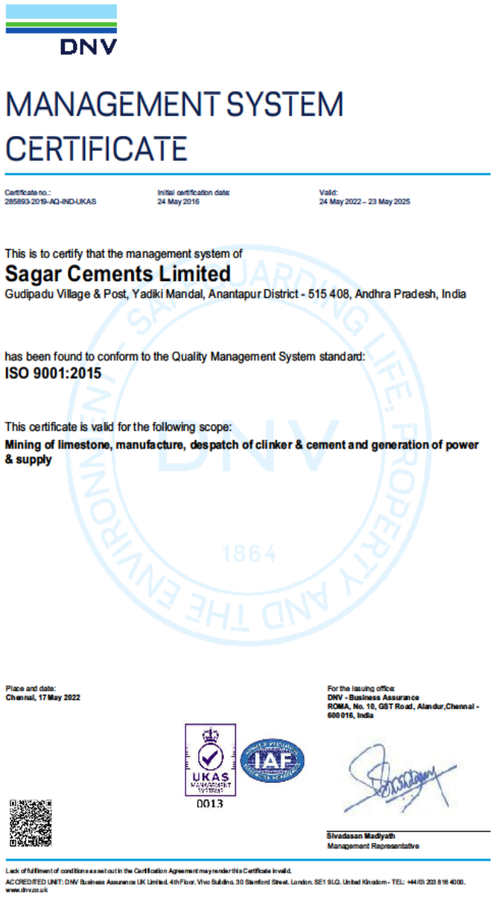
Particulars	Design Parameters
Make	Promac
Type	AVM-200
Capacity TPH	23 TPH
Grinding table ϕ	2000 mm
Roller diameter	1400 mm
No. of rollers	3
Gear box make	ELECON
Type-size	KPAV-80
Ratio	20.70:1
Power	300 KW
Input speed	980
Output speed	47.26
Classifier type	Dynamic
Rotor diameter	2000 mm
Motor	**37 KW**
Output speed	**300**

MANAGEMENT SYSTEMS

Sagar Cements Ltd., Gudipadu unit is IMS certified ;

- Quality Management System : ISO 9001- 2015
- Environmental Management System : ISO 14001 - 2015
- Occupational Health & Safety : ISO 45001 - 2018
- Energy Management System : ISO 50001 - 2018

IMS allows the management team to create one system that can help to effectively and efficiently deliver organizational goals.



DNV

MANAGEMENT SYSTEM CERTIFICATE

Certificate no.: 285893-2019-AQ-IND-UKAS | Initial certification date: 24 May 2016 | Valid: 24 May 2022 – 23 May 2025

This is to certify that the management system of

Sagar Cements Limited

Gudipadu Village & Post, Yadiki Mandal, Anantapur District - 515 408, Andhra Pradesh, India

has been found to conform to the Quality Management System standard:

ISO 9001:2015

This certificate is valid for the following scope:

Mining of limestone, manufacture, despatch of clinker & cement and generation of power & supply

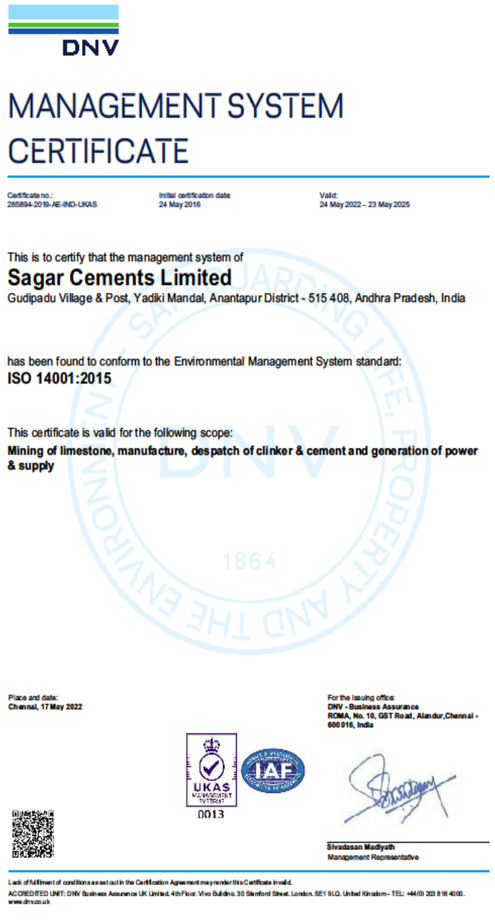
Place and date: Chennai, 17 May 2022

For the issuing office: DNV - Business Assurance, ROMA, No. 10, GST Road, Alandur,Chennai - 600 016, India

Sivadasan Madiyath, Management Representative

Lack of fulfilment of conditions as set out in the Certification Agreement may render this Certificate invalid.

ACCREDITED UNIT: DNV Business Assurance UK Limited, 4th Floor, Vivo Building, 30 Stamford Street, London, SE1 9LQ, United Kingdom - TEL: +44(0) 203 816 4000. www.dnvgl.co.uk



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Certificate no.: 285894-2019-AE-IND-UKAS | Initial certification date: 24 May 2016 | Valid: 24 May 2022 – 23 May 2025

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Sagar Cements Limited

Gudipadu Village & Post, Yadiki Mandal, Anantapur District - 515 408, Andhra Pradesh, India

has been found to conform to the Environmental Management System standard:

ISO 14001:2015

This certificate is valid for the following scope:

Mining of limestone, manufacture, despatch of clinker & cement and generation of power & supply

Place and date: Chennai, 17 May 2022

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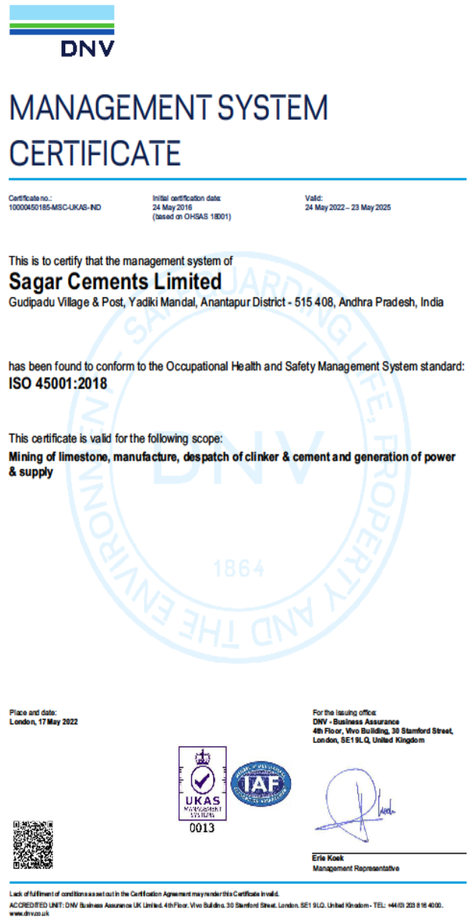


DNV

MANAGEMENT SYSTEM CERTIFICATE

Certificate no.: 10000450185-MSC-UKAS-IND | Initial certification date: 24 May 2016 (based on OHSAS 18001) | Valid: 24 May 2022 – 23 May 2025

This is to certify that the management system of

Sagar Cements Limited

Gudipadu Village & Post, Yadiki Mandal, Anantapur District - 515 408, Andhra Pradesh, India

has been found to conform to the Occupational Health and Safety Management System standard:

ISO 45001:2018

This certificate is valid for the following scope:

Mining of limestone, manufacture, despatch of clinker & cement and generation of power & supply

