Trusted Technology – Solid Strength

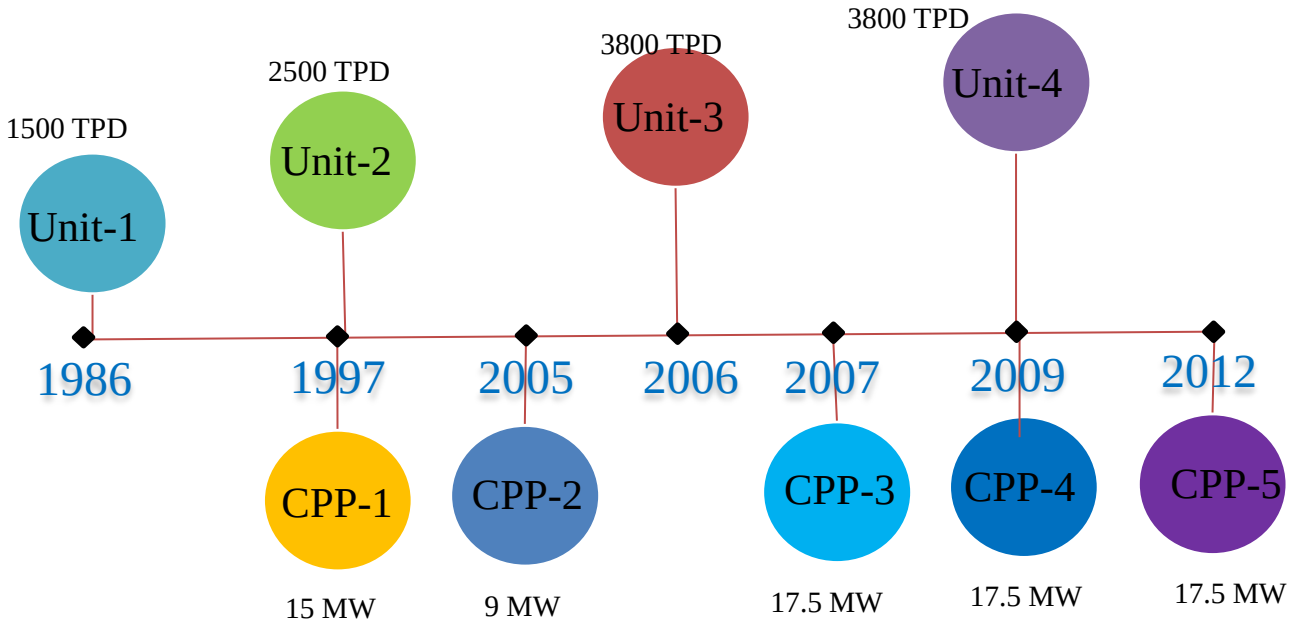
KESORAM INDUSTRIES

Cement Division, Unit: Vasavadatta Cement

An IS/ISO 9001:2015 , 14001:2015

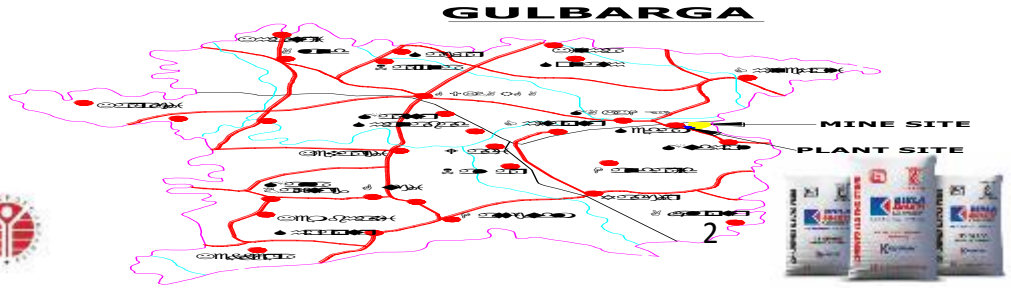
ISO / 45001:2018 / 50001 Company

Mr. Kundan Singh	***GM Mechanical***
Mr. Md Saud Salman	***Manager PQC***
Mr. Sunil Singh	***Energy Manager***



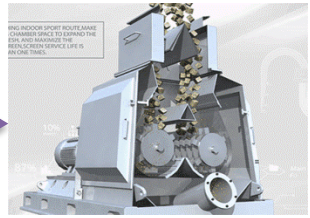
PRODUCTS

KESORAM



Mines

Mines Crusher



Lime Stone

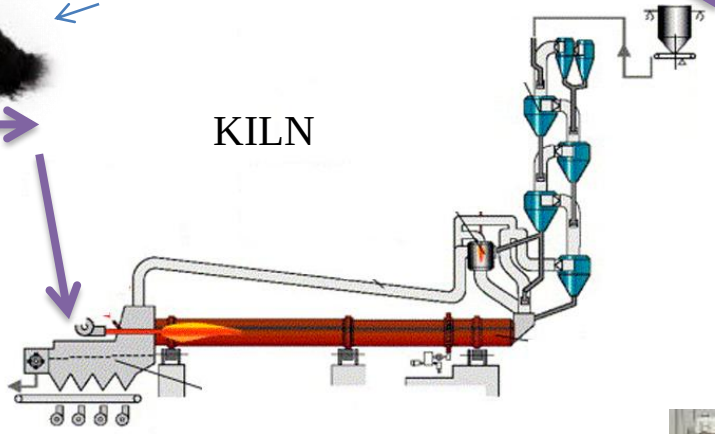
Additives

Raw Mill

Coal Mill

Fine Coal

KILN



Raw Meal

Clinker

Gypsum

Cement Mill

Cement

Packing

Major Equipment Technical Details

Crusher

New Lime Stone Crusher
- Capacity: 1400 TPH
- Type: Double Rotor Hammer
- OEM: TKIL

Old Lime Stone Crusher
- Capacity: 800 TPH
- Type: Single Rotor Impact
- OEM: Hazemage

Additive Crusher
- Capacity: 200 TPH
- Type: Swing hammer
- OEM: Elecon

Secondary Crusher
- Capacity: 300 TPH
- Type: Reversable hammer
- OEM: TKIL

Raw Mill

Raw Mill – 1
- Capacity: 140 TPH
- Type: VRM with Static Separator
- OEM: TKIL

Raw Mill – 2
- Capacity: 210+50 TPH
- Type: VRM with Dynamic Separator tandem with Ball Mill
- OEM: TKIL

Raw Mill – 3
- Capacity: 275 TPH
- Type: Roller Press
- OEM: TKIL

Raw mill – 4
- Capacity: 275 TPH
- Type: Roller Press
- OEM: TKIL

Coal Mill

Coal Mill – 1
- Capacity: 19 TPH
- Type: VRM with Static Separator
- OEM: TKIL

Coal Mill – 2
- Capacity: 25 TPH
- Type: VRM with Dynamic Separator tandem with Ball Mill
- OEM: TKIL

Coal Mill – 3
- Capacity: 35 TPH
- Type: VRM with Dynamic separator
- OEM: Pfeiffer

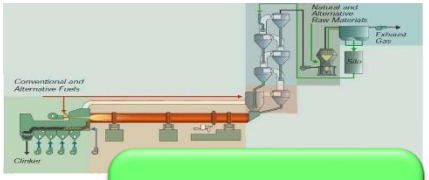
Coal mill – 4
- Capacity: 40 TPH
- Type: VRM with Dynamic separator
- OEM: Pfeiffer

AFR Feeding

Shredder
- Capacity: 10 TPH
- Type: Jaw Type
- OEM: ATS Conveyors India Pvt. Ltd.

