Dear All
Greetings From
NCL INDUSTRIES LTD
Cement Division, Mattapally plant,Suryapet (Dist)
TELANGANA(S)

NCL GROUP

NAGARJUNA CEMENT

Presented by
S.Bal reddy-Sr.DGM(Process)
B.Meraney-Sr.Manager(Process)

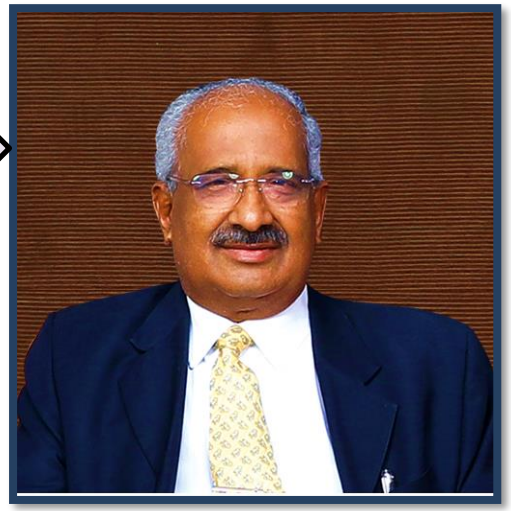
K. Ramachandra Raju
[1934 – 2008]

Founder of NCL Industries Ltd

Sri K. Ramachandra Raju was the original promoter of our Nagarjuna Cement. He is considered to be a pioneer in the mini-cement industry.

Executive Vice Chairman

Sri K.Ravi Executive Vice Chairman of our NCL Industries Limited.



K. Ravi

K. Gautam

Managing Director

Sri K. Gautam, Managing Director of our NCL Industries Limited.

Plant Head [Sr.President Works]

Sri S.Chakradhar, Sr.President of Cement Manufacturing units located at Mattapalli and Kondapalli Units.

S.Chakradhar

Company Profile

M/s. NCL INDUSTRIES LTD., (Cement Division) has established in the year 1984 at Simhapuri, Mattapalli Mandal of Suryapet (Dist.) of Telangana with capacity of 1800 TPD Line-I. Line-II was installed and commissioned on April 2010 with capacity of 3000TPD. and line –III installed and commissioned on March 2017 with capacity of 3000TPD.

Present the total plant producing from three lines clinker capacity is 2.6 MTPA and Cement manufacturing capacity is 3.0 MTPA. 11 MW WHR Power Plant installed by utilizing the hot flue gas from existing cement plant.

Now Line 3 Phase II Expansion execution is under process after completion of Expansion total Clinker production capacity **4 MTPA** and Cement production Capacity **4 MTPA**.

Major Products were Produced OPC-53,43,PPC & Visistha with ratio of OPC-53.61%, PPC-44.81% & Visistha 1.58%