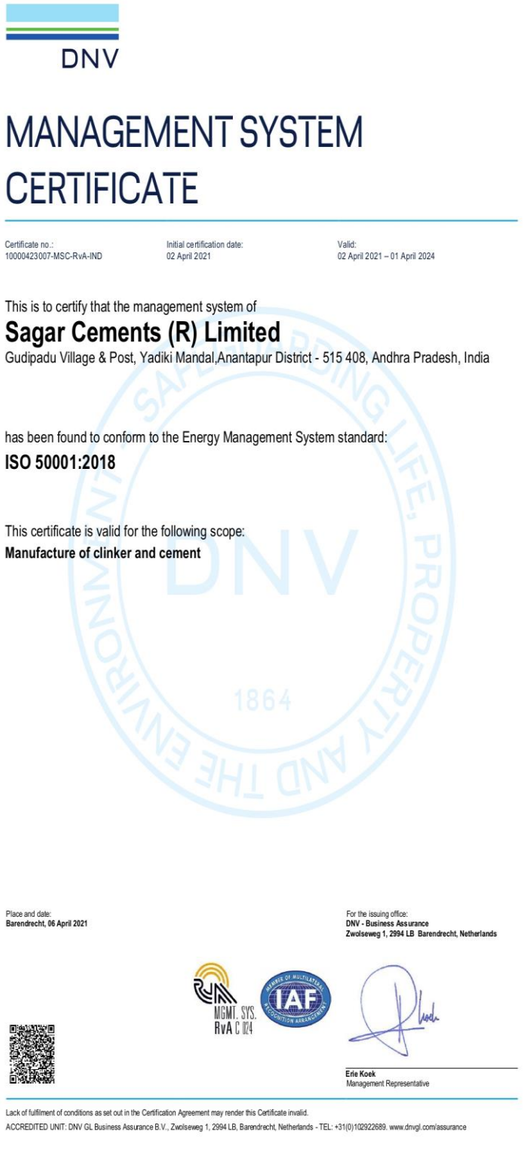
Place and date: London, 17 May 2022

For the issuing office: DNV - Business Assurance, 4th Floor, Vivo Building, 30 Stamford Street, London, SE1 9LQ, United Kingdom

Erle Koek, Management Representative

Lack of fulfilment of conditions as set out in the Certification Agreement may render this Certificate invalid.

ACCREDITED UNIT: DNV Business Assurance UK Limited, 4th Floor, Vivo Building, 30 Stamford Street, London, SE1 9LQ, United Kingdom - TEL: +44(0) 203 816 4000. www.dnvgl.co.uk



DNV

MANAGEMENT SYSTEM CERTIFICATE

Certificate no.: 10000423007-MSC-RvA-IND | Initial certification date: 02 April 2021 | Valid: 02 April 2021 – 01 April 2024

This is to certify that the management system of

Sagar Cements (R) Limited

Gudipadu Village & Post, Yadiki Mandal,Anantapur District - 515 408, Andhra Pradesh, India

has been found to conform to the Energy Management System standard:

ISO 50001:2018

This certificate is valid for the following scope:

Manufacture of clinker and cement

Place and date: Barendrecht, 06 April 2021

For the issuing office: DNV - Business Assurance, Zwolseweg 1, 2994 LB Barendrecht, Netherlands

Erle Koek, Management Representative

Lack of fulfilment of conditions as set out in the Certification Agreement may render this Certificate invalid.

ACCREDITED UNIT: DNV GL Business Assurance B.V., Zwolseweg 1, 2994 LB, Barendrecht, Netherlands - TEL: +31(0)102922689. www.dnvgl.com/assurance

Management System - Certification

Confederation of Indian Industry

CII-Green Products and Services Council

hereby certifies that

Portland Pozzolana Cement (PPC)

(GPSCL91001)

Manufactured by Sagar Cements® Limited at Gudipadu, Andhra Pradesh meets the requirements of GreenPro Ecolabel and qualifies as Green Product.

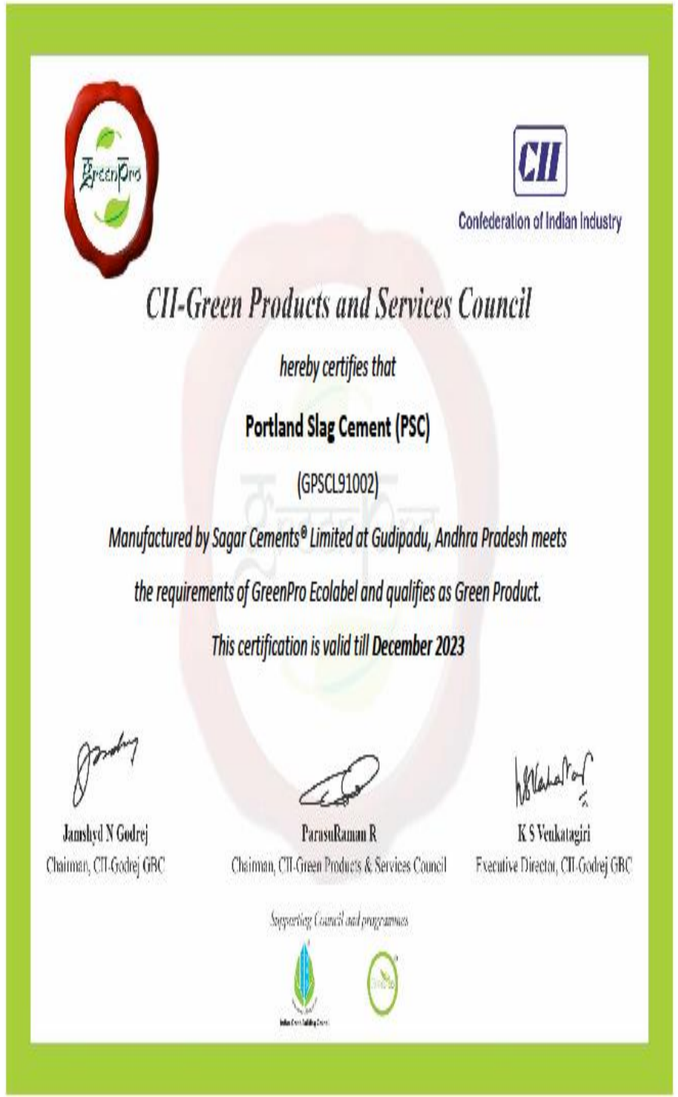
This certification is valid till **December 2023**

Jamshyd N Godrej
Chairman, CII-Godrej GBC

ParasuRaman R
Chairman, CII-Green Products & Services Council

K S Venkatagiri
Executive Director, CII-Godrej GBC

Supporting Council and programmes



Confederation of Indian Industry

CII-Green Products and Services Council

hereby certifies that

Portland Slag Cement (PSC)

(GPSCL91002)

Manufactured by Sagar Cements® Limited at Gudipadu, Andhra Pradesh meets the requirements of GreenPro Ecolabel and qualifies as Green Product.

