UCWL UDAIPUR CEMENT WORKS LIMITED

Confederation of Indian Industry

CII National Award for Excellence in Energy Management 2024

Presented by:

Mr. Tushar Khandadia- Sr. GM–Production

Mr. Vikas Garg- Energy Manager

UCWL UDAIPUR CEMENT WORKS LIMITED

JK Organization:

Confederation of Indian Industry

J.K. Organization is multinational group head-quartered in India with a heritage of more than 139 years. The Group has multi-business, multi-product and multi-location operations, with its footprints in various countries across the globe.

The Group today makes up one of India's largest conglomerates with an annual turnover exceeding US $4 Billion. Our exports span over 100 countries across six continents. Our businesses are JK Tyre & Industries Limited, JK Lakshmi Cement Limited, JK Paper Ltd., JK Fenner (India) Ltd., JK Agri Genetics Limited, JK Foods, JK Insurance Brokers Limited, CliniRx, DELOPT and Global Strategic Technologies (GST).

UCWL UDAIPUR CEMENT WORKS LIMITED

JK Lakshmi Cement:

Confederation of Indian Industry

JK Lakshmi Cement Limited is a part of the prestigious JK Organization. We are a renowned and well-established name in the Indian Cement industry for four decades and have an annual turnover of over Rs 8000 crores. We have a formidable presence in Northern, Western and Eastern India's cement markets.

With a wide network of over 400 cement dumps and more than 4000 channel partners, JK Lakshmi Cement brand enjoys a premium position in its markets and is recognized for its immaculate quality and services. A vast pool of highly trained & dedicated marketing and technical service team helps the company to service its customers at their doorstep.

With a place amongst the least cost producers in the industry, the operating parameters of the company are at par with the international standards. JK Lakshmi Cement is the first cement manufacturer in India that introduced colored bags, has a wide product portfolio catering to varied construction requirements with cement grades like OPC 43 & OPC 53, Blended Cement (PPC, PSC and composite Cement). With formidable cement brands like JK Lakshmi Cement, JK Lakshmi PRO+ Cement, Platinum Heavy Duty Cement, JKLC Sixer Cement and Super Sixer Weather Guard Cement, we offer impeccable quality products for discerning customers.

INDIA AB SOCH KARO

BULAND

UCWL UDAIPUR CEMENT WORKS LIMITED

UCWL Overview:

Confederation of Indian Industry

- Udaipur Cement Works Limited, (formerly known as JK Udaipur Udyog Ltd) was incorporated as a Public Limited Company on 15th March 1993 and the name of the Company was subsequently changed to its present name Udaipur Cement Works Limited from 19th May 2006.

- The Company is a subsidiary of JK Lakshmi Cement Limited which is part of reputed business conglomerate JK Organization (JKO) that has rich business legacy of more than 139 years.

- The company has an Integrated Cement Manufacturing unit with installed cement production capacity of 2.2 Million tonnes per annum (MTPA). Considering the demand for our products and the projected growth of the cement market, UCWL has taken steps to enhance its capacity from 2.2 million tonnes per annum to 4.7 million tonnes per annum.

- 6 & 9.5 MW Waste Heat Recovery System from Line 1 & Line 2 respectively, that utilizes the waste heat of kiln.

- 15.51 MW of Solar Power Plant (Including Floating Solar). UCWL is State's First Industry to introduce & implement Floating Solar Project.
  - Solar 1 : 10.16 MW
  - Solar 2 : 4.35 MW
  - Solar 3 (Floating) : 1 MW
  - Solar 4 (Floating) : 2.7 MW (Under installation)


National Accreditation Board for Testing and Calibration Laboratories

CERTIFICATE OF ACCREDITATION

UDAIPUR CEMENT WORKS LIMITED (QUALITY CONTROL LABORATORY)

has been assessed and accredited in accordance with the standard

ISO/IEC 17025:2017

"General Requirements for the Competence of Testing & Calibration Laboratories"

for its facilities at

SHRIPATNAGAR, CFA, PO: DABOK, UDAIPUR, RAJASTHAN, INDIA

in the field of

TESTING

Certificate Number: TC-12697

Issue Date: 05/08/2023 Valid Until: 04/08/2025

This certificate remains valid for the Scope of Accreditation as specified in the annexure subject to continued satisfactory compliance to the above standard & the relevant requirements of NABL.