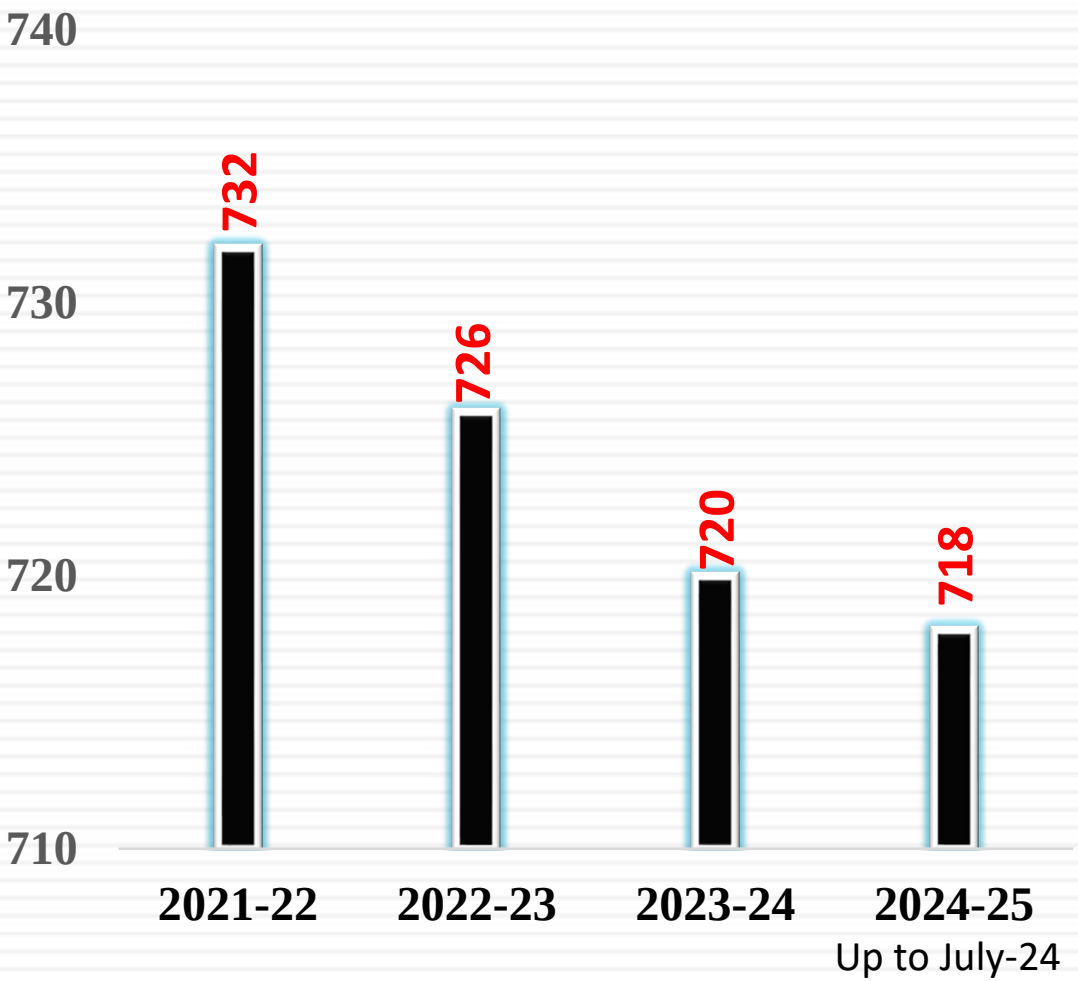
Brief Process of cement Manufacture

- Limestone extracting from the mines (Sulthanpur, Mattapally & Gundlapally) and the same is being crushed into smaller size (from 1000mm to <70mm) in the crusher
- The crushed Limestone is being stacked in the stock pile (through Stacker for the proper homogeneity) and the same is being reclaiming through the (Reclaimer) to the Raw Mill Hopper, The limestone (94%) is ground with additives (6%) (like Bauxite (Rajmundry) & Laterite) into a fine particles (<2.0% on 212 microns) in a Vertical Roller Mill and it will be pumping & stored into a CF Silo for the homogeneity.
- The blended raw meal is fed into the Preheater where raw meal is heated to temperature around 900-1000^{0}C (and the calcination was about to 94-96%) with the Fine Coal firing at Pre-Calciner, (The Coal is ground in a Vertical Roller Mill into a finer particles (<2-3% KC Pet Coke and <12-14 % in PC Coal (Imported and Indigenous) on 90 micron).
- The complete calcination is takes place in the kiln to form clinker and the clinker is cooled (from 1450 to 100^{0}C in the cooler and it will be stored in a closed clinker silo.
- The Clinker ground with Gypsum & Flyash {35%(PPC) ,24%(Visistha),2%(OPC)} in a the Cement Mills (Verticle Roller Mill & Ball Mill) into finer particles (<12-14% on 45 microns) called Cement and store in a closed concreate silo.

Plant Machinery Installed & Operating Capacities

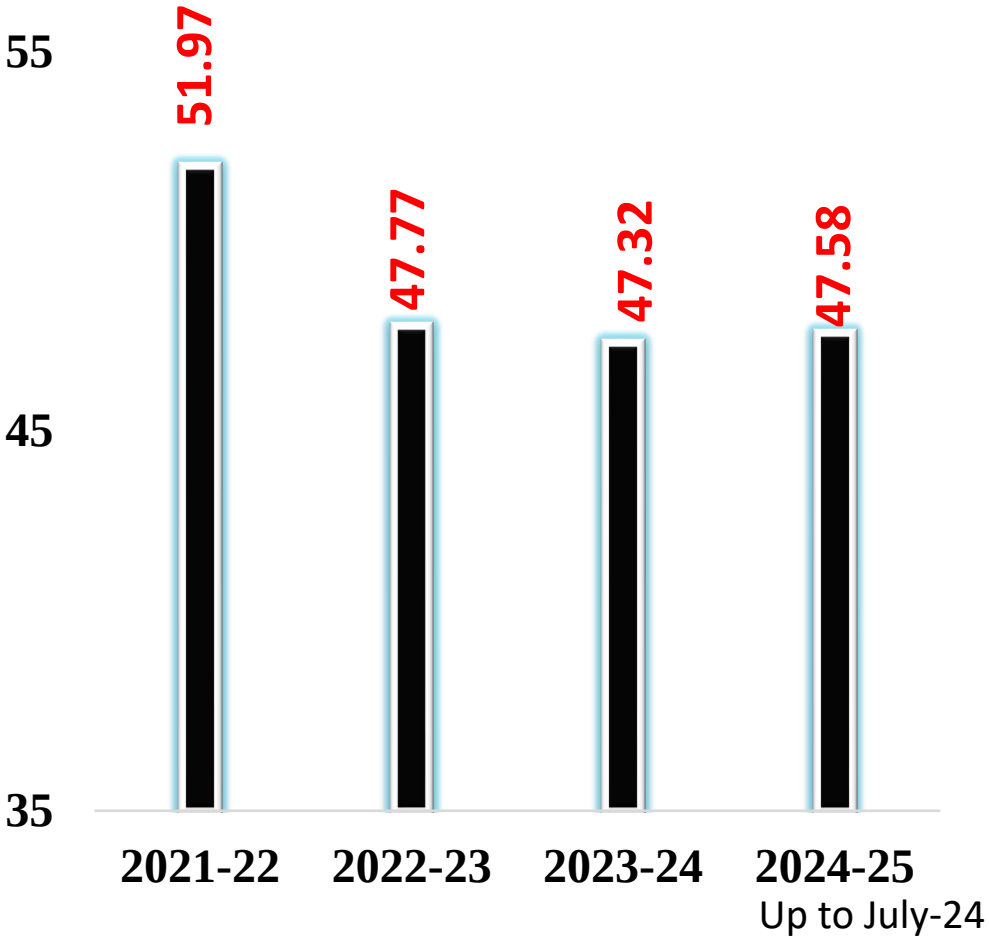
Section	Equipment Type	Make	Installed Capacity	Operating capacity
Line-1				
Crusher	Single rotor Impact	Pozzolona	400 TPH	350-400 TPH
Raw Mill	VRM	Loesche	175 TPH	170-180 TPH
Coal Mill	VRM	BPEG	40 TPH	25-35 TPH
Kiln & PreHeater	6 stage double string with ILC	LNVT	1800 TPD	1500-1600 TPD
Clinker Cooler	Shuttle type	FONS	2000 TPD	1500-1600 TPD
Cement Mill	VRM	Loesche	130 TPH	128-130 TPH
Packer	Rotary packer with 16 spouts	FLS	240 TPH	200-240 TPH
Line-2				
Crusher	Single rotor Impact	L&T	900 TPH	650-750 TPH
Raw Mill	VRM	UBE	330 TPH	390-405 TPH
Coal Mill	VRM	BPEG	40 TPH	30-40 TPH
Kiln & PreHeater	6 stage double string with ILC	LNVT	3000 TPD	2900-3000 TPD
Clinker Cooler	IKN Pendilum	IKN	3000 TPD	3000 TPD
Cement Mill	Ball Mill (closed circuit)	LNVT	90 TPH	90-95 TPH
Packer	Rotary packer with 12 spouts	ENEXCO	150 TPH	150 TPH
LINE-3				
Kiln & PreHeater	6 stage double string with ILC	KHD	3000 TPD	3600-3650 TPD
Clinker Cooler	Pyro-step cooler	KHD	3000 TPD	3600-3650 TPD
Cement Mill	Ball Mill (closed circuit)	KHD	104 TPH(OPC)	125-130 TPH
Packer	Rotary packer with 16 spouts	FLS	240 TPH	240 TPH