Hot Disc
- Capacity: 3.5 to 10 TPH
- Type: Hotdisc Reactor
- OEM: FLSmidth

Major Equipment Technical Details



Kiln

Kiln – 1
- Capacity: 1500 TPD
- Type: Three tier, with Girth Gear , Five Stage ILC Pre-Heater & Grate Cooler with IKN static-grate
- OEM: TKIL

Kiln– 2
- Capacity: 2500 TPD
- Type: Three tier with Hydraulic Thruster, Five Stage ILC Pre-Heater & Grate Cooler with 13 Row Jet Stream plate cooler
- OEM: TKIL

Kiln – 3
- Capacity: 3800 TPD
- Type: Two Tier Rotax Kiln with Six Stage ILC Pre-Heater & SF-CB Cooler
- OEM: FLSmidth

Kiln – 4
- Capacity: 3800 TPD
- Type: Two Tier Rotax Kiln with Six Stage ILC Pre-Heater & SF-CB Cooler
- OEM: FLSmidth

Cement Mill

Cement Mill – 1
- Capacity: 225 TPH
- Type: Roller Press with Ball Mill Combi Circuit
- OEM: TKIL

Cement Mill – 2
- Capacity: 225 TPH
- Type: Roller Press with Ball Mill Combi Circuit
- OEM: TKIL

Cement Mill – 3
- Capacity: 225 TPH
- Type: Roller Press with Ball Mill Combi Circuit
- OEM: TKIL

Cement mill – 4
- Capacity: 225 TPH
- Type: Roller Press with Ball Mill Combi Circuit
- OEM: TKIL

Packing Plant

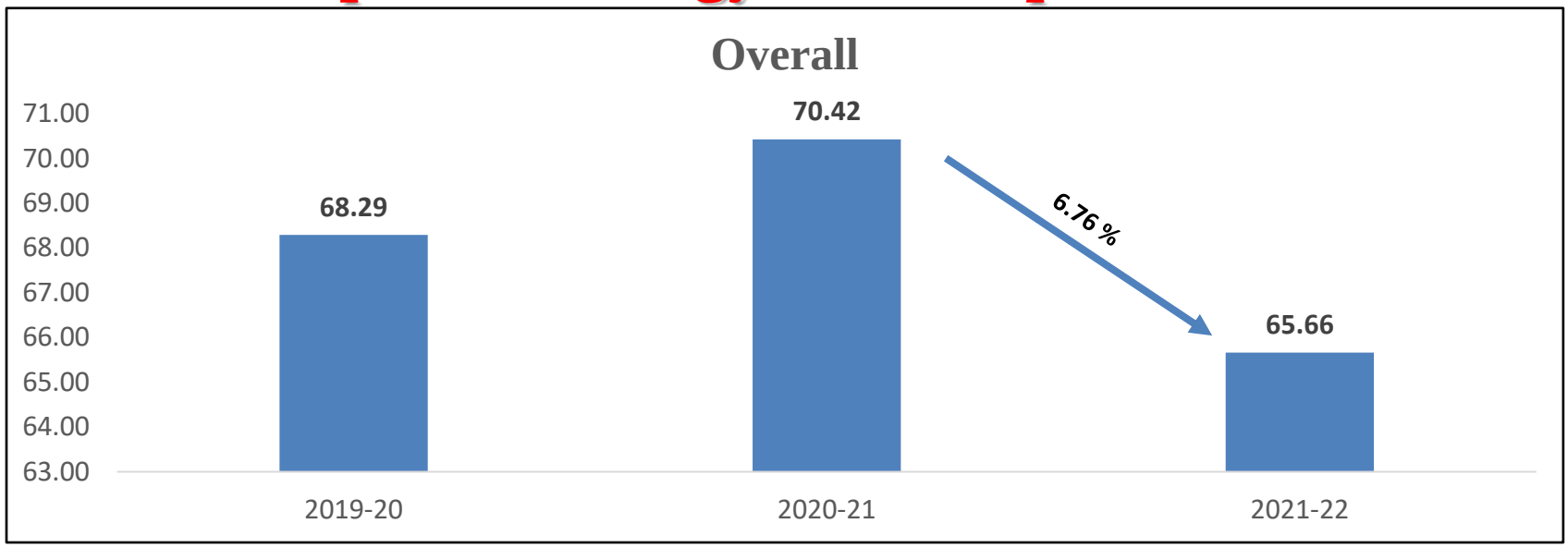
Packing Plant – 1
- Capacity: 240 TPH
- Type: Roto Packer Ventomatic (120 X 2)
- OEM: FLSmidth

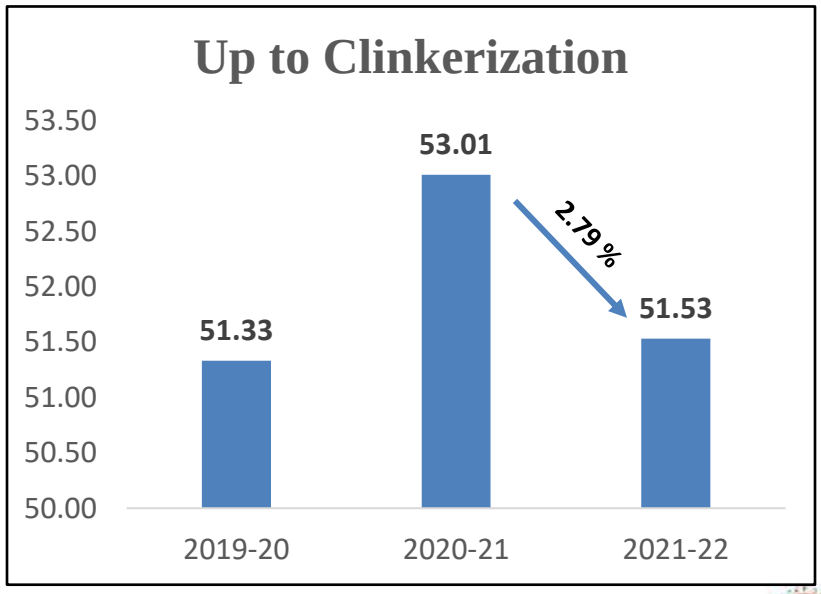
Packing Plant – 2
- Capacity: 480 TPH
- Type: Roto Packer Ventomatic (120 X 4)
- OEM: FLSmidth

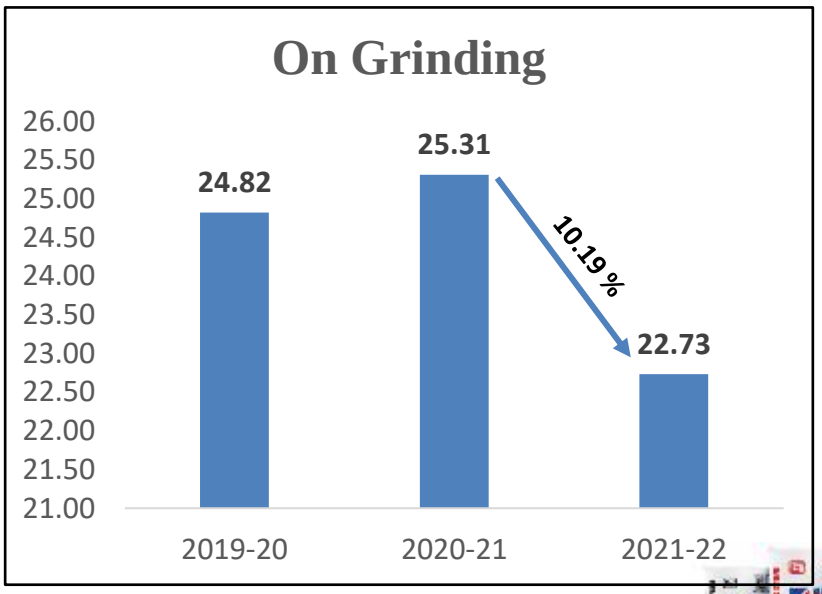
Packing Plant – 3
- Capacity: 360 TPH
- Type: Roto Packer Ventomatic (180 X 2)
- OEM: FLSmidth

Packing Plant – 4
- Capacity: 360 TPH
- Type: Roto Packer Ventomatic (180 X 2)
- OEM: FLSmidth