Name of Legal Identity : UDAIPUR CEMENT WORKS LIMITED

Signed for and on behalf of NABL

N. Venkateswaran
Chief Executive Officer

NABL


Bureau Veritas Certification

UDAIPUR CEMENT WORKS LTD.

UCWL

SHRIPATNAGAR, P.O. C.F.A. DABOK, UDAIPUR – 313 022, RAJASTHAN, INDIA

Standards

ISO 9001:2015, ISO 14001:2015 & ISO 45001:2018

Scope of certification

MANUFACTURE & DISPATCH OF CLINKER, ORDINARY PORTLAND CEMENT (OPC) OF GRADES 43 & 53, AND PORTLAND POZZOLANA CEMENT (PPC)

EnMS


Bureau Veritas Certification

UDAIPUR CEMENT WORKS LIMITED

UCWL

SHRIPATNAGAR, P.O. C.F.A. DABOK, UDAIPUR – 313 022, RAJASTHAN, INDIA

Standard

ISO 50001:2018

Scope of certification

MANUFACTURE AND DISPATCH OF CLINKER, ORDINARY PORTLAND CEMENT (OPC) AND PORTLAND POZZOLANA CEMENT (PPC)

IMS

UCWL UDAIPUR CEMENT WORKS LIMITED

UCWL Infographic

Confederation of Indian Industry

UCWL is a subsidiary of JK Lakshmi Cement Ltd.

Located in Dabok near Udaipur, Rajasthan

Installed Production Capacity of 4.7 mMTPA

Brand Name: Platinum Supremo Cement, Platinum Heavy Duty Cement

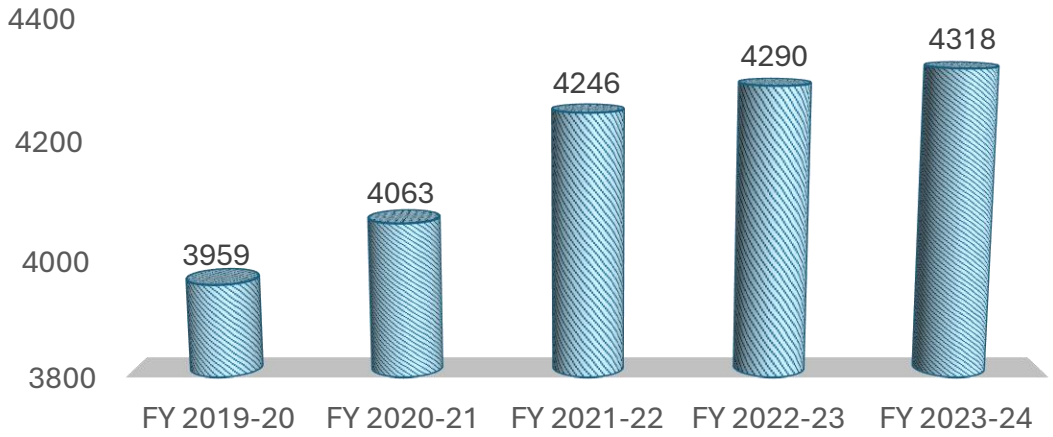
ISO 9001:2015,ISO 14001:2015,ISO 45001:2018 ,ISO 5001: 2011, ISO 14046: 2018