Sp. Energy consumption (kcal/kg clinker)



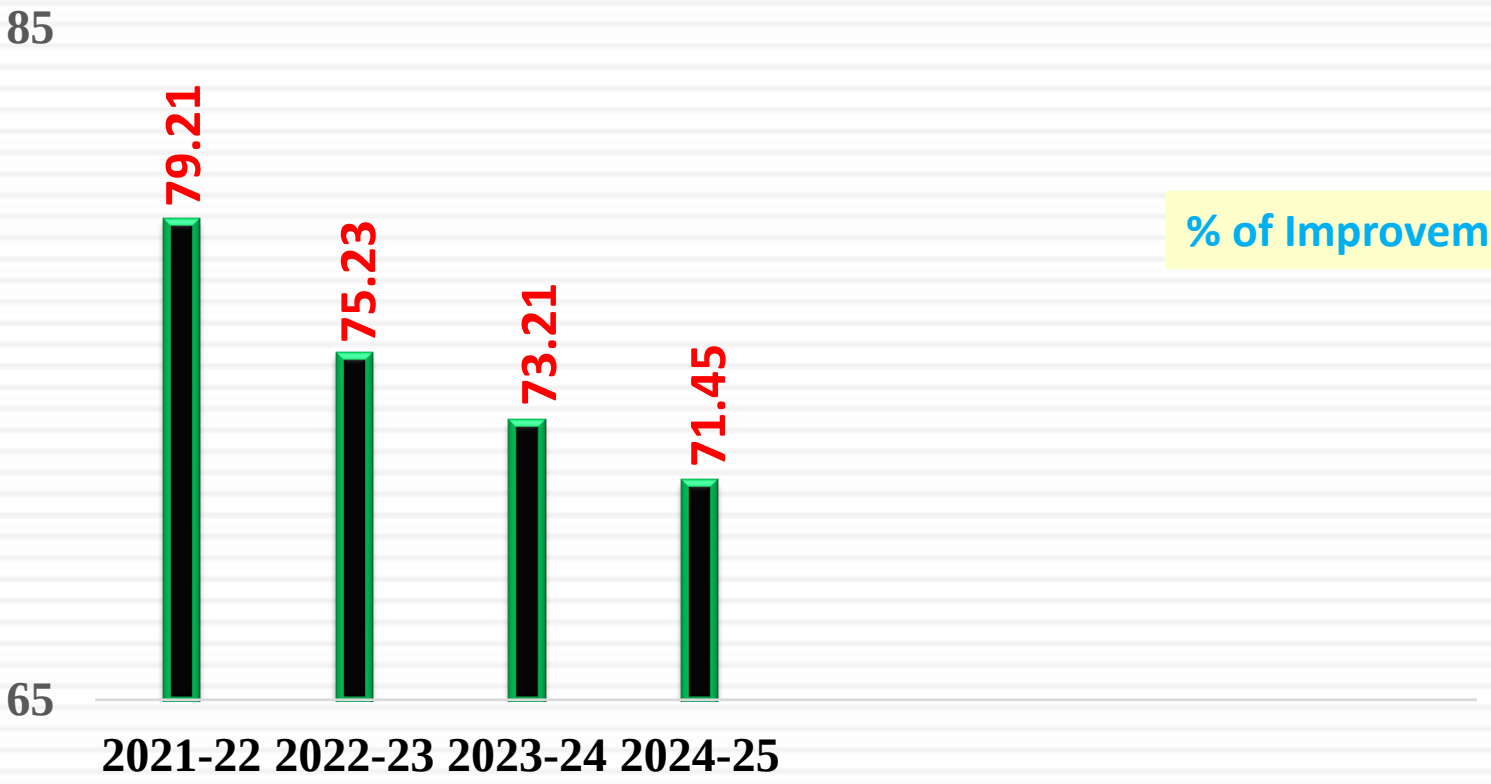
% of Improvement : 1.91

Power Consumption up to Clinkerization (kWh/ MT Clk)



% of Improvement : 8.44

Overall Cement Power Consumption (kWh/ MT)