This certification is valid till **December 2023**

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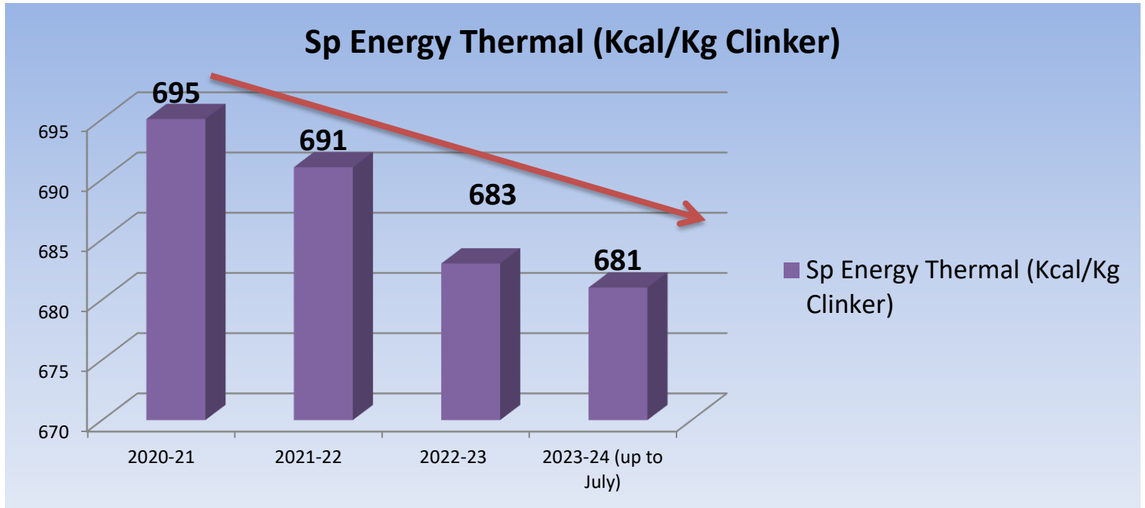
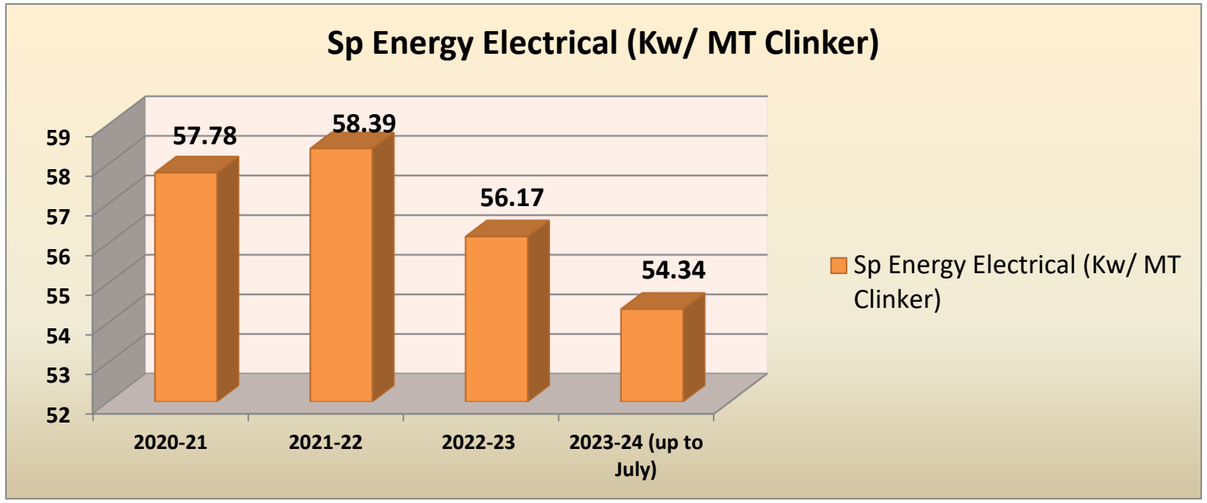
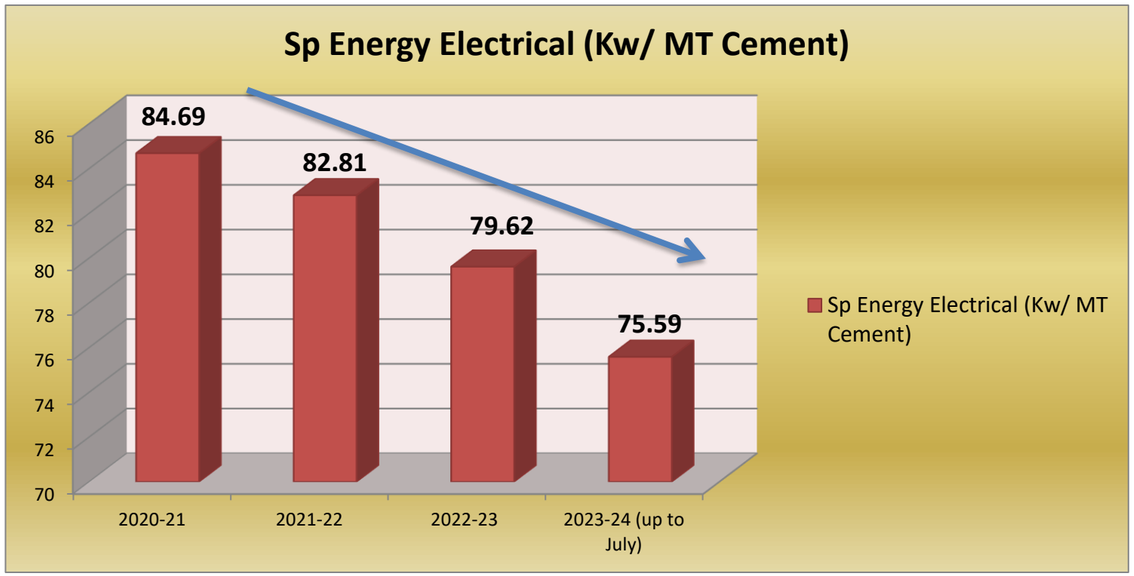
Executive Director, CII-Godrej GBC