UCWL UDAIPUR CEMENT WORKS LIMITED

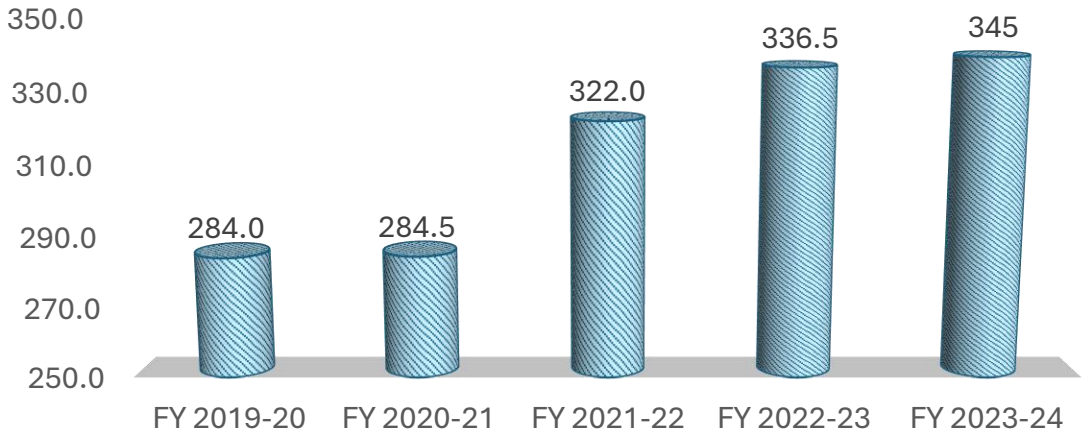
UCWL Performance FY 2020-24

Confederation of Indian Industry

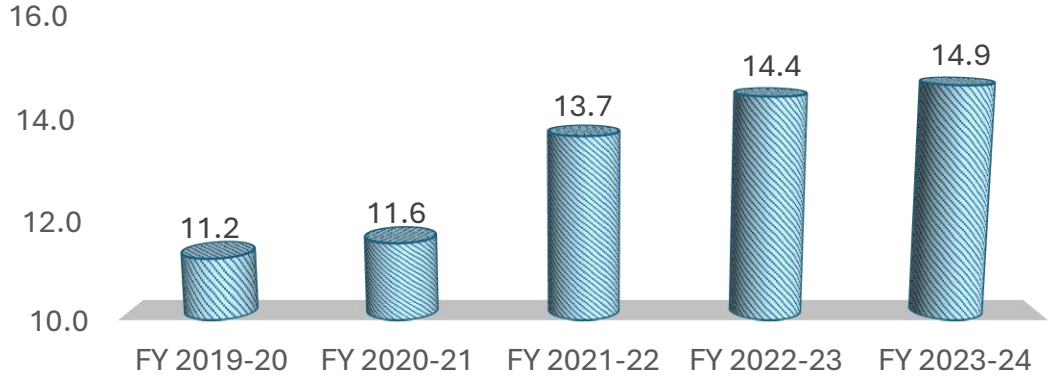
CLINKER PRODUCTION TPD



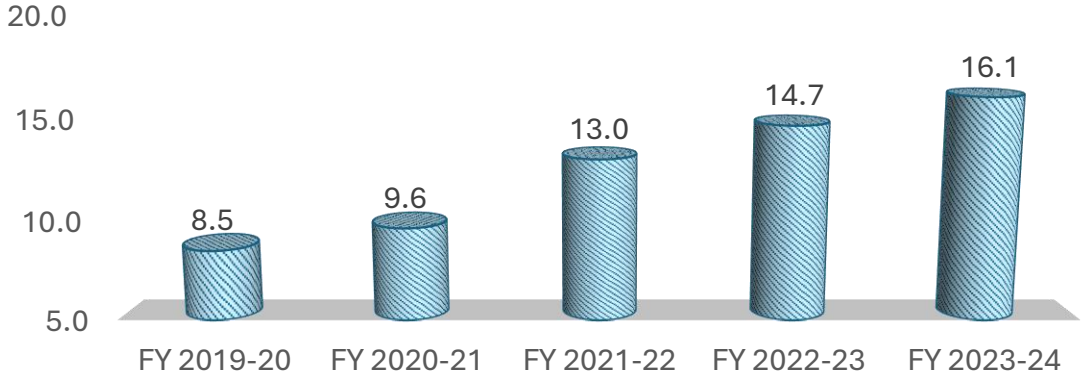
KILN 1 RUN DAYS



CLINKER PRODUCTION LACS PER YEAR