Up to July-24

% of Improvement : 9.79

Internal Bench Marking

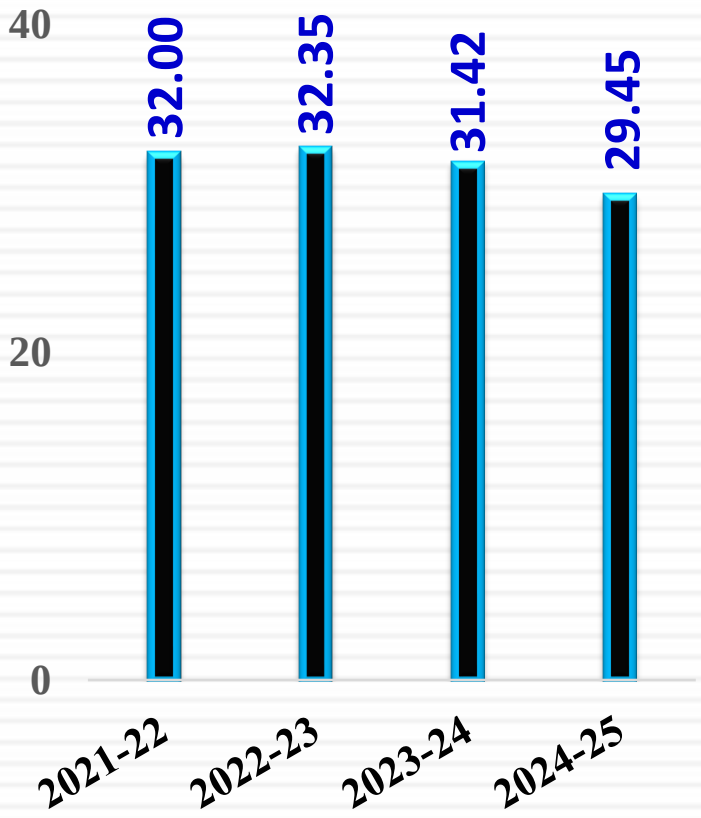
	Power	Budget target
	Power up to Clinkerization for Kiln-2	48.00
	Power up to Clinkerization for Kiln-3	46.00
	Sp. Heat Consp (Kcal/Kg) for Kiln-2	718
	Sp. Heat Consp (Kcal/Kg) for Kiln-3	715
	Plant total power in PPC	66.61
	Plant total Power in OPC	83.23
	Plant total power in TEC	73.85

Road Map to meet the target :

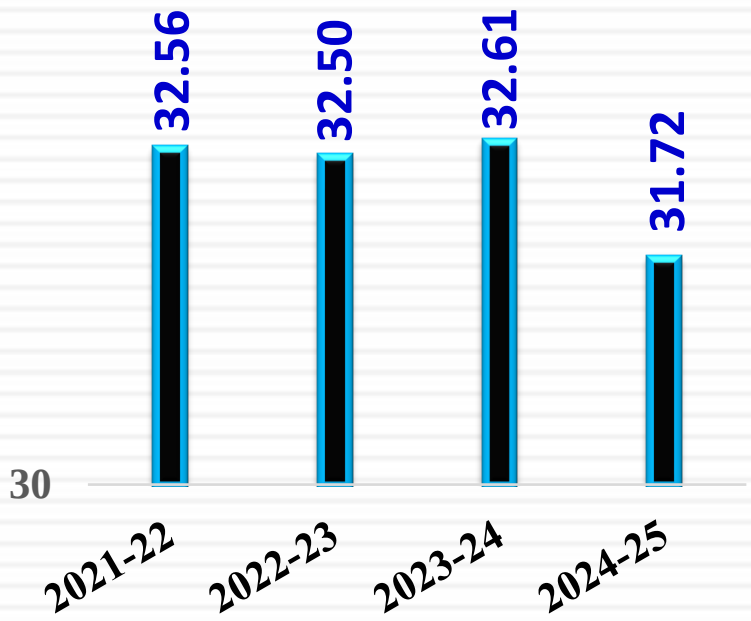
- Consistent Quality in the Raw Meal (LSF Stdev <1.5%) for smooth operation & easy burning.
- Identify & minimize the False air entry across the pyro section by arresting leakages for better productivity with optimum energy consumption.

Cement Grinding

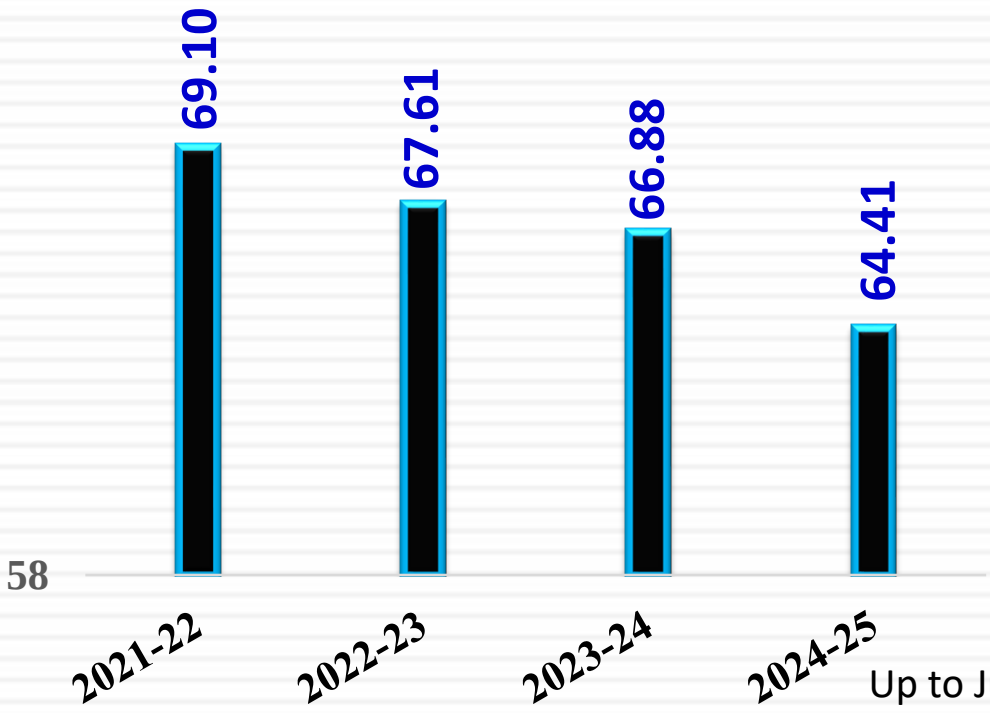
Cement mill power in PPC



Cement mill power in OPC



Overall PPC Power Consumption (kWh/PPC)