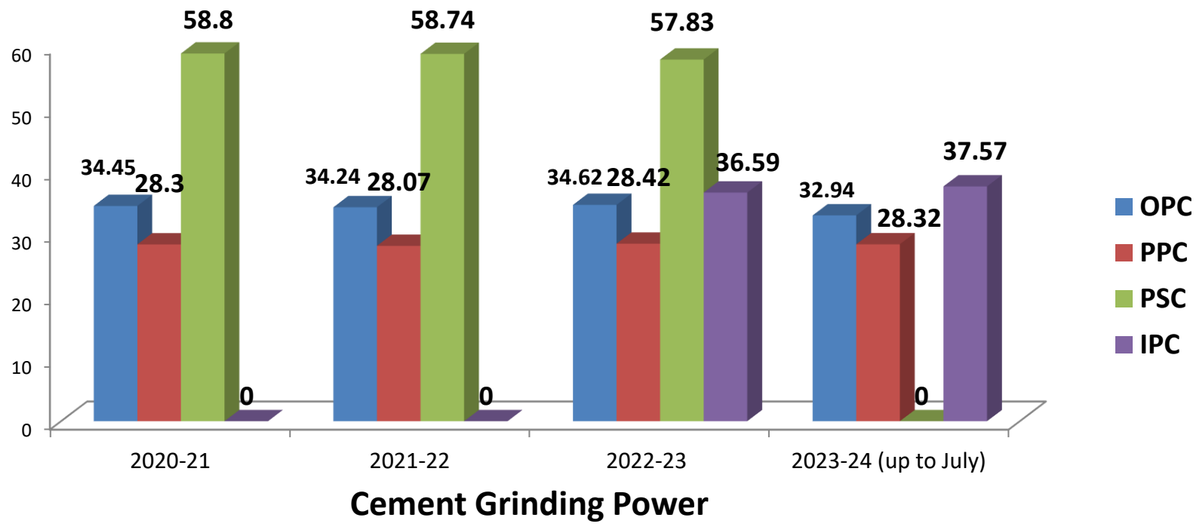
Supporting Council and programmes

Reduction in energy consumption

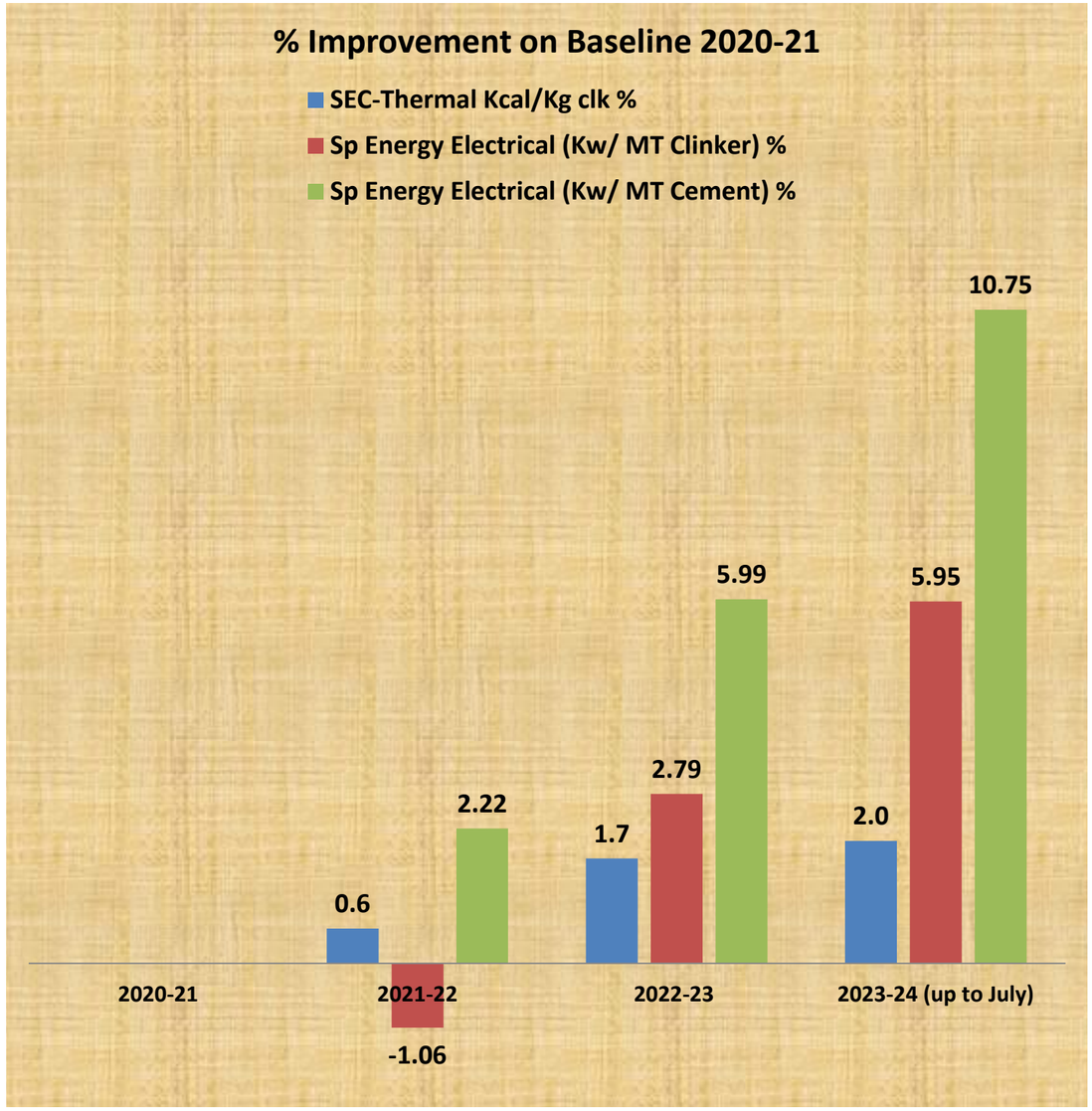


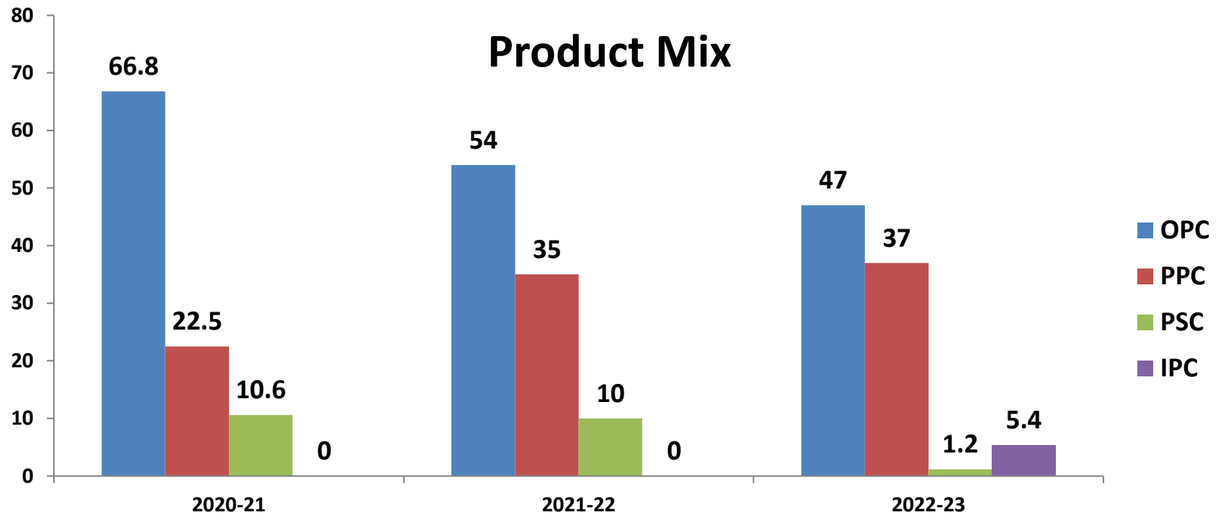


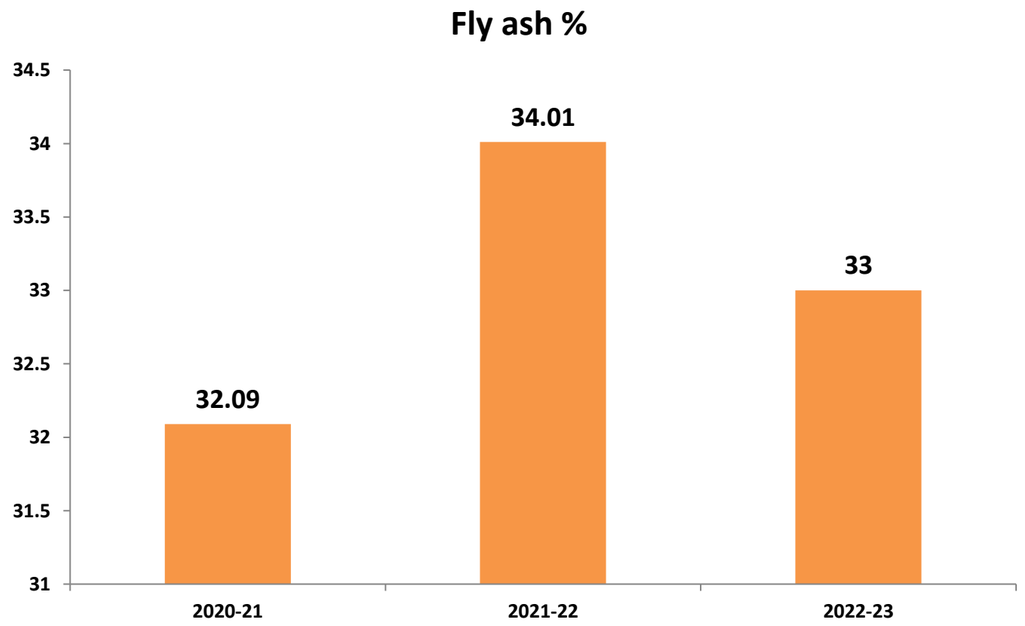




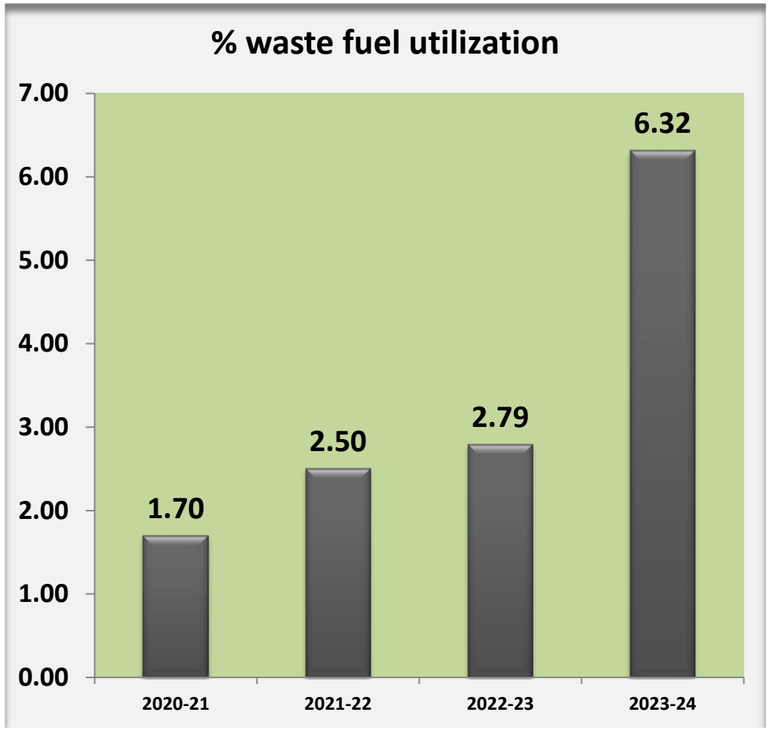
Reduction in energy consumption

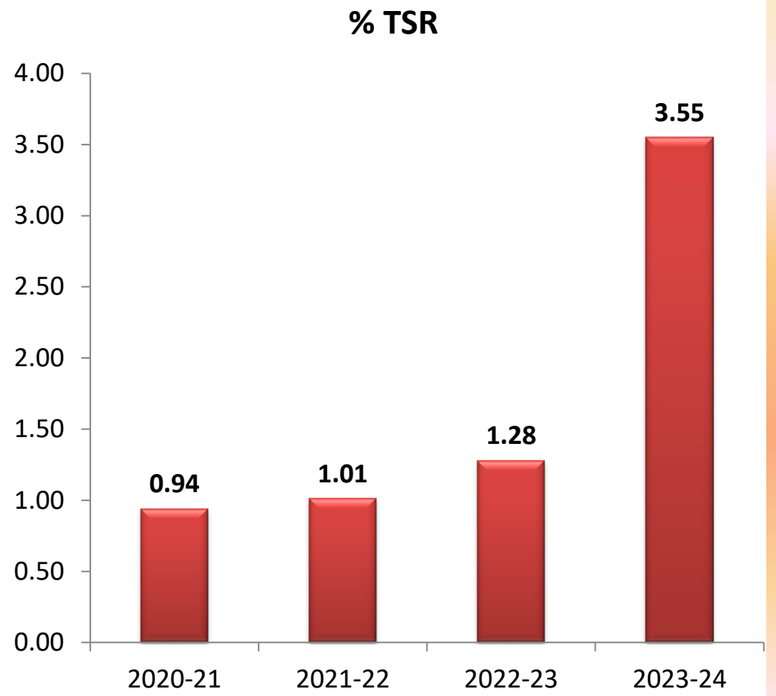


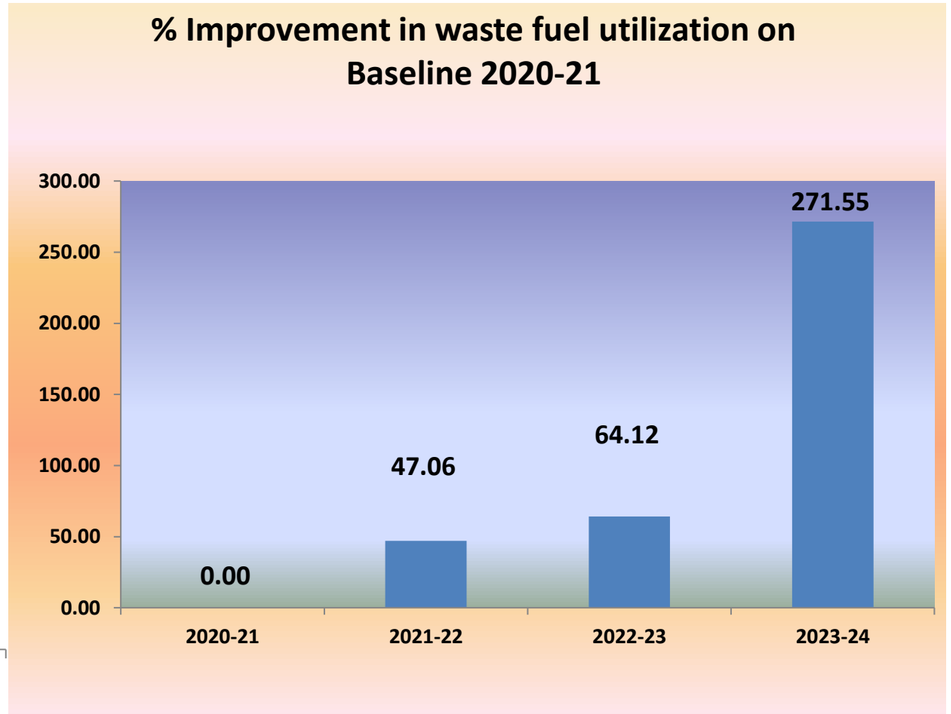




Waste Utilization management

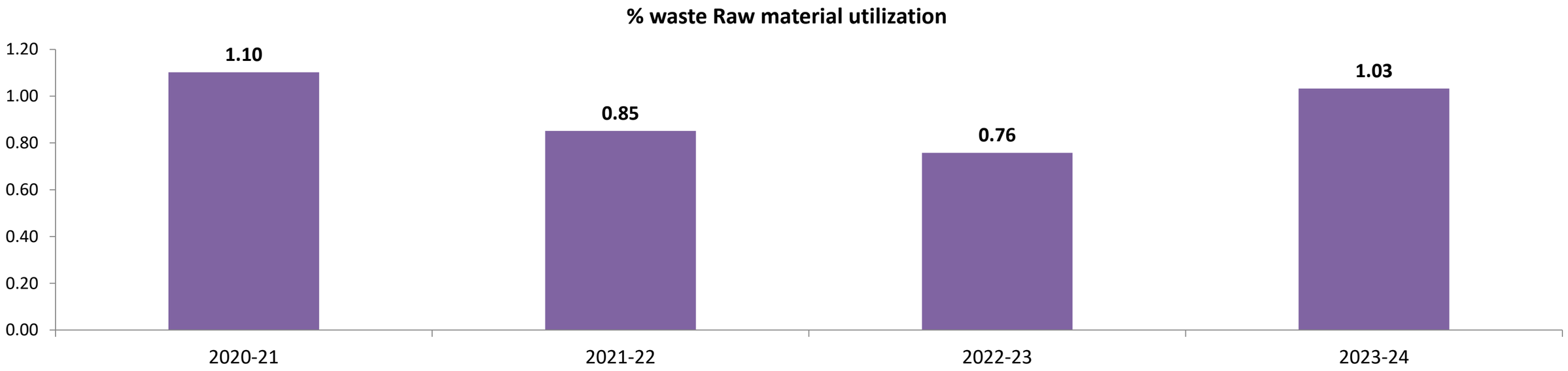






Sr.No	Year	DOLACHAR	SPENT CARBON (Schedule 28.3)	ORGANIC RESIDUE (Schedule 28.1)	ORGANIC WASTE (Schedule 35.3)	WOODEN CHIPS / POWDER	GCV	Waste As % of Total fuel
1	2020-21	0	1219.00				2583	1.7