CEMENT PRODUCTION LACS PER YEAR



UCWL UDAIPUR CEMENT WORKS LIMITED

UCWL Performance FY 2020-24

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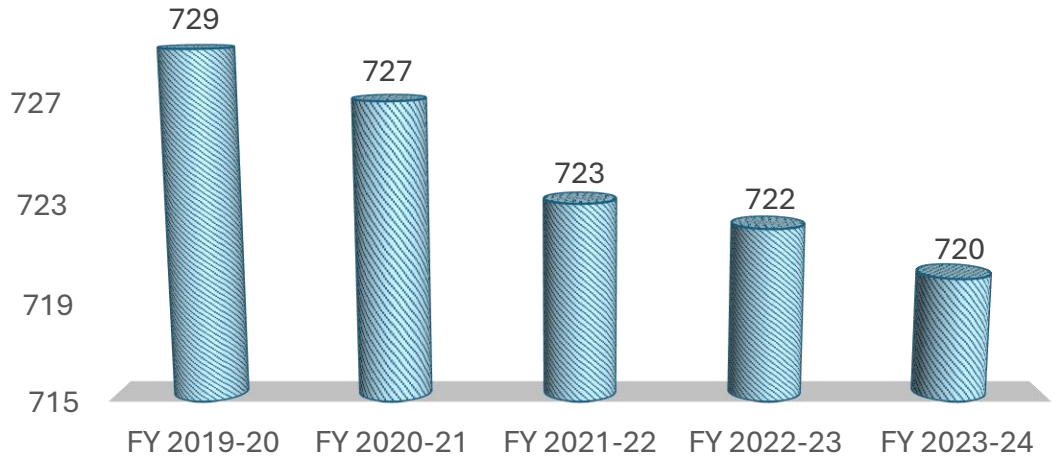
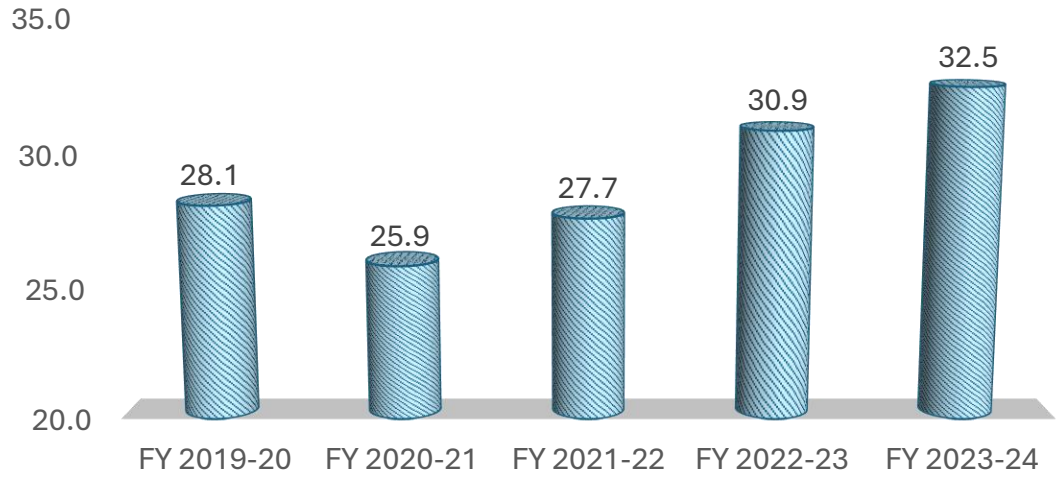
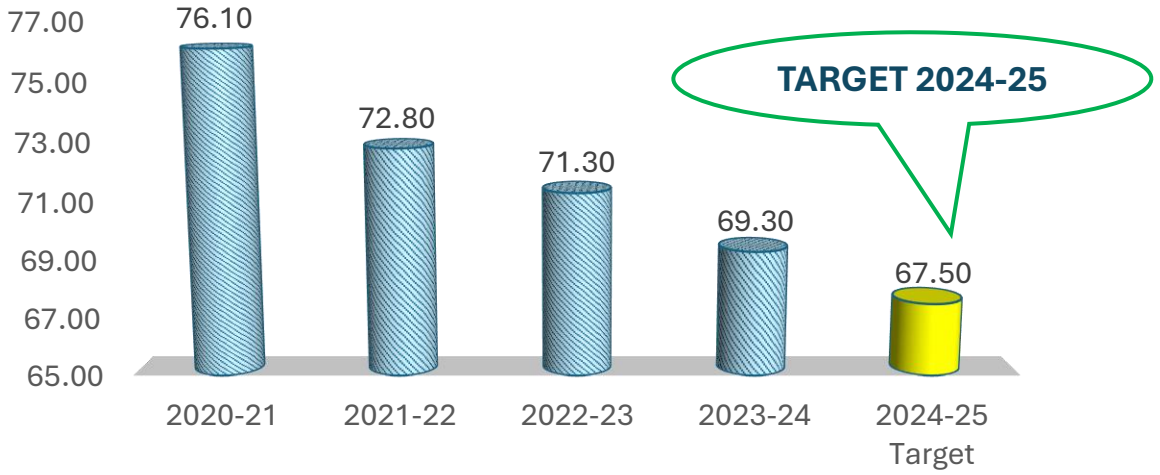
SPECIFIC HEAT CONSUMPTION K.CAL/KG