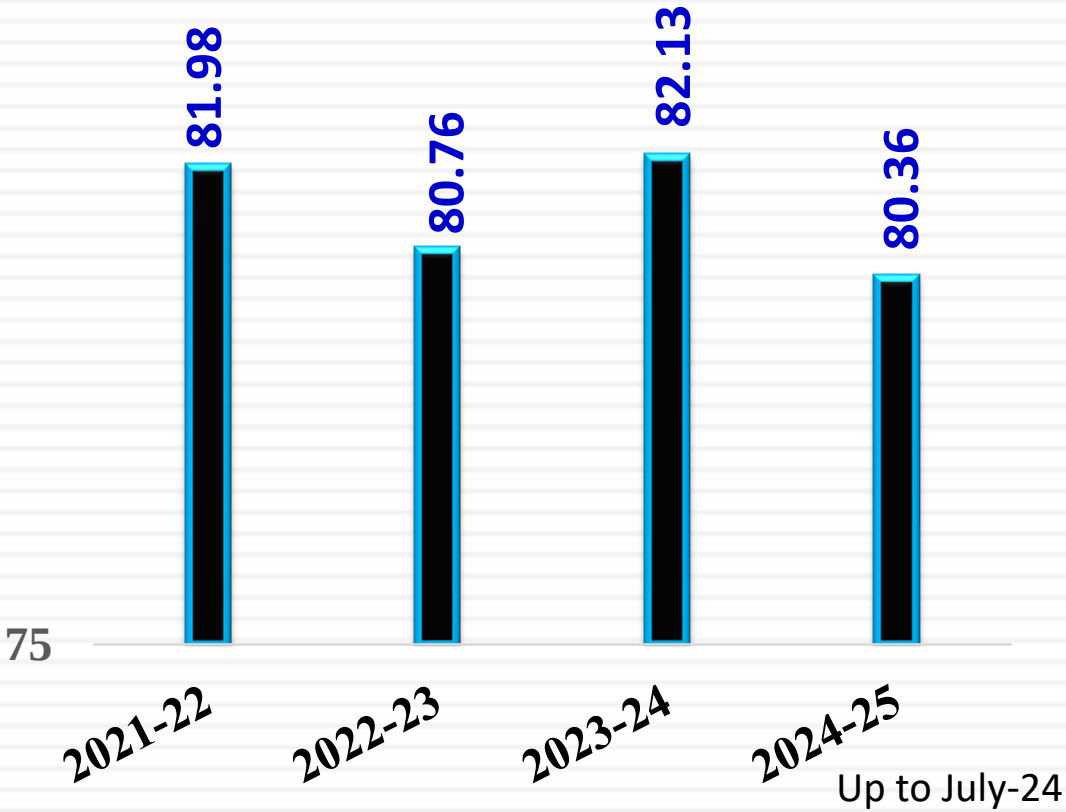


Up to July-24

	Fly ash% in ppc	Fly ash% in opc
2021-2022	28.30	1.39
2022-2023	29.93	1.29
2023-2024	30.62	1.27
2024-2025	30.07	1.00

% of Improvement : 6.78

Overall OPC Power Consumption (kwh/OPC)



Up to July-24

% of Improvement : 1.97

Encon Project Plan for 2024-25

KILN-3 Expansion Project (with Double String Preheater):

- To Enhance the Clinker production from 2.6 to 4.0 MTPA & Cement from 2.0 to 4.0 MTPA by the modification in Raw Mill, Preheater, Coal Mill, Cement Mill & Packing Plant
- Waste Heat Recovery Generation will be increased from 8 MW to 10.25 MW by installing another Boiler to the Pyro System.

❖ Limestone Crusher	1200 TPH
❖ Limestone stacker	1200 TPH
❖ Limestone reclaimer	650 TPH
❖ Raw Mill	510 TPH
❖ Kiln	460 TPH
❖ Coal Mill	60 TPH

Encon Project Planned for 2024-25(Line-2 PH)

Observation:

- High Dust loss, High radiation loss & High pressure drop (200mmwg)at Line-2 PH top cyclone

Action to be taken:

- To modify a top cyclone to reduce dust loss, high pressure drop and radiation.

After Modification

Benefits Achieved:

- Dust loss will be reduced from 10% to 5%,
- 80 mmwg pressure drop will be reduced.
- Thermal Saving : 5.0 kcal/kg clinker
- Production saving: 100 TPD
- Investment-218 Lakhs

Encon Project Planned for 2024-25(Line-1)

Observation:

Huge flushing/variation in fine coal feeding which will resulting in high SP.Heat consumption.

Action to be taken:

To modify a KC & PC pumping to high efficiency system(Multi core/FLS) to decrease the Fuel loss.

Benefits Achieved:.