2	2021-22	1013.00	1192.00				2259	2.5
3	2022-23	1524.00	499.16	787.00	1285.00	21.84	2498	2.79
4	2023-24	380.00	80.00	1285.00	1030.00		2232	6.32

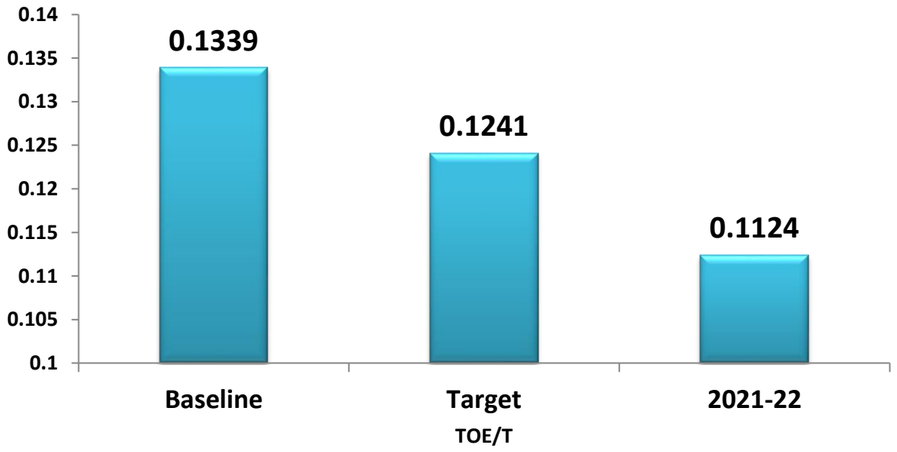
Waste Utilization management



Alternative Raw Material	UOM	2023-24	2022-23	2021-22	2020-21	Replaced Material
RED MUD	TONS	883	0	6834	9336	Bauxite
BED ASH	TONS	0	1628	161	2135	Bauxite
DOLAMITE	TONS	1115	1465	2441	NILL	
CHROME SLUDGE (WET) (38.1)	TONS	3118	8207	NILL	NILL	Bauxite
Lime stone consumption	TONS	453924	1364157	1030923	948253	
Natural raw material(Additives)	TONS	36531	116118	67966	80881	
Alternative Raw material	TONS	5116	11300	9436	11471	
Alternative Raw material %	TONS	**1.03**	**0.76**	**0.85**	**1.10**	