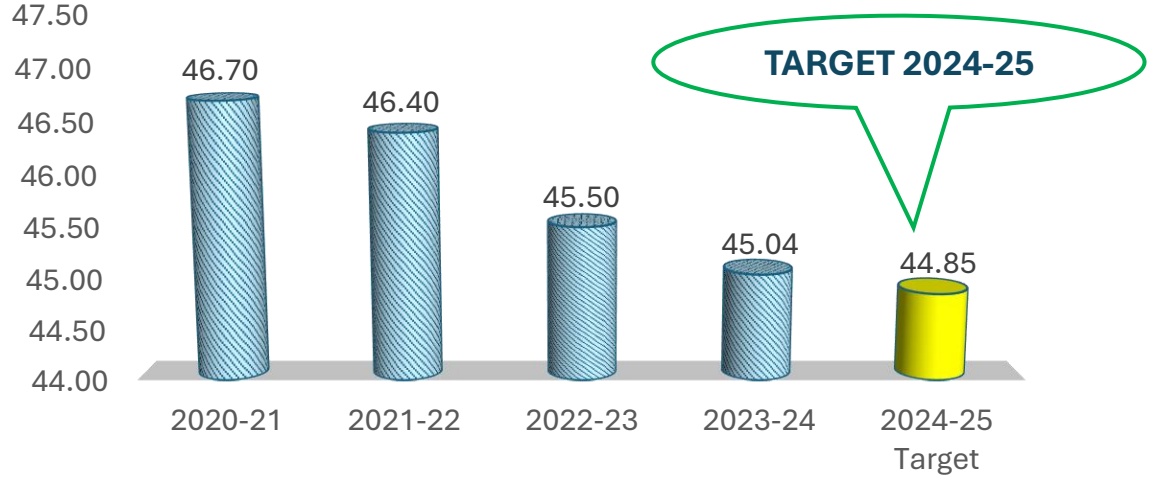
FLY ASH CONSUMPTION IN PPC %



TOTAL POWER KWH/TON CEMENT



(KWH/T OF CLINKER)