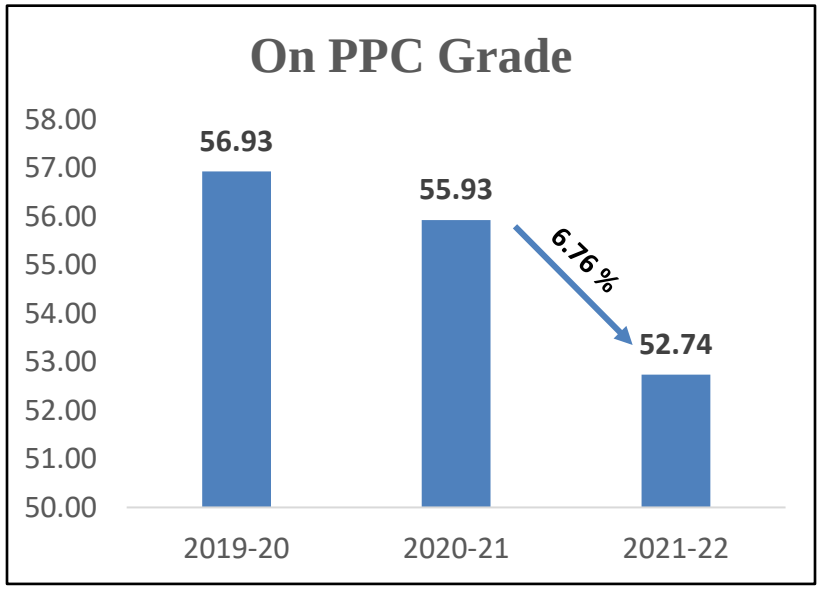
Specific Energy Consumption kWh/MT

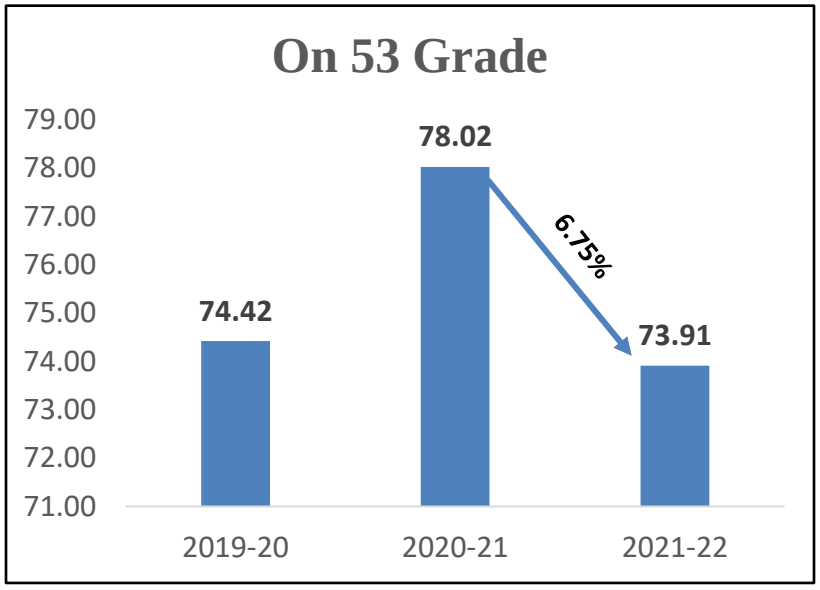


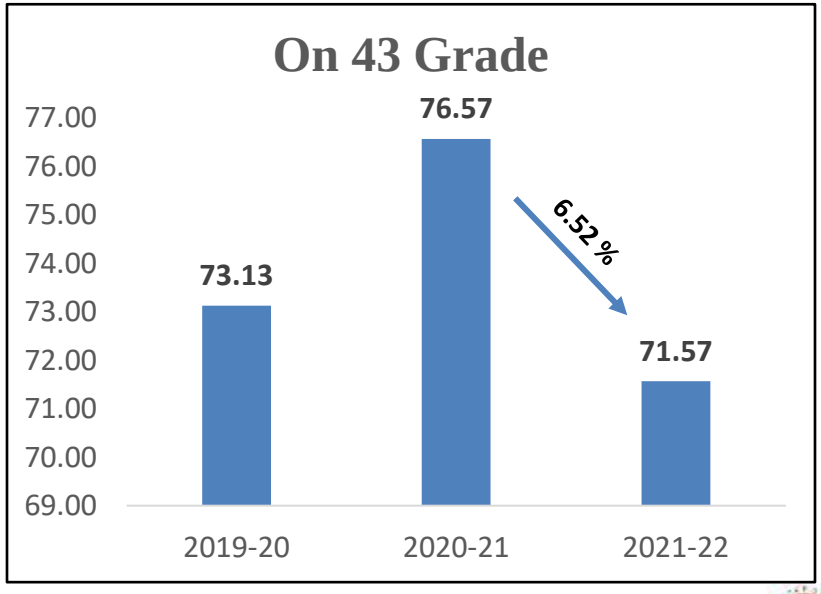


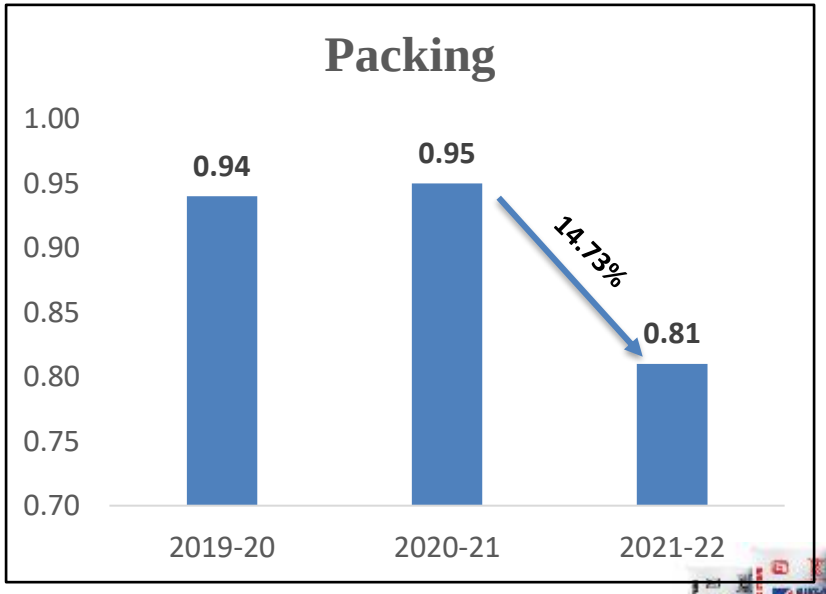


Specific Energy Consumption kWh/MT

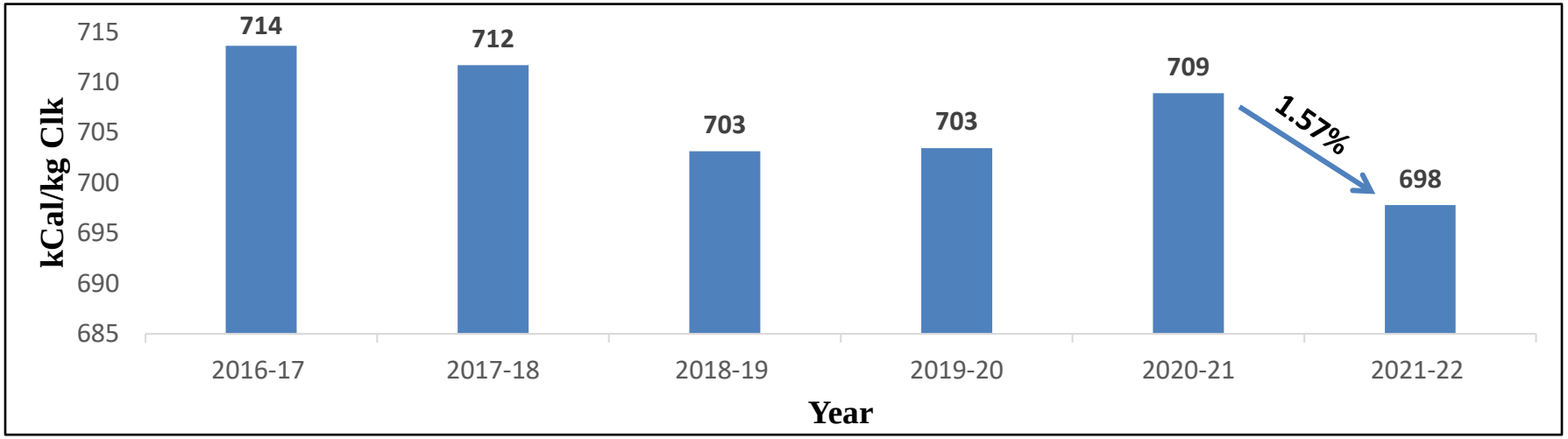




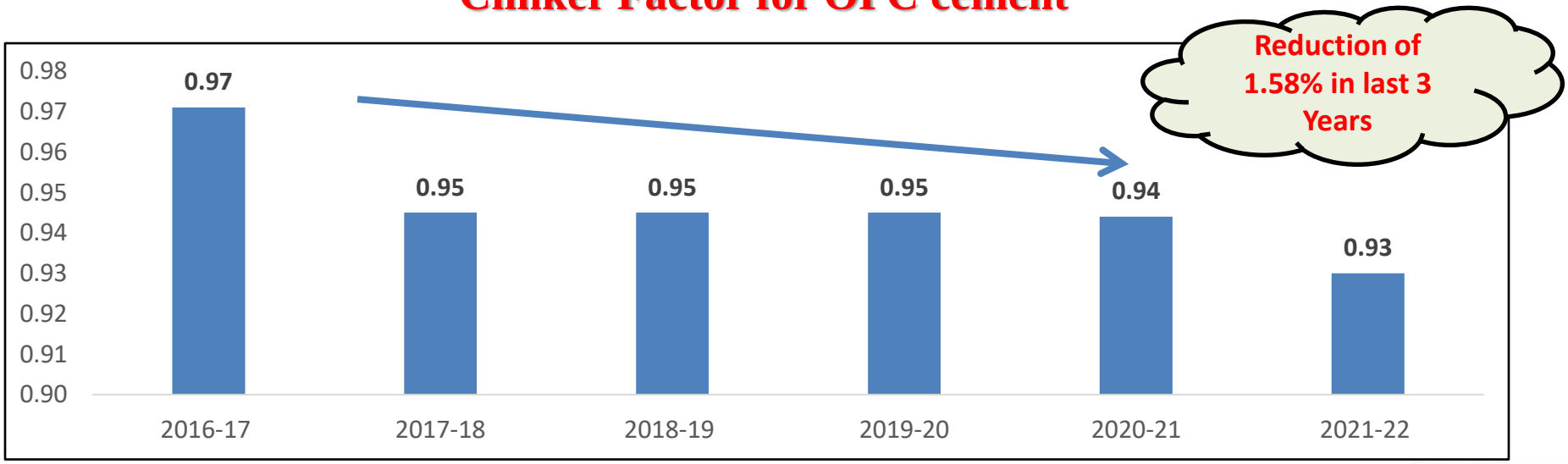




Specific Thermal Energy Consumption



Clinker Factor for OPC cement

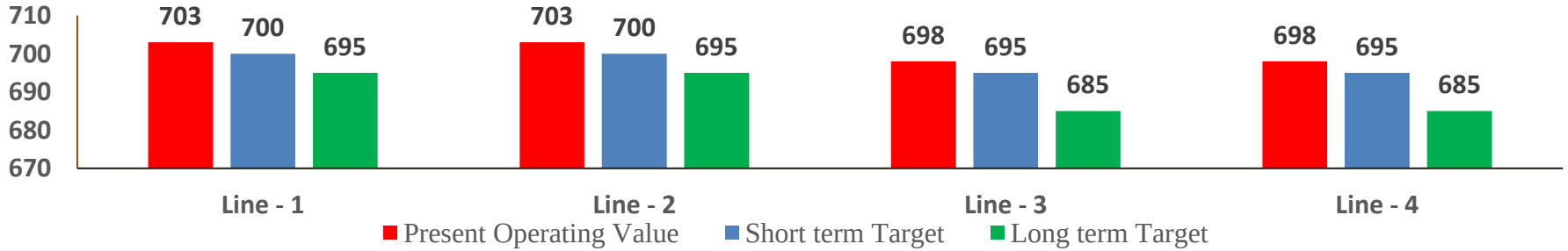


Bench Mark Comparison with other Industry

S.No	Energy	Unit	National best	International best	VC Value
1	Thermal energy	Kcal / kg clinker	684 (6 stage PH)	667 (Japan)	697.64 (Avg of all four units)
2	Electrical energy	KWH /MT Cement	63.91	65 (Japan)	65.66

Source – CII Energy Benchmarking V: 4.0

Internal Short Term & Long Term Targets for Thermal Energy



Road Map for achieving Benchmark value :

- Upgradation from conventional cooler to new generation cooler in Unit 1 & 2.
- Increasing AFR consumption.
- Increasing market share of PPC by continuous awareness & training programs to end users.
- Replacement of low-efficiency process HT fans & motors with high-efficiency fans.
- Installation of WHR system, a feasibility study has been conducted.
- Solar plant execution of 5MWp capacity is under the planning stage.

Major EnCon Projects Planned from FY 22-23 to FY 24-25

Sl. No	Energy Efficiency improvement measures	Investment Million Rupees	Date of completion of measure	Life Cycle years[1]	Annual Savings	
					Coal, toe	Electricity, MWh
1	Improve the heat transfer in Line 2 preheater cyclones by conducting a CFD study	6.0	2023-24	15	1108	
2	Replacement of high efficiency fan for Cement mill 3 - HR separator	5.0	2023-24	15		924
3	Replacement of high efficiency pumps for Kiln 1,2 GCT	2.0	2023-24	15		452
4	Replacement of high efficiency pumps for Mine pit B – dewatering	1.0	2023-24	15		182
5	Optimizing compressor unloading for Line 3,4 pyro compressor by installing VFD	0	2022-23	15		218
6	Installation of VFD to avoid unloading power in Units 1,2,3 Cement mill compressor	0.5	2022-23	15		211
7	Reducing pressure drop across line 3 Raw mill cyclones by conducting CFD study	2.0	2022-23	10		504