Plant Achieved & Bench markings-CII

S.No	Section	Unit	Specific energy Consumption	Bench markings-CII
1	Crusher	Kwh/MT Limestone	1	0.57
2	Raw Mill	Kwh/Raw meal	16.4	10.64
3	Kiln	Kwh/MT Clinker	18.5	15.45
4	Coal mill	Kwh/MT Coal	32.6	33.89
5	Specific heat consumption	Kcal/Kg clinker	682	675
6	Clinker power-Six Stage	Kwh/MT Clinker	55.5	42.6
7	Green House gas emissions	Kg CO2/MT Cement	642	493



Total 7114 No's of EScerts achieved for PAT cycle-V

Targets In short term & Long Term

INTERNAL BENCH MARKING								
S.No	**Objectives**	**KPIs**	**Unit of measurement**	**2019-20**	**2020-21**	**2021-22**	**2022-23**	**Target FY 2023-24**
1	Ensuring relaibility in production	Raw mill-1 production	TPH	102.72	102.15	105.20	112.44	110.00
		Raw mill-2 production	TPH	102.82	102.42	105.90	106.64	
		Kiln production	TPH	126.01	121.20	125.10	126.89	127.00
		Coal mill production	TPH	14.45	15.64	17.20	18.66	19.00
2	Cost reduction in production	Refractory consumption	Kg/Ton of clinker	0.479	0.482	0.505	0.191	0.190
		Diesel consumption	KL	41	46.43	23.5	25.52	23.00
3	Energy Conservation	Raw mill-1 specific power consumption	KWH/Ton of Material	19.38	19.07	20.14	18.91	18.50
		Raw mill-2 specific power consumption	KWH/Ton of Material	18.57	19.38	19.60	18.57	
		Kiln specific power consumption	KWH/Ton of Material	23.39	23.78	22.80	22.25	22.00
		Coal mill specific power consumption.	KWH/Ton of Material	38.70	33.74	33.72	31.62	32.50
		Specific heat consumption	K.cal/Kg Clinker	689.4	695.6	690.6	682.7	682.0
		Specific power consumption upto clinker	KWH/Ton of Material	57.38	57.78	58.39	56.17	55.5
4	Environment	G.H.G Emmission (Scope-1,2,3)	Kg.Co2/T.Cementisious	817	803	789	775	700
5	100 % safe work with zero accidents	Reporting of Accidents / Incidents	Nos.	0	0	0	0	0

Roadmap for reduction by year 2030 and finally becoming Net Zero by year 2050

Identifying Source

***Identify bye-products**:*

1. *Increased use of de-carbonated raw materials, Target - 2% by 2030 and 5% by 2050*
2. *To collaborate with authorities, policy makers to develop & put in place the infrastructure pre-processing of waste materials.*
3. *To up-skill plant team so that they confident and comfortable in using the waste without impacting the product quality and system efficiency*
4. *To take support from domain experts and other companies, countries who are ahead in the use of waste.*

Developing Infrastructure

Increased use of Alternate fuels for pyro process. 20% by 2030 and 50% by 2050

1. *To develop cultural change and infrastructure to use waste in the kiln & Preheater.*
2. *To collaborate with waste generating industries to develop standard operating procedures (SOP) to achieve consistency in chemistry and other parameters of the waste that are being generated and are being supplied*
3. *To develop and install the necessary infrastructure at the plant premises for unconstrained use of waste materials.*
4. *Promoting the use of blended cements*

Administration Control

1. *Conducting the Review Meetings for target setting of AFR and Alternative Raw material Usage*
2. *Installing on-site solar power plants of additional capacity.*
3. *Increased ratio of Green Energy. 10% by 2030 and 50% by 2050*
4. *Use of EV, Fuel cell, hybrid vehicles for material transport. 30% by 2030 and 100% by 2050 .*
5. *Replacing the identified low efficiency process systems by conducting CFD studies.*
6. *upgrade the plant machinery to accept waste materials without constraints. Installation of pre-combustion chamber etc.*

Summary of Energy saving Initiatives (FY 2020 to 2023)

Year	No Of Energy Saving Project	Investment (INR Million)	Electrical Savings (MKwh)	Thermal Savings (Million Kcal)	Impact on SEC/SHC
FY 2020-21	6	0.3	0.09		0.8 Kwh/Mt cement
FY 2021-22	7	0.54	0.40		1.03 KWh/MT Cement
FY 2022-23	4	0.26	0.17	1200	0.45 Kwh/Mt cement

Energy saving Initiatives

Year	Sr.no	Project	Year of Implementation	Annual Energy consumption (before),KWH	Annual Energy consumption(before),TOE	Annual Energy consumption(after),KWH	Annual Energy consumption (after),TOE	Annual Energy Saving in Lakh kWh	Annual Energy Saving in toe	Energy Cost (Rs per kWh)	Investment , Lakh Rs
FY 20-21	1	CPP-CONTROL LOOP DEVELOPED CEP SPEED THROUGH CRT LEVEL	20-21	411840.0	132.1	293040.0	94.0	1.2	38.1	7.5	0.0
	2	CPP-HOT WELL TR PUMP VFD (4KW)	20-21	15840.0	5.1	11642.4	3.7	0.0	1.3	7.5	0.4
	3	Installed VFD for Cement Mill Exhaust Bag Filter Fan	20-21	161642.0	51.9	132084.6	42.4	0.3	9.5	7.5	1.5
	4	Installation of VFD for Raw Mill Silo Top Bag filter	20-21	76465.3	24.5	31860.5	10.2	0.4	14.3	7.5	1.5
	5	CPP-ACW PR REDUCED 3.7 Kg/sqcm from 4.0 kg/sqcm (While operating low ash coal) (7400 Hrs)	20-21	799200.0	256.4	710400.0	227.9	0.9	28.5	7.5	0.0
	6	IE2 to IE3 replacement	20-21	300986.0	96.6	293628.0	94.2	0.1	2.4	7.5	3.1

Energy saving Initiatives

Year	Sr.no	Project	Year of Implementation	Annual Energy consumption (before),KWH	Annual Energy consumption (before),TOE	Annual Energy consumption (after),KWH	Annual Energy consumption (after),TOE	Annual Energy Saving in Lakh kWh	Annual Energy Saving in toe	Energy Cost (Rs per kWh)	Investment, Lakh Rs
FY 21-22	1	CPP-BC 4 BELT LIGHTING WHEN EVER REQUIRED ON / OFF	21-22	3784.3	1.2	1892.2	0.6	0.0	0.6	7.5	0.0
	2	CPP-OPTIMISATION OF ACW POWER THROUGH MANUALLY CONTROLED ACW WATER TO HEAT EXCHANGER OF BED ASH COOLER ON REQUIREMENT (While operating low ash coal)(580Hrs)	21-22	55680.0	17.9	45240.0	14.5	0.1	3.3	7.5	0.0
	3	CPP-Chp Dust Extraction Blower motor Rpm Reduced 1480 to 960 (45 kw to 37 kw)	21-22	20000.0	6.4	12000.0	3.8	0.1	2.6	7.5	0.3
	4	Rabh individual chambers high &low level sensors arranged and Rabh individual chambers high &low level sensors arranged and	21-22	59483.9	19.1	7435.5	2.4	0.5	16.7	7.5	5.2
	5	Reduction of PC and KC Coal conveying RPM as per phase density	21-22	409533.6	131.4	312396.8	100.2	1.0	31.2	7.5	0.0
	6	Arresting of false air in both raw mills	21-22	6744648.0	2163.7	6550177.0	2101.3	1.9	62.4	7.5	0.0
	7	Seal air fan discharge duct size of Both VRMs reduced from 16” to 8”	21-22	242038.0	77.6	210090.2	67.4	0.3	10.2	7.5	0.0