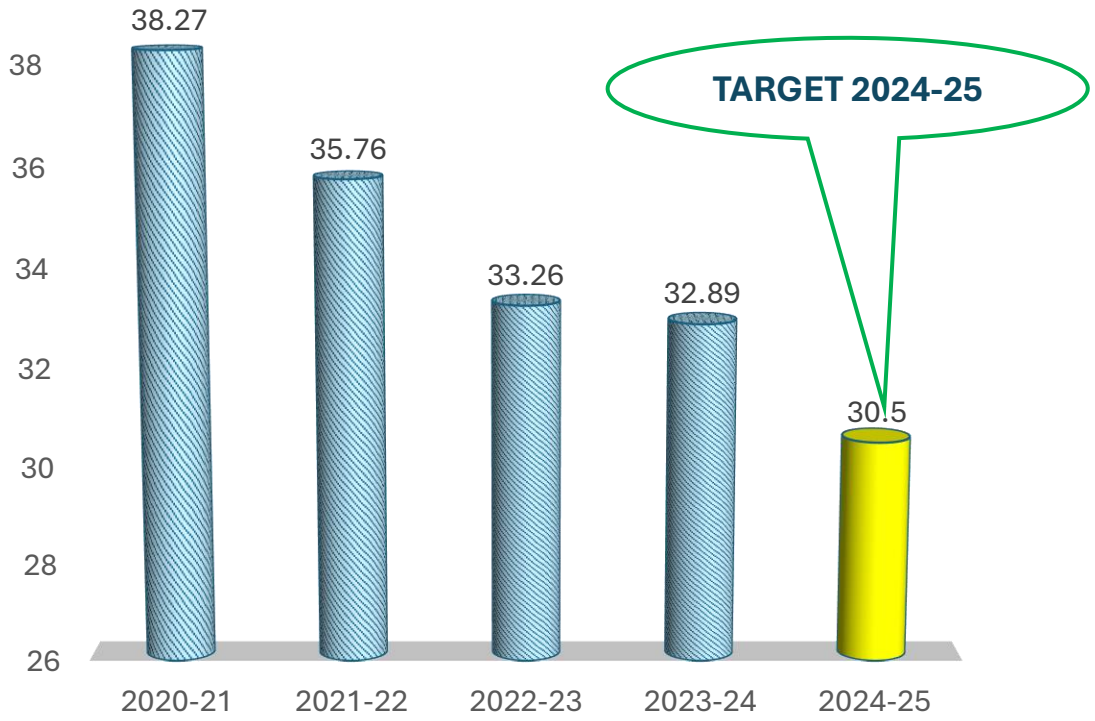


UCWL UDAIPUR CEMENT WORKS LIMITED

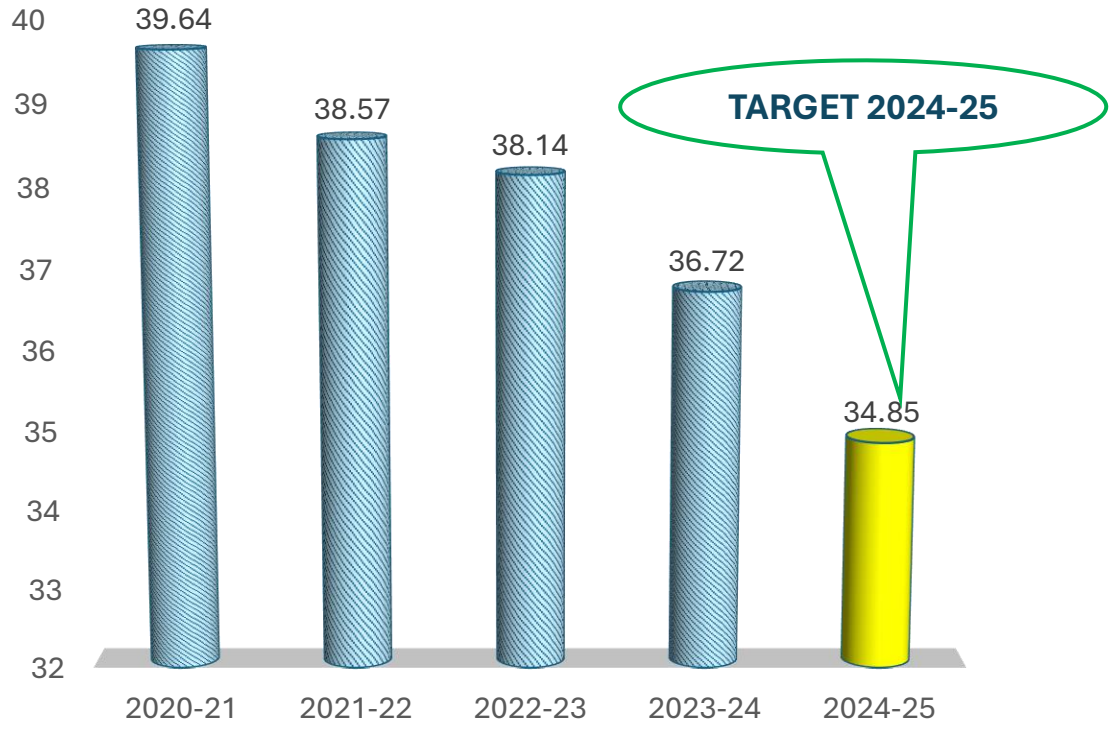
UCWL Performance FY 2020-24

Confederation of Indian Industry

PPC POWER



OPC POWER