Thermal Saving : 10 kcal/kg clinker

Investment-300 Lakhs

Annual saving-94 lakhs/Annum

Note: If Kiln-2 firing system will be upgraded to Multi core and the existing Kiln-2 firing system to be used in Line-1, savings will come from both the Kilns with Single Investment

Energy Saving Projects

Financial Year	No. of Energy Saving Project	Investment (INR Million)	Electrical Savings (Million kWh)	Thermal Savings (Million Kcal)	Total Savings (INR Million)	Impact on SHC (Electrical kWh/ MT cement
2021-22	01	1000	53.83	0	322.95	2.91
2022-23	06	1530.10	50.79	0	156.32	2.66
2023-24	02	30.78	3.27	45	30.58	1.46

Energy Saving Projects

Financial Year	Name. of Energy Saving Project	Investment (INR Million)	Electrical Savings (Million kWh)	Thermal Savings (Million Kcal)	Total Savings (INR Million)	Impact on SEC (Electrical kWh/ MT cement or Kcal/Kg cement)
2021-22	WHR Installation	1000	53.83	0	322.95	2.91
2022-23	New Crusher Installation	180				
	Raw (Ball)Mill to VRM	300	7.92	0	43.24	4.15
	Coal (Ball) Mill to VRM	200	13.20	0	11.08	6.92
	Cement (Ball) mill to VRM	550	29.04	0	97.57	15.24
	Removal of GCT	0.10	0.63	0	4.43	0.33
	New Packing Plant Installation	300				

Energy Saving Projects

Financial Year	Name. of Energy Saving Project	Investment (INR Million)	Electrical Savings (Million kWh)	Thermal Savings (Million Kcal)	Total Savings (INR Million)	Impact on SEC (Electrical kWh/ MT cement)
2023-24	Increased Clinker production in kiln-2	120	0.03	45	28.32	0.013
	Aero pole pumping	0.78	3.24	0	2.26	1.45

Year wise WHR savings	
year	Savings (INR Million)
2021-22	322.95
2022-23	319.80
2023-24	295.00
2024-25	103.80
Total	1041.55

Innovative Projects (Up gradation)

MODERNIZATION OF RAW MILL-1 :

Old Raw Mill

- Capacity 50 TPH
- Power:25 kwh/tom
- High Residue

New VRM

- Capacity 175 tph
- Power:19kwh/tom
- Less Residues

This Project is innovative because of the Technology up-gradation, Energy Efficient, Increased Productivity, Improved product quality & Cost savings.

Innovative Projects (Up gradation)

MODERNIZATION OF COAL MILL-1 :

Old Coal Mill

- Capacity 12 TPH
- Power:55 kwh/tom
- High Residue
- Not suitable for pet coke grinding

New VCM

- Capacity 40 tph
- Power:45kwh/tom
- Less Residues<15%
- Suitable for pet coke

Innovative Projects (Up gradation)

MODERNIZATION OF CEMENT MILL-1 :

Loesche LM 41.2+2CS

Cement Ball Mill

- Capacity 50 TPH
- Power:35 kwh/tom

New Cement Mill

- Capacity 130 tph
- Power:28kwh/tom

Innovative Projects Implemented

Raw meal pumping from Line-1 to Line-2

Power consumption per ton pumping with FK Pump:5.5 kwh/ton

Power consumption per ton pumping with Aeropole:1.33 kwh/ton

Power saving per ton of Raw Meal:4.17 kwh/ton

Date	R.Hrs	Prod	TPH	Sp.Power (kwh/Ton)
27-Jan-24	6.00	557	93	2.74
01-Mar-24	11.75	1801	153	2.03
18-Mar-24	17.83	3006	169	1.60
26-Mar-24	8.25	1484	180	1.33

Energy saving per day: 15,012kwh

Cost saving per annum Rs: 2,26,98,144

Investment done:79 Lakhs

Pay back period:4.17 Months

Utilisation of Renewable Energy Sources

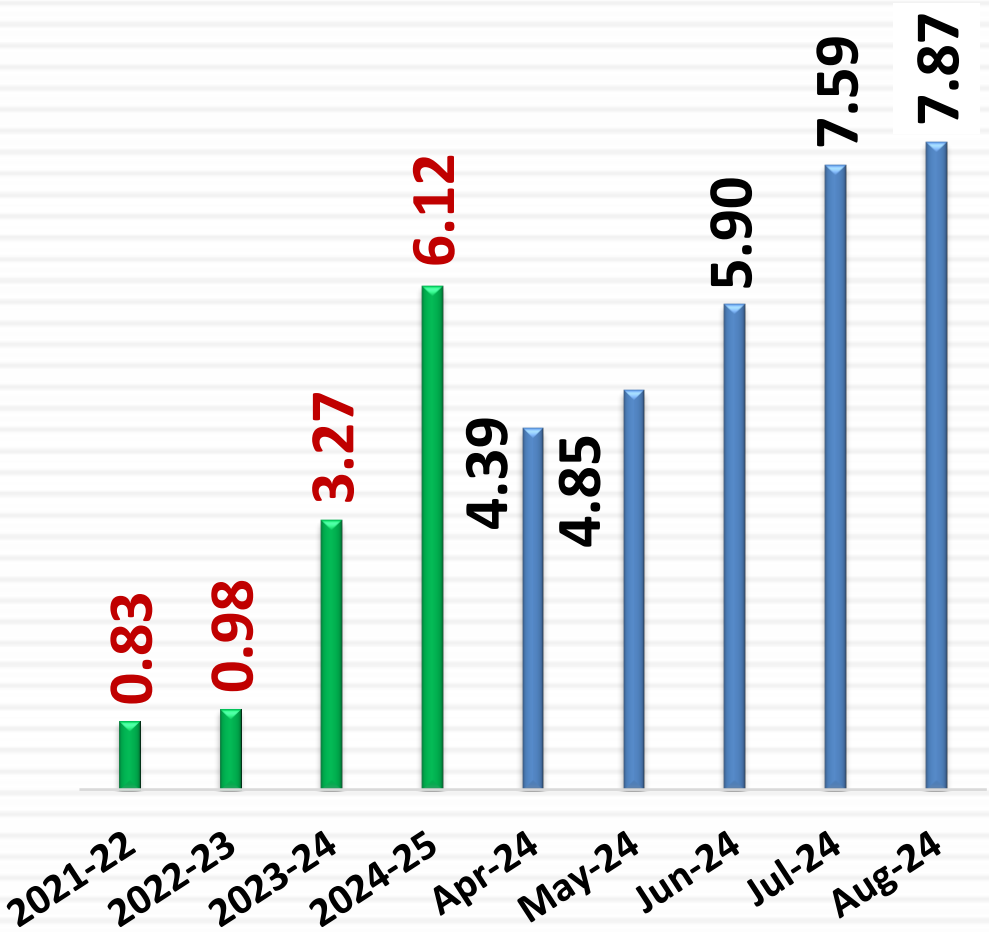
Financial Year	Source (wind, solar…)	Installed Capacity (MW)	Capacity addition (MW) after 2021	Total generation (million kWh)	Share % wrt overall energy consumption
2022-23	**Solar**	4.52		7.96	2.00
2023-24	**Solar**	4.52		5.21	3.30