Energy saving Initiatives

Year	Sr.no	Project	Annual Energy consumption (before),KWH	Annual Energy consumption(before),TOE	Annual Energy consumption(after),KWH	Annual Energy consumption(after),TOE	Annual Energy Saving in Lakh kWh	Annual Energy Saving in toe	Energy Cost (Rs per kWh)	Investment , Lakh Rs
FY 2022-23	1	VFD for clinker silo top dust collector	229824	19.76	207184	17.81	0.2264	1.94	7.5	2.6
	2	VFD for RAW Mills surge bin dust collector	155952	13.41	144032	12.38	1.192	1.02	7.5	2.13
	3	Arresting of false air in Raw mill-2 from 31% to 27%	98496	8.47	66356	5.70	0.32	2.76	7.5	6
	4	Municipal and plastic waste feeding in pre heater 4th floor				120		120	7.5	15.38

Major Encon Projects Planned in 2023-24 & 2024-25

Year	Energy Saving Project	Investment (INR Million)	Electrical Savings (MKwh)	Thermal Savings (Million Kcal)	Impact on SEC/SHC
FY 2023-24	2nd cyclone and 3rd cyclone modification	3.5	0.46		0.45 Kwh/ton of material
	High efficiency separator for Raw mill	0.43	0.65		1 Kwh/ton of material
	High efficiency fan for Raw mill	0.3	0.17		0.53 Kwh/ton of material
	Cyclone Modification	0.2	0.26	-	0.34 Kwh/ton of mat
	Installation of Pre grinder for Cement mill				
	WHR installation	15	24.5	57.45	
	RABH High efficiency fan	0.45	0.27		0.144Kwh/Ton of material

Formal Suggestion Scheme

Methodology for Identification of Improvement Projects

Identifying the opportunity → **Suggestion** → **Team Formation** → **Project Execution** → **Recognition**

1.The Suggestion Awards Program is a plan to improve plant operations by appreciating new ideas.
2.It provides a way for you to serve the better by reducing the cost of running the plant operation, decrease the environmental impacts and energy consumption
3.The Proposal must result in more economy, efficiency, or improved services to the plant, or idea may be one which promotes safety, environment, energy, quality or benefits

Problem statement:

1.*It is observed in Raw mill-2, the rejected material is low.*

2.*By making some modification in the reject circuit it will have more scope for the energy conservation.*

3.*In view of continuous operation of reject group, we have installed a bin for feeding on to the reject belt conveyor by placing the level sensors.*

4.*So by placing the level sensors in reject bin the running hours of the reject group is reduced from on average 18 hours to 1 hr 55 min per day.*

5.*By stopping the reject group it also shown affect on reducing false air, the false air reduced from 31% to 27 %.*

Result			
Particulars	Power savings KWH	Running hours on average	Saving (KWH)
Reject Bucket elevator	3.28	6335.1	20779.1
Reject belt	1.01	6430.1	6468.7
Total Savings	4.29	6357.7	27248.9

Result			
Particulars	Power savings before KWH	Power savings after KWH	Saving (KWH)
False air reduced from 31% to 27 %	634	608	26.0
Total Savings	0.22 KWH/Ton of material		

Innovative Improvement Projects

***Statement**: Optimization of Cooling tower fan running hours in cement mill section.*

1.It is observed that the differential temperature of cooling tower water at day time is 4.3 deg on average.

2.It is Observed that the differential temperature of cooling tower water at Night time is 2.8 deg on average.

3.Cooling tower fan stopped from evening 6.00 P.M to morning 8.00 A.M. Without any temperature rise in the cement mill circuit.

***4.**By stopping the cooling tower fan it shown affect on reducing power consumption.*

Result			
Particulars	**Power savings KWH**	**Running hours on average**	**Saving/ Annum (KWH)**
Cooling tower fan	4	3789	15156
Total Savings in Rs	7.2 Rs/Kwh		109123

Innovative Improvement Projects

Problem statement:

1.*It is observed in cement mill and packing plant section 4 compressors are running at present.*

2.*By making some modification in the circuit it will have more scope for the energy conservation.*

3.*In view of continuous loading and unloading of compressors, we have taken initiative for reducing the loading and unloading hours.*

4.*There are 147 bends in the entire section including packing plant and cement mill section.*

5.*By installing the new air line by minimising the bends in the compressor air line we have reduced the compressor loading and unloading time.*

6.By making the modification in the air line saved the loading and unloading hours 4184/annum and units of118894/annum.

7.It shown a huge affect on the loading and unloading hours.

Particular	UOM	2021-22	2022-23	Difference
Loading Hours	Hours	16055	14472	1583
Unloading Hours	Hours	4207	1603	2604
Units	KWH	611967	493072.8	118894

At Sagar Cements, we have always prioritized sustainability. We have been incorporating sustainable practices across our operations – right from improving our operational efficiency and environmental performance, minimising our carbon footprint and reducing waste to empowering people by helping them achieve a successful future for themselves, their families and the communities.

Highlights of the year

Steady performance

Financial

Revenue (₹ in Lakhs)
2,22,954
40% YoY

EBITDA (₹ in Lakhs)
15,318
44% decline YoY

PAT (₹ in Lakhs)
850
86% decline YoY

Operational

Cement Produced (MT)
47,60,282
32% YoY

Green Energy Generated (MWh)
99,484
22% YoY

Capacity Utilisation
58%
(61% in FY22)

Recycled Water (KL)
80,653
105% YoY

Specific Water Consumption (Ltr/Ton)
112
91 Ltr/Ton in FY22

Thermal Substitution Rate (TSR)
3.31%
3,76% in FY22

Environment

Specific Power Consumption (kWh/ton)
77.79
(75.93 in FY22) 12%

Reduction in GHG Emissions (%)
0.4%
9%

Specific CO_2/Tonnes (in)
700.28 kgs
(703.08 in FY22)

Waste Recycled (MT)
10,24,507

Social

Employee Strength
2,907

CSR Spending (₹ in Lakhs)
306
(255 Lakhs in FY22)

Fatalities
Zero

Lives Impacted
69,629
(42,000 in FY22)

Governance

Female Directors on Board
3

Independent Directors on Board
33%

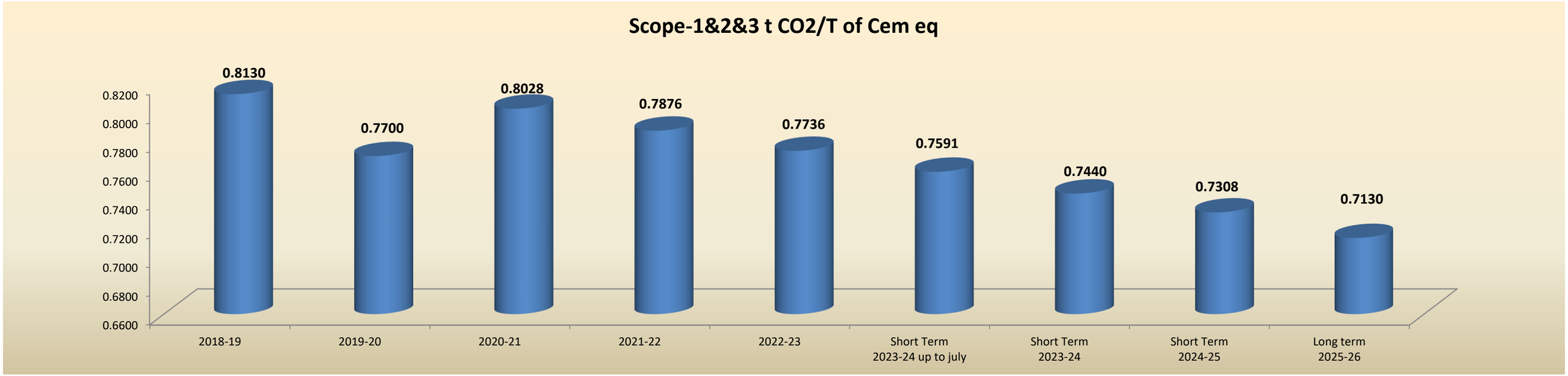
Average attendance at Board meetings
95%