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UCWL PAT Target

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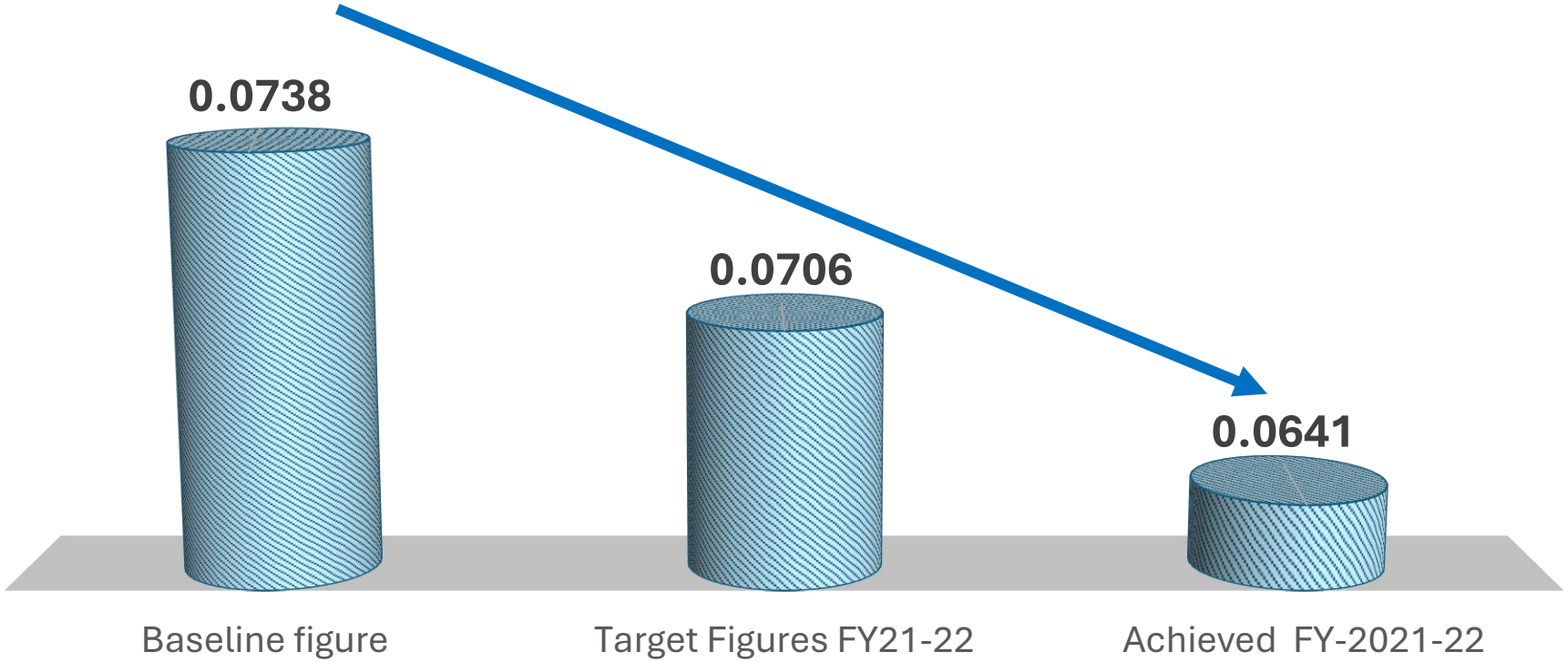
Toe/Ton of Equivalent Product