8	Replacement of high efficiency fan for Cement mill 4 - HR separator	5.0	2024-25	15		1272
9	Improving line 3 PH fan efficiency by reducing “cut off” clearance	3.0	2024-25	15		370

Major EnCon Projects Planned from FY 22-23 to FY 24-25

Sl. No	Energy Efficiency improvement measures	Investment Million Rupees	Date of completion of measure	Life Cycle years	Annual Savings	
					Coal, toe	Electricity, MWh
10	Improving line 4 Raw mill HR fan efficiency by reducing “cut off” clearance	3.0	2024-25	15		191
11	Improving mill ventilation and reducing <3 micron size particles in cement mills 3 & 4 by increasing mill vent fan speed	0	2022-23	5		1303
12	Avoiding over grinding in Cement mill 4 by reducing grinding media loading.	0	2022-23	2		337
13	Reducing fines in the cement mill separator and improving output by changing the separator in the cement mill 3	50.0	2024-25	15		1540
14	Increasing the phase density of coal firing blower by reducing the speed of the blower-Line1	1.0	2022-23	5	157	
15	Improving the fan efficiency of cooler fans (FN2 &FN7)-Line1	1.5	2022-23	15		200
16	Installation of high-efficiency impeller for Coal mill 1 Booster Fan-Line1	2.0	2024-25	15		1267
17	Improving the fan efficiency of cooler fan No 5-Line4	1.0	2024-25	15		211

Energy Saving Projects for last 3 years

Year	No. of Energy saving projects	Investments (INR millions)	Electrical savings (Million kWh)	Total savings (INR million)	Impact on SEC , kWh/MT cement
FY 2019-20	13	0.89	2.22	10.91	0.46
FY 2020-21	19	0.85	1.75	7.90	0.41
FY 2021-22	20	17.69	3.21	16.49	0.53

Sl. No	Year	Project description	Investment in INR Lakhs	Energy Savings, kWh	Cost Savings, INR Lakhs/ Annum
1	2019 - 20	**Optimization of frequency form 50Hz to 49.8 Hz.**	00	1111295	54.56
2	2019 - 20	**U- 3 Cement mill power optimization by optimizing grinding media.**	00	618777	30.38
3	2019 - 20	Replacement of conventional blades with energy efficient FRP fan blades.	5.43	236610	11.61
4	2019 - 20	Unit-3 & 4 RABH RALs and MFC to be shut off during normal condition after cleaning of chambers.	00	71280	3.50
5	2019 - 20	Replacement of conventional motors with IE3 motors at Kiln 3 & 4.	0.55	15840	0.78