Waste Utilisation & Management

Waste utilized as Alternate Fuel in last three years (FY2022-2023 to FY2024-25).

S.No	Financial Year	Waste as fuel	Quantity (MT)	GCV (kcal/kg)	Waste as % of total fuel (TSR%)
1	2022-23	AFR Liquid /solid, spent Carbon , bison waste, rice husk, RDF/plastic	10,924.09	2081	0.98
2	2023-24	AFR Liquid /solid, spent Carbon , bison waste	27,354.62	3177	3.16
3	2024-25	AFR Liquid /solid, spent Carbon , bison waste	10,085.64	3266	6.11

MONTH WISE TSR%



August-24 Month

AFR Liquid consumption	: 849 MT
Bison waste(Wood Flakes)	: 632 MT
AFR solid & Spent Carbon	: 274 MT
Carbon powder	: 557 MT

AFR FACILITES IN PLANT

Liquid Pumping

Solid Feeding system

GHG Inventorisation

❑ The following Scopes were included in the last 3 financial Years:

Scope-1 emissions: Direct emissions from cement plant (combustion, calcination)
Scope-2 emissions: Indirect emissions from electricity & Heat purchases.
Scope-3 emissions: Indirect emissions from raw material extraction transportation.

❑ Short Term GHG emission reduction Plan:

Our Company's short term goal is to reduce the OPC grinding & started a new brand of cement called "VISISTHA" which has same quality & strength just like OPC.

❑ Long Term GHG emission reduction Plan:

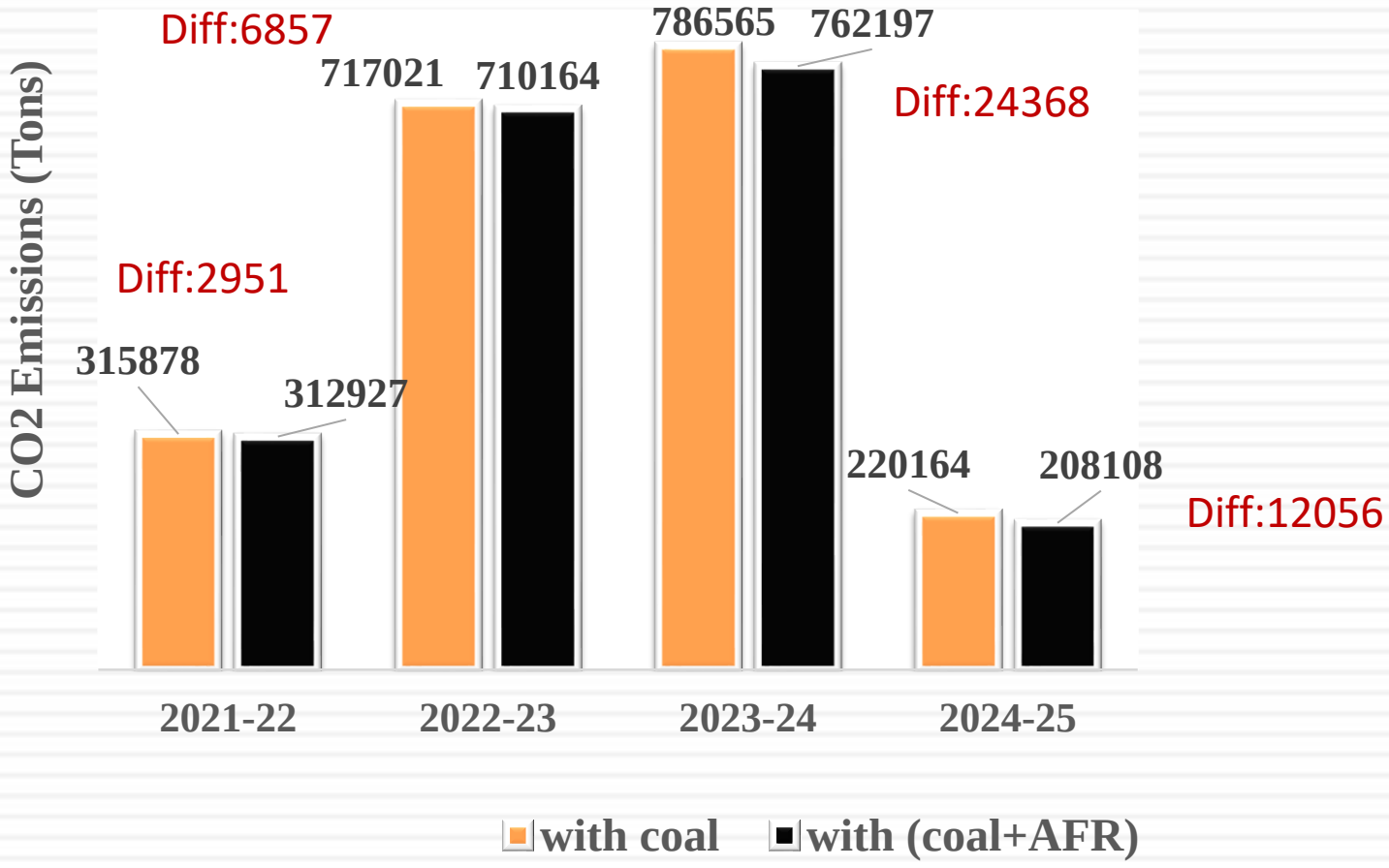
To increase the usage of Alternative Fuels instead of Coal by reducing the CO2 emissions by 24368 MT of CO2 in (2023-24).Now, we are planning to increase the biomass, RDF/Plastic usage to 10-20% of total fuel mix by 2027.