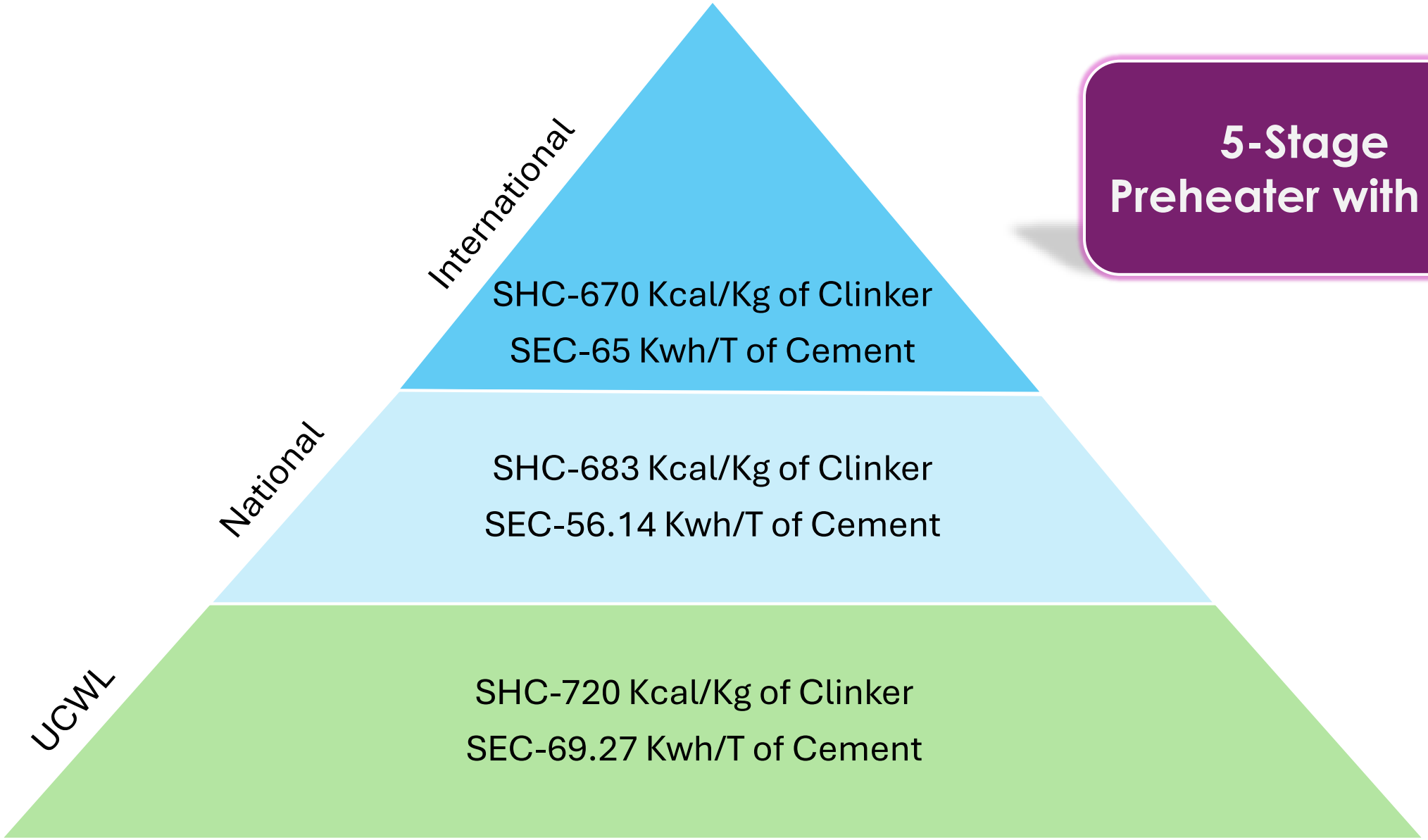
UCWL was notified under the PAT Cycle-V (FY 2019-FY 2022)
and at the end of the Cycle UCWL secured 8215 ESCerts

UCWL UDAIPUR CEMENT WORKS LIMITED

Benchmarking

Confederation of Indian Industry

5-Stage Preheater with ILC



Reference : CII Energy benchmarking for Cement Industry May 2023 Version 6.0

UCWL UDAIPUR CEMENT WORKS LIMITED

Road Map To Achieve Target

Confederation of Indian Industry

UCWL UDAIPUR CEMENT WORKS LIMITED

Future Projects

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SN	Project Name	Benefits	Estimated Cost (Rs. Cr)
1	Installation of additional AQC boiler in Line 1 (60K NM3/Hr.) & Steam pipeline from Line 1 to Line 2	Increase WHR generation