Energy saving projects for the year FY 2020 - 21

Sl. No	Year	Project description	Investment in INR Lakhs	Energy Savings, kWh	Cost Savings, INR Lakhs/ Annum
1	2020 - 21	**Optimization of TG frequency from 49.80 Hz to 49.60 Hz.**	0	1304546	58.70
2	2020 - 21	**U-3 fly ash re circulation system power optimization**	0	169468	7.63
3	2020 - 21	Conversion of TPP-4 Fine Ash silo Bag filter into Vent filter.	0	39420	1.77
4	2020 - 21	Derating of Raw Mill - 3 Bag filter fan motor from 22 kw to 11 kw.	0.3	36600	1.65
5	2020 - 21	**Replacement with double flap in place of RAL-1 & 2 at Raw mill - 3 HR separator discharge.**	2.24	48312	2.17
6	2020 - 21	Interlock made for Packing Plant - 1,2,3 and 4 Bag filter fans RALs with fan running signal in timer mode.	0	22572	1.02
7	2020 - 21	Optimization of Unit-4 Cement Mill Baghouse RALs running hours.	0	18667	0.84

Energy saving projects for the year FY 2021 - 22

Sl. No	Year	Project description	Investment in INR Lakhs	Energy Savings, kWh	Cost Savings, INR Lakhs/ Annum
01	2021 - 22	**Removal of grit separator from Mill Bag House circuit of Cement Mill-1 and 2.**	1.7	1254000	37.08
02	2021 - 22	**Modification of PH Cyclone-1 High Pressure to low Pressure to reduce PH fan power in Kiln-1.**	95	349272	18.87
03	2021 - 22	**Installation of SPRS for Raw mill Fan in Raw mill-2.**	20	720000	37.08
04	2021 - 22	Installing VFD for Kiln-1 PC firing conveying blower.	3	79200	4.28
05	2021 - 22	Optimisation of ash Handling system cycle gap timings.	0	139400	6.97
06	2021-22	**Kiln-2 Cooler ESP chimney height increased by 5 mtrs.**	15	128850	6.63
07	2021-22	Replacing cast iron blades for shell cooling Fan-9 to 16 with FRP blade fan in Kiln-4	1.92	78370	4.32

Projects with high cost benefits

Sl .No	Project Description	Saving Rs Lac/Annum
1	Optimization of TG frequency from 49.80 Hz to 49.60 Hz.	58.70
2	Optimisation of frequency form 50Hz to 49.8 Hz.	54.56
3	Cement mill – 3 optimisation by Polycom roller profiling & grinding media loading.	30.38
4	Raw Mill Fan suction box modification in line - 2	21.24
5	Cooler stack extension of Line - 2	16.04
6	Reduction in radiation loss by application of Heat resistant paint to Pre – Heater of line - 2	13.30
7	Avoiding operation of higher capacity compressor for Raw mill 1&2 hopper top bag filters.	5.52
8	Installation of VFD drives for Packer bag filters.	4.90
9	Replacement of Kiln shell Cooling Fan Metal blade with FRP Blades	1.97

Innovative Project - 1

Removal of grits separator from mill bag house

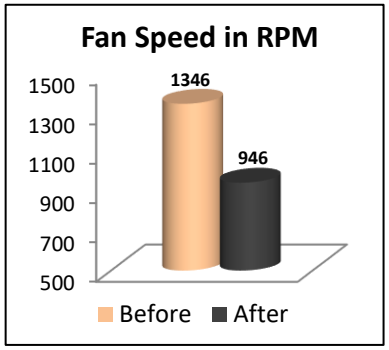
Challenge:

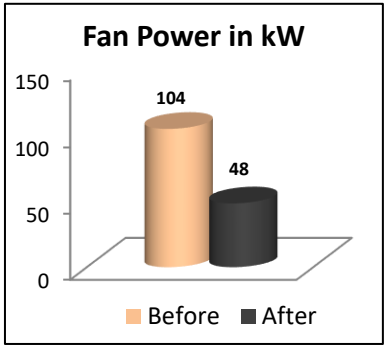
- High-pressure drop across Grid separator resulted in high power consumption due to higher fan speed.

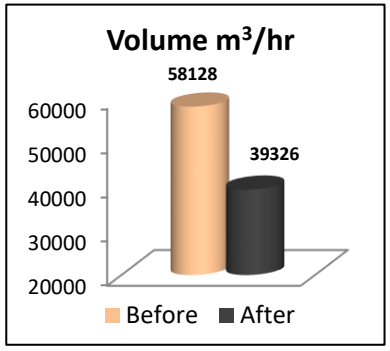
Before

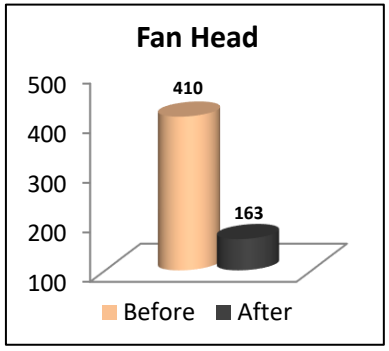
Counter Measures:

- Static separator removed
- Installation of In-house fabrication and erection of duct









Mill	Power saved, kW	Run Hours/Annum	Unit cost, Rs/unit	Savings/Annum, Rs Lakhs
Cement Mill - 1	56	2882.76	5.10	8.23
Cement Mill - 2	32	5535.24	5.10	8.47

After

Innovative Project - 2

In-House installation of SPRS system for Raw mill fan - 2

Challenge:

- RM fan running on GRR
- Rotor power loss due to GRR
- Speed regulation of motor in steps

Counter Measures:

- Spare SPRS panel was utilized
- HT Isolator panel, DC Reactor, and feedback transformer are installed
- Cable laid for DCS interface and termination did on both panel & IO side
- Calibration & settings of all components done

Implementation Cost:

- Cost of cable, DC reactor, and feedback transformer = **₹ 20.00 lakhs**

Recurring Savings:

- Power saving = 80 kWh at 93 % RPM.
- Annual Saving = 80 kWh x 21 hrs x 235 days x ₹ 5.48 = **₹ 21.64 lakhs**

One time savings:

- New SPRS panel cost approx. = **₹ 50.00 lakhs**
- Commissioning cost (Done in-house) = **₹ 3.00 lakhs**

Before

After

Innovative Project - 3

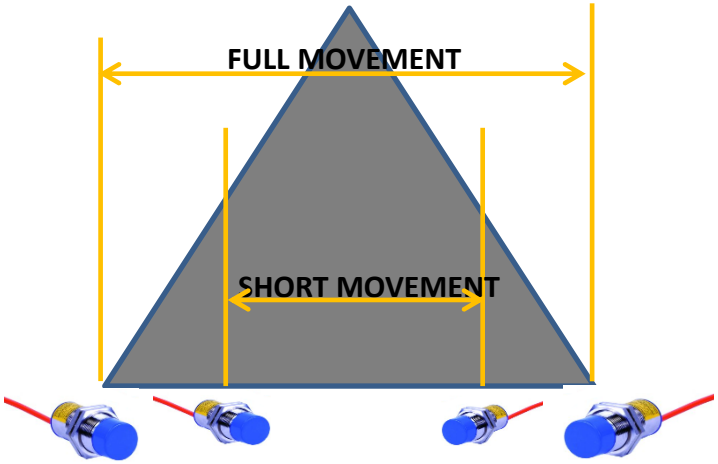
Coal reclaimer harrow drive movement

Challenge:

- Coal conveying TPH reduced due to pile height in the reclaimer
- Manual intervention to change from short movement to long movement on the reclaimer control desk.

Counter Measures:

- Toggle for changing from short movement to long movement taken in DCS



Savings:

- Total No of drive running in reclaimer with belt conveyor – 15 drives
- Sum of 15 drives running load is – 216.66 kWh
- Total No of idle hours saved – 3 hours

Annual saving = 216.66 kWh x 3 hrs x 300 days x ₹ 5.48
= **₹ 10.69 lakhs**

Renewable Energy

Significant potential for renewable energy is not available.

•20.5% of captive consumption is the RPO obligation for FY 2022-23.