❑ GHG intensity of peers/competitors:

we are planning to increase the WHR generation(11 MW) by extending Line-3 Kiln Double cyclone project in order to increase the production and the same time reduce the GHG Emission Intensity for 750-800 Kg CO2 /Ton of Cement

GHG Inventorisation

CO2 Emissions with Coal & (Coal+AFR) Consp



EMS System & other Requirements

Environment Monitoring System: -

OCEMS arranged and monitoring continually for Stacks and Ambient Air Quality data uploading to CPCB & TGPCB.

Monthly monitoring done by Third party NABL & MOEFCC Accredited Laboratory M/s. Lawn Enviro Associates - Hyd.

As per Preventative maintenance schedules for pollution control equipment's and controlling emissions under limits.


CERTIFICATE

The Certification Body of TÜV SÜD South Asia Private Limited certifies that

NCL INDUSTRIES LIMITED Cements Division
UNIT I - SIMHAPURI, MATTAPALLY VILLAGE, MATAMPALLY (MANDAL), SURYAPET (DISTRICT) - 508 204, TELANGANA, INDIA

has implemented Quality Management System in accordance with ISO 9001:2015 for the scope of

Manufacture of Ordinary Portland Cement of Grade 43, Grade 53, Grade 53S (IRS - T40) & Portland Pozzolana Cement

The certificate is valid in conjunction with the main certificate from 2021-09-24 until 2024-09-23

Certificate Registration No. 99 100 21859/02
Date of Initial certification: 1998-05-18
Issue Date: 2021-09-23 Rev. 00

Action Plan: - Implementation of EMS by 2025-26.

Net Zero Commitment

- The cement industry has a target of achieving net-zero carbon emissions by 2050.
- This is due to the industry's high carbon emissions, which come from various sources, including the calcination of limestone, burning fossil fuels, and transportation and electrical energy consumption
- 36% Greenbelt Developed in plant area out of 48.12 Ha

Roadmap for achieving the target

- To achieve net zero, all the industries should focus to reduce the annual CO2 intensity by 4% by 2030 and it requires a suitable action plans with innovative taught and the support needs from the R&D Centres such as Govt Authorised bodies (BIS) and NCBM.

- Reducing the clinker-to-cement ratio: By using clinker substitutes, increasing of fly ash % and slag etc.
- Solid AFR system will be installed by the year 2024-25
- The industry will also need to accelerate its decarbonisation measures, cutting CO2 emissions by a further 25% by 2030.

Awards & Major Achievements

Life time Achievement Award for Mr.K.Ravi (2020-21)

Excellence in Corporate Social Responsibility by FTCCI - 2022

Best Women Entrepreneur Award 2024 by HMTV for Mrs. Roopa Bhupatiraju

Awards & Major Achievements

S.No	Awards	Company	year
1	Best Women Entrepreneur Award	HMTV	2024
2	Great Place to Work	Great Place to Work	2024-2025
3	Great Place to Work	Great Place to Work	2023-2024
4	Excellence in Employee Welfare Initiatives	FTCCI	2022-2023
5	Excellence in Corporate Social Responsibility	FTCCI	2022
6	Certification of Appreciation	Bureau of Indian Standards	2022
7	Business Leader of the Year	World Leadership Congress Awards	2021
8	Grand Stand Award	ACETECH	2021
9	Great Place to Work	Great Place to Work	2020-2021
10	Best Entrepreneur of the Year	HMA	2020-2021
11	Fastest Growing Cement Company Award	5th Indian Cement Review Award	2021
12	Great Place to Work	Great Place to Work	2019-2020

Awards & Major Achievements

S.No	Awards	Company	year
13	Corporate Social Responsibility	HMA	2018
14	Telangana Manufacturing Leadership	Telangana Manufacturing Leadership Awards	2018
15	Best Manufacturing Company Award(Medium Scale)	HMTV	2018
16	Business Leader of the Year	TV5 NEWS	2017
17	Manufacturing Leader of the Year	TV5 NEWS	2017
18	Fastest Growing Cement Company Award-Small Category	Indian Cement Review Award	2016
19	Certification of Excellence	Inc 500	2013
20	Certification of Excellence	Inc 500	2012
21	Best Entrepreneur of the Year	HMA	2012
22	Excellence in Employee Welfare Initiatives	FAPCCI	2010-2011
23	Certification of Excellence	Indian Brand Equity Foundation	2009
24	Mokshagundem Vishweshwaryya	All India Manufacturers Organisation	2009

Awards & Major Achievements

NCL Industries Limited' impressive track record of won 14 prizes in **"Shri P.A.C Ramasamy Raja Memorial Inter Cement Plant Volleyball Tournament" [April-2024]** with other cement plants (Ramco Supercrete, Bhavya cements, Hemadri Cements, Ramco Industries Limited,KCP-Muktyala,Sagar cements, Zuari Cements, Ramco Super Plasters, KCP Macherla, Chettinad Cements) which demonstrates their commitment to excellence in all aspects of their operations including Sports.

THANK YOU

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