YoY growth YoY decline
** All specific consumption is for cementitious material

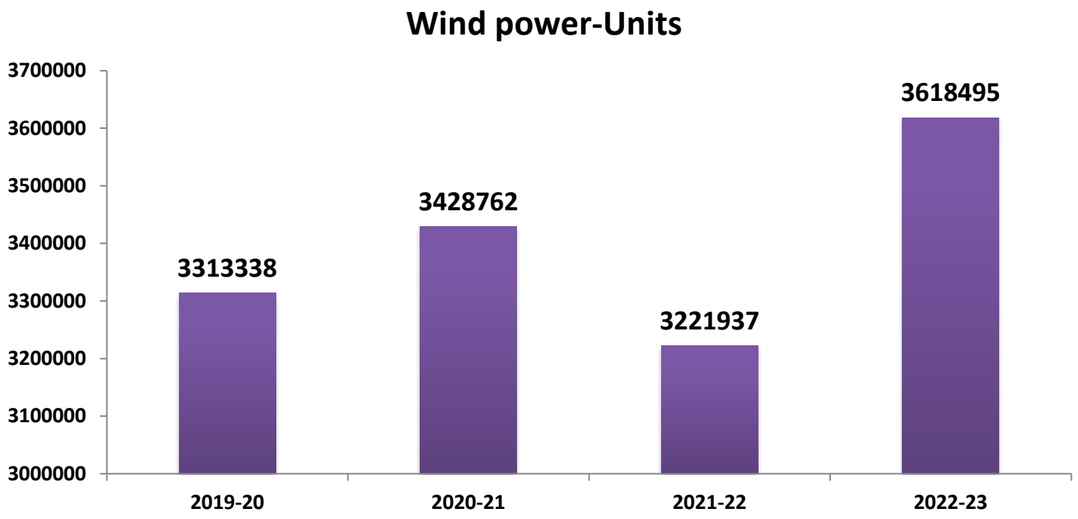
Jeerabad, M.P. Plant

GHG Inventorisation, Scope-1 &2&3

SCOPE	2018-19		2019-20		2020-21		2021-22		2022-23		Short Term 2023-24 up to july		Short Term 2023-24		Short Term 2024-25		Long term 2025-26	
	CO2 [MT]	t CO2/T of Cem eq	CO2 [MT]	t CO2/T of Cem eq	CO2 [MT]	t CO2/T of Cem eq	CO2 [MT]	t CO2/T of Cem eq	CO2 [MT]	t CO2/T of Cem eq	CO2 [MT]	t CO2/T of Cem eq	CO2 [MT]	t CO2/T of Cem eq	CO2 [MT]	t CO2/T of Cem eq	CO2 [MT]	t CO2/T of Cem eq
Scope-1	674508	0.788	653703	0.738	633400	0.762	689701	0.748	860310	0.721	274771	0.679	730217	0.645	769703	0.635	765422	0.619
Scope-2	306	0.0004	6100	0.0069	8836	0.0106	8862	0.0096	36741	0.0308	24377	0.0602	86400	0.0763	89992	0.0742	90152	0.0729
Scope-3	21029	0.025	21968	0.025	25349	0.030	27547	0.030	25904	0.022	7974	0.020	26137	0.023	26106	0.022	25933	0.021
Total	**695843**	**0.813**	**681771**	**0.77**	**667585**	**0.803**	**726111**	**0.788**	**922955**	**0.774**	**307123**	**0.759**	**842754**	**0.744**	**885801**	**0.731**	**881507**	**0.713**



Utilization of Renewable Energy



RVC Wind Firms

Year	RVC Wind forms (100% Share)	Theni Wind forms 100%	Total RE (Gudipadu)	Plant Consumption	% of RE substution
FY 20-21	3428762	3116952	6545714	73177010	8.95
FY 21-22	3221937	3116952	6338889	78371950	8.09
FY 22-23	3618495	3116952	6735447	95635445	7.04

Net Zero Commitment

1. *Efforts are on for increased use of Alternate raw materials replacing natural minerals like Red mud, Iron sludge, chrome sludge etc.*
2. *Efforts are on for increased use of Alternate fuels like, industrial waste, agri waste etc.*
3. *Green energy generation plants are installed for increasing ratio of Green energy by installing;*
   A. Waste heat recovery power plants.
   B. Solar power plants.
   C. Wind power plants.
4. *Efforts are on to increase the blended cements volumes and also higher percentage of waste cementitious materials in the blended cements thereby reducing the clinker factor.*
5. *Efforts are on in promoting / educating the customers about the multilateral benefits of using the blended cements.*
6. *Use of Photoelectric sensor for operating entire plant & colony Lighting.*
7. *Plants are installed closer to the raw materials and closer to the markets to reduce the emission from transport vehicles.*
8. *Efforts are on to use Electric vehicles, hybrid vehicles to reduce the emission from transport vehicles.*

Sagar Cements Ltd purchased Electrical powered Wheel Loader.
The Sagar cements taken initiative 1st in cement industry by purchasing the electrical loader towards commitment of net zero emissions

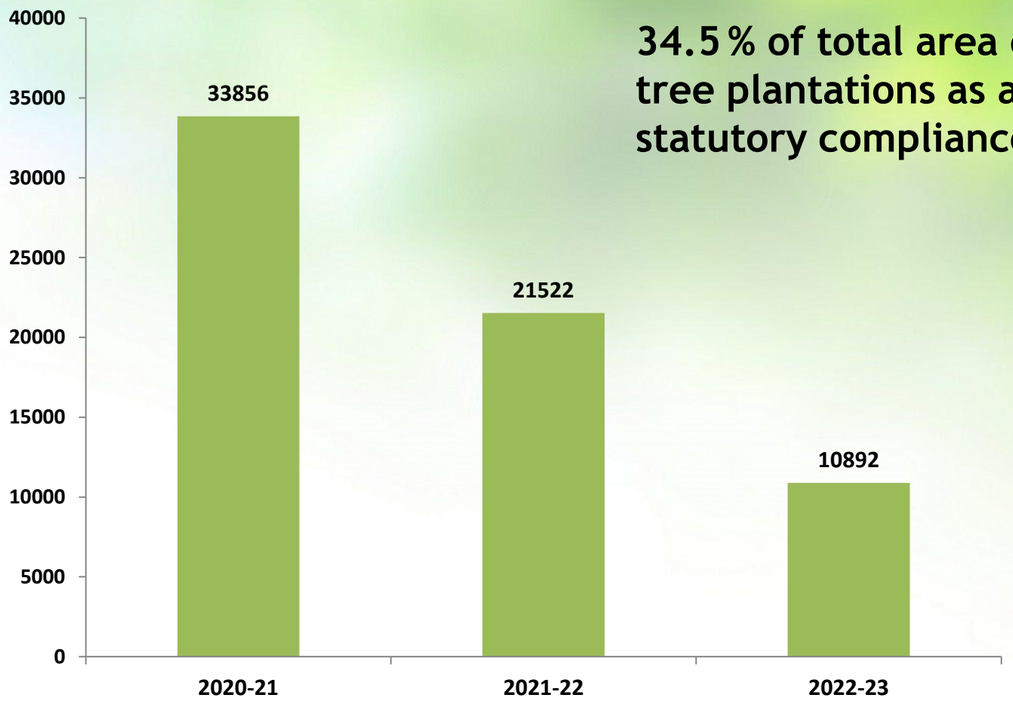
EMS System

Sagar Cements Gudipadu unit having total 200 no's meters connected to EnMS system and also generate auto report and same is communicated to concerned officials through auto generated mails.

Energy monitoring of equipment >or= 1% of total energy

Green Belt Development

Total plants



34.5 % of total area covered with tree plantations as against 33% statutory compliance

Thank You

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