•Under RPO obligation, 26.95 Lakhs kWh green energy purchased in July-2022

•Planning to purchase 100 lakhs kWh every month from August-2022 onwards

•5MWp capacity solar plant execution is under planning stage

Waste utilization & management

AFR Consumed MT	2019-20			2020-21			2021-22		
	Consumed, MT	Coal Saved	Annual TSR %	Consumed, MT	Coal Saved	Annual TSR %	Consumed, MT	Coal Saved	Annual TSR %
Tyre Chips	12.3	19.7	4.2	15.61	12.7	2.6	**	**	4.5
Carbon Black	17350	21669		11995	16176		30920.4	39219	
RDF	**	**		**	**		**	**	
Stalk (Agri Waste)	**	**		**	**		45.75	15	
Plastic Waste	17438	6986		6835	3136		12655.05	6328	
Total	**34800.3**	**28675**		**18846**	**19325**		**34077.3**	**35322**	

Infrastructure for AFR co - processing

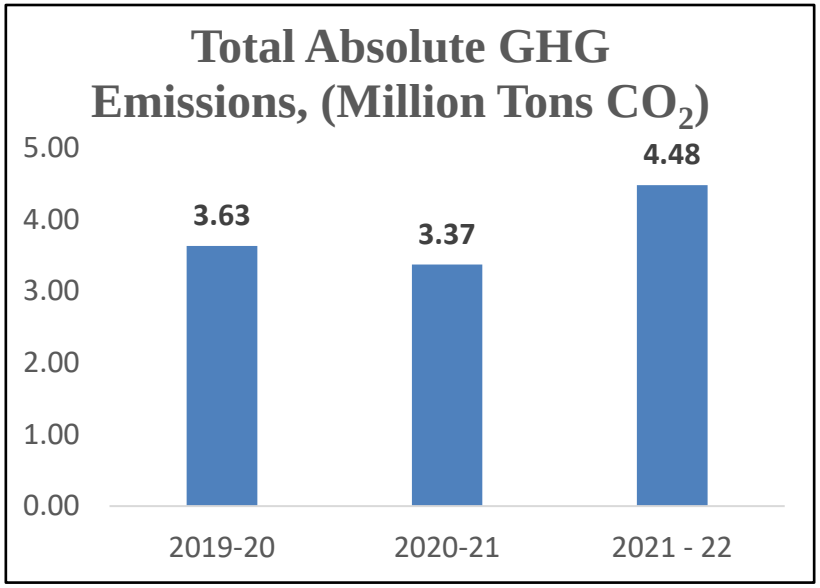
- *Presently permissions from PCB for Liquid AFR are taken and trials are conducted*
- *Installation of Shredder for co-processing of AFR*
- *Carbon black feeding arrangements in PC in all lines*
- *HOT DISC Reactor for co-processing MSW, plastic waste, tyres, and tyre chips*
- *Sheds & feeding arrangements in place to co-process hazardous waste*

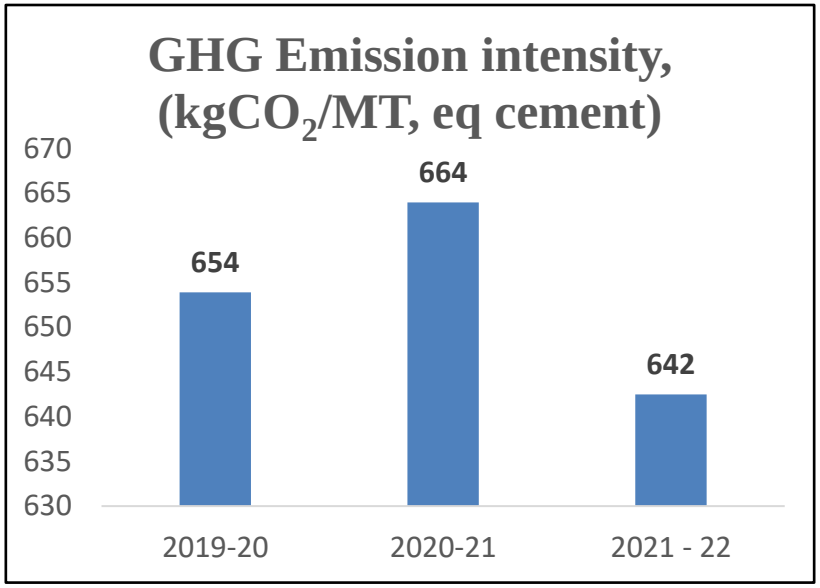
Carbon black feeding

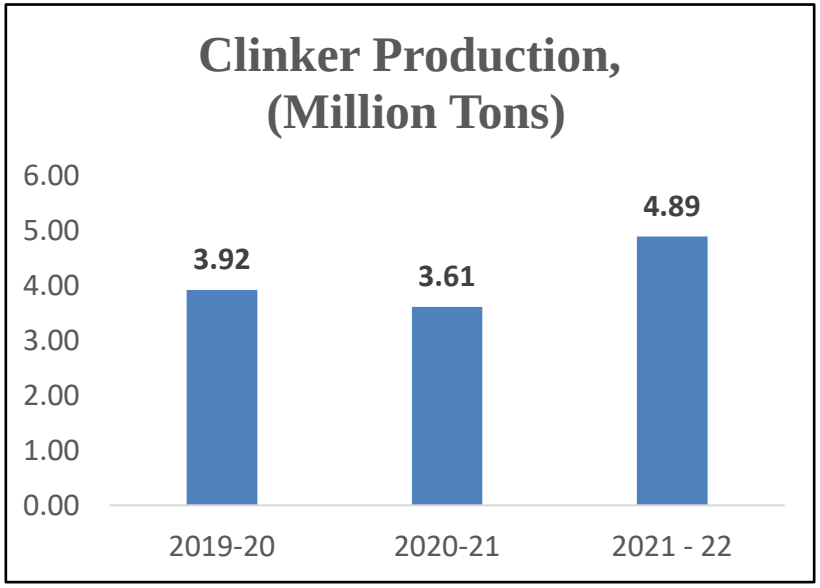
Co-process of hazardous waste

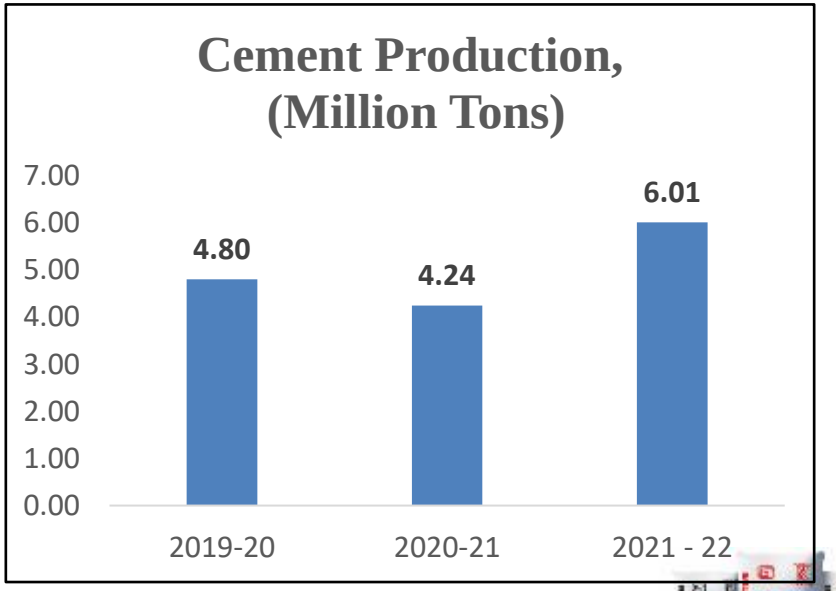
Shredder for co-processing of AFR

GHG Inventorization









Net Zero Path way

Short Term Goal

- Improvement in Operation efficiency.
- Increase in PPC production up to 50%
- Grid power from Renewal energy
- Increase in AFR Consumption from 4-10% TSR
- Cement Bulk transportation though rail
- Use of Solar Power

Medium Term Goal

- Transition to 100% PPC cement.
- Waste heat recovery (15 MW)
- Study & Trails of LC3 Cement
- Increase in Solar Power
- Increase in AFR Consumption from 10-25% TSR

Long Term Goal

- Production of LC3 cement
- Green Hydrogen for kilns, electricity & logistics.
- Carbon capture, utilization, and storage (CCUS)

Carbon Negative by 2040

Short Term way foreword for reduction in CO_2 emission

1. Improvement in Clinker factor by increasing PPC Production
2. Increase of “ConQUerete” cement (26% fly ash) in place of OPC
3. Increased Power contract demand from 2 MVA to 35 MVA
4. Production of belite clinker against alite clinker
5. Introduction of blended cement (Clinker + Fly ash + Slag)
6. Increase in use of renewable energy by the installation of a solar power plant of 5 MW

Best Practices implemented in Green Supply chain:

Cement: Focus on rail dispatch has increased w.r.t to road movement.
Started NAVKAR bulk cement rake loading.

Rail – 44%	**Road – 56%**

Laterite

- Procurement of laterite from the nearest source, resulting in a reduction of CO_2 emission from vehicles.
- The procurement ratio is 54% from the nearest source i.e., Thatepally (90 km), and 46% from the range of 110kms (Vikarabad Area)
- Road movement has been reduced and initiated Rail movement for laterite

Gypsum

- Utilization of Gypsum (By-product from fertilizer companies) in the Cement Industry.
- Road movement has been reduced and initiated Rail movement.

Rail – 74%	**Road – 26%**

Fly Ash

- Utilization of Fly Ash (By-product from Power plants) in the Cement Industry.
- Transportation of fly ash by Rail through closed wagons.

Rail – 93%	**Road – 7%**

Employees and team work

1. Suggestion Scheme
2. Brain Storming
3. 5s Activity
4. Kaizen
5. Leakage Detection

Year	Total Suggestions	Suggestions Implemented	Suggestions Rejected
2019-20	852	710	89
2020-21	285	143	76
2021-22	285	143	76

Energy Conservation Week celebration

Awareness programs

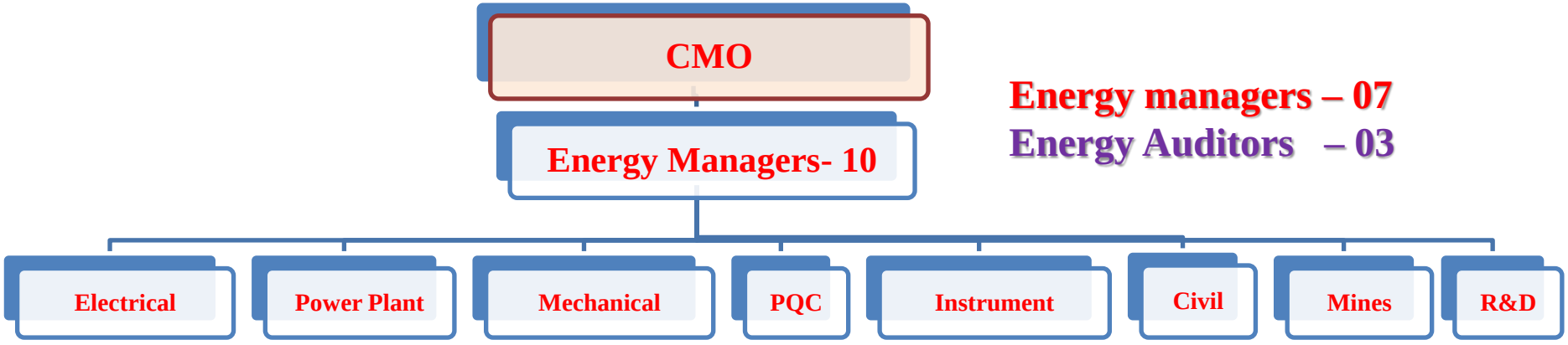
Energy Saver Rath

Year	No Of Kaizens Registered	No Of Kaizens Completed	No.of Best Kaizens
2019-20	1756	1671	22
2020-21	1025	724	20
2021-22	1025	724	20

Leakage Detection Area	Points Detected	Points Attended
Air Leakages	30	28
Fugitive dust & spillages	899	887
Steam & water	99	99
Compressed air	76	76

No Vehicle Day Celebration, Safety Gate Meeting, Internal/External Trainings, Organizing Competitions, Training class to nearby villages, Street Plays

Energy management cell & energy manager



Energy managers – 07
Energy Auditors – 03

List of Energy Conservation Committees

Water management committee	Packing plant- power consumption reduction committee	Cement mills-power consumption reduction committee	Idle running equipment detecting committee	Steam leakages detection committee at thermal power plants
Team Leader : Mr. L Vegi	Team Leader: Mr. Gangadhar	Team Leader: Mr. LB Yadav	Team Leader: Mr. KVR Murthy	Team Leader: Mr. Chandrashekhar Ujja
Team Members : 1) Mr. Ravindra L 2) Mr. Rajarao 3) Mr. Shankar Rao Patil	Team Members : 1) Mr. Mishra 2) Mr. Shashikanth 3) Mr. Venkatesh Marla 4) Mr. Harish K	Team Members : 1) Mr. B. Praneeth 2) Mr. D. Pramod 3) Mr. Sanket K 4) Mr. Ganapati 5) Mr. Deepak 6) Mr. Vishwanath	Team Members : 1) Mr. Sriram Arsid 2) Mr. Vishwanath 3) Mr. V. Madhukrishna	Team Members : 1) Mr. Vishveshwarayya Hiremath 2) Mr. K.V. Ramana 3) Mr. R.D.B. Patil

Review pertaining to energy efficiency

FREQUENCY	REPORT/SYSTEM	RESPONSIBILITY
24 Hrs X 7days	➢ "Prevention is better than Cure" So On line SP power Monitoring facility provided at CCR.	CCR Operator
Daily	➢ Energy consumptions reviewed in Production Meeting headed by CMO.	CMO
Daily	➢ Daily review meeting with power plant O & M team by HOD to optimize plant performance by monitoring and controlling of parameters like auxiliary power, coal, water and plant heat rate.	HOD
Weekly	➢ Energy consumptions reviewed in Cross functional Meeting headed by CMO.	CMO
Monthly	➢ Stoppage , OEE & Benchmark Presentation (Specific Power Consumption, Details of Stoppages, Heat Balance ,Power plant performance)	CMO

Review pertaining to energy efficiency

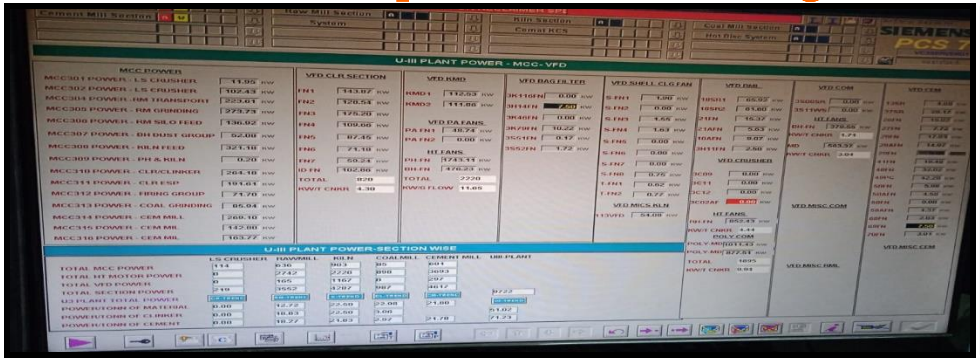
Sample Comparison Statement for daily power monitoring:

Section	Name	Unit-1 Yesterday's Production & Running Hrs	Unit-1 Monthly (Day) Best Achieved Power in kWh/T of Clinker	Unit-1 Yesterday's Power in kWh/T of Clinker		Unit-1 MTD Power in kWh/T of Clinker	Unit-2 Yesterday's Production & Running Hrs	Unit-2 Monthly (Day) Best Achieved Power in kWh/T of Clinker	Unit-2 Yesterday's Power in kWh/T of Clinker		Unit-2 MTD Power in kWh/T of Clinker
Raw mill	R.M MD	3600 MT	10.40 (9.61)	12.30		11.51	3880 MT	11.04 (10.11)	12.47		12.63
	R.M Fan	24 Hrs	11.42 (11.09)	12.47		13.07	16.5 Hrs	11.70 (10.45)	11.17		11.06
	Ball Mill	150 TPH					235.15 TPH		0.00		0.00
	RM Aux		3.37 (2.23)	2.61		2.58		3.86 (3.10)	4.20		3.58
	Misc		0.22 (0.18)	0.50		0.51		0.47 (0.30)	0.42		0.49
	Sub Total	Jan-20 (16-06-21)	25.41 (24.72)	27.89		27.67	JAN-19 (20-09-19)	27.08 (25.80)	28.25		27.77
Kiln	BH FAN	2155 MT	3.40 (2.96)	3.53		3.53	3445 MT	3.12 (2.53)	3.92		3.98
	P.H.Fan	24 Hrs	9.67 (6.91)	8.28		8.40	24 Hrs	6.86 (4.24)	7.40		7.08
	W G Fan	89.79 TPH	0.87 (0.41)	1.00		0.94	143.54 TPH	0.45 (0.30)	0.74		0.73
	I.D Fan		0.09 (0.05)	0.13		0.12		0.48 (0.15)	0.59		0.62
	Kiln Aux		6.47 (6.47)	10.00		9.56		9.03 (8.59)	10.38		10.44
	Misc		0.45 (0.38)	0.68		0.68		0.54 (0.29)	0.41		0.50
	Sub Total	JAN-19 (19-01-19)	20.96 (20.39)	23.61		23.24	AUG-19 (30-09-19)	20.48 (18.98)	23.44		23.34
Coal mill				On Mill	On Clinker				On Mill	On Clinker	
	Coal Mill	461 MT	1.87 (1.48)	11.01	2.36	2.17	670 MT	1.85 (1.31)	9.42	1.83	1.85
	C.A. Fan	24 Hrs	1.67 (1.24)	10.14	2.17	2.09	22.83 Hrs	2.19 (1.75)	13.88	2.70	2.68
	Coal Mill Aux	19.21 TPH	0.22 (0.06)	0.70	0.15	0.17	29.35 TPH	0.72 (0.35)	2.90	0.56	0.50
	Misc		0.07 (0.04)	0.54	0.11	0.11		0.14 (0.06)	0.52	0.10	0.12
	Coal Transfer	0 MT			0.00	0.05	60 MT			0.57	0.10
	Sub Total	JAN-20 (16-03-21)	3.83 (3.00)	22.39	4.79	4.59	MAY-19 (24-02-	4.91 (4.07)	26.72	5.77	5.24
Coal Handling Power			0.64	2.06	0.44	0.37		0.34	1.97	0.38	0.40
TOTAL ON CLINKER		JAN-19 (25-01-19)	51.99 (49.87)	58.28		57.57	Sept-19 (27-09-19)	53.57 (51.78)	59.39		58.45
Kcal/kg of Clinker			705.00	705.00		705.00		700.00	705.00		704.42
Shutdown power On Clinker (kWh/T)						0.39					0.00
Coal in MT for start up and stop of kiln						60					0.00

Section	Name	Unit-3 Yesterday's Production & Running Hrs	Unit-3 Monthly (Day) Best Achieved Power in kWh/T of Clinker	Unit-3 Yesterday's Power in kWh/T of Clinker		Unit-3 MTD Power in kWh/T of Clinker	Unit-4 Yesterday's Production & Running Hrs	Unit-4 Monthly (Day) Best Achieved Power in kWh/T of Clinker	Unit-4 Yesterday's Power in kWh/T of Clinker		Unit-4 MTD Power in kWh/T of Clinker
Raw mill	RM Poly-1	7070 MT	5.58 (4.98)	5.53		5.50	7680 MT	5.29 (4.53)	6.29		6.32
	RM Poly-2	22.08 Hrs	5.30 (4.53)	4.72		4.82	24 Hrs	5.23 (4.53)	6.38		6.35
	R.M Fan	320.2 TPH	3.85 (3.51)	4.16		4.16	320 TPH	4.01 (3.59)	3.79		3.82
	RM Aux		4.00 (3.21)	3.86		3.88		4.37 (3.57)	4.23		4.06
	Misc		0.22 (0.20)	0.30		0.33		0.51 (0.41)	0.59		0.66
	Sub Total	JAN-20 (15-03-22)	18.96 (17.60)	18.56		18.68	Nov-19 (09-11-19)	19.41 (18.14)	21.28		21.21
Kiln	BH FAN	4258 MT	2.26 (2.07)	2.80		2.90	4651 MT	2.35 (2.07)	2.44		2.37
	P.H.Fan	24 Hrs	8.07 (7.88)	9.15		9.37	24 Hrs	7.13 (6.36)	7.27		7.37
	Booster Fan	177.42 TPH		-		-	193.79 TPH	1.17 (0.75)	0.93		0.97
	-			-		-		- -	-		-
	Kiln Aux		11.67 (10.04)	11.44		11.81		10.26 (8.96)	11.38		11.09
			0.43 (0.37)	0.52		0.58		0.47 (0.44)	0.63		0.71
	Sub Total	JAN-20 (7-01-20)	22.43 (21.54)	23.91		24.66	JAN-20 (09-06-2021)	21.37 (19.73)	22.66		22.52
Coal mill				On Mill	On Clinker				On Mill	On Clinker	
	Coal Mill	614 MT	1.78 (1.24)	16.00	2.31	2.49	324 MT	1.85 (1.19)	21.64	1.51	1.59
	C.A. Fan	18 Hrs	1.19 (0.93)	11.89	1.71	1.92	12 Hrs	1.57 (1.08)	16.35	1.14	1.27
	Coal Mill Aux	34.1 TPH	0.41 (0.19)	2.35	0.34	0.03	27 TPH	0.37 (0.15)	3.36	0.23	0.21
	Misc		0.06 (0.05)	0.62	0.09	0.11		0.13 (0.08)	1.32	0.09	0.12
	Coal Transfe	-60 MT			-0.46	-0.13	0 MT			0.00	-0.04
	Sub Total	OCT-18 (29-11-21)	3.44 (2.60)	30.86	3.99	4.43	MAR-19 (17-03-22)	3.93 (2.54)	42.67	2.97	3.15
Coal Handling Power			0.48	1.97	0.28	0.41		0.33	2.02	0.14	0.18
TOTAL ON CLINKER		NOV-21 (14-11-21)	47.50 (45.53)	48.29		49.87	JAN-22 (05-05-21)	47.37 (45.66)	48.59		48.77
Kcal/kg of Clinker			693.00	696.00		696.00		693.00	695.00		695.00
Shutdown power On Clinker (kWh/T)						6.56					0.00
Coal in MT for start up and stop of kiln						140					0.00

Note: Misc power includes plant lighting, Water Services, Welding works, Work shops supply, Common building supply, AC's & Distribution losses.

On line Electrical Sp. Power Monitoring at CCR :



List of System Certifications


भारतीय मानक ब्यूरो
BUREAU OF INDIAN STANDARDS
LICENCE FOR THE QUALITY MANAGEMENT SYSTEMS CERTIFICATION
Licence No. *QSC/L- 6000124.5(Revised)*


भारतीय मानक ब्यूरो
BUREAU OF INDIAN STANDARDS
LICENCE FOR THE ENVIRONMENTAL MANAGEMENT SYSTEMS CERTIFICATION
Licence No. *EMSC/L – 6000033.3*


भारतीय मानक ब्यूरो
BUREAU OF INDIAN STANDARDS
LICENCE FOR THE OCCUPATIONAL HEALTH & SAFETY MANAGEMENT SYSTEMS CERTIFICATION
Licence No. OHSC/L- 6000043.2


bsi.
By Royal Charter
Certificate of Registration
ENERGY MANAGEMENT SYSTEM - ISO 50001:2011
This is to certify that:
KESORAM INDUSTRIES LIMITED
UNIT: VASAVADATTA CEMENT
Sedam
Gulbarga District 585 222
Karnataka
India
Holds Certificate No: **ENMS 662188**
and operates an Energy Management System which complies with the requirements of ISO 50001:2011 for the following scope:
MANUFACTURING OF CEMENT, GENERATION OF ELECTRICITY USING THERMAL ENERGY AND ASSOCIATED ACTIVITIES

ISO / 50001:2011


CII
Confederation of Indian Industry
CII-Green Products and Services Council
hereby certifies that
Birla Shakti (PPC)
(GPVD43001)
manufactured by *Kesoram Industries Limited*
at Sedam Unit in Karnataka, meets the requirements of GreenPro
Certification and qualifies as Green Product.
This certification is valid till **December 2022**
Jamshyd N Godrej
Chairman, CII Godrej GBC
ParasuRaman R
Chairman, CII Green Products & Services Council
K S Venkatagiri
Executive Director, CII-Godrej GBC

Green Pro Certificate

Learnings from EE Awards :

- Installation of new high efficiency static guide vanes within existing separator casing of cement mill – 2.
- Increasing classifier inlet velocity by reduction of classifier annular gap.
- Installation of VFD in Packing plant compressors to save power.
- Up gradation of SPRS control cubicle of U4 Cement mill HR separator fan

Recognitions and awards

Energy Efficiency Awards

Mines Awards

Safety Awards

Productivity & water efficiency Awards


Thank you
“Growth and improvement is about acknowledging weakness.”
CMO -
Mr. UV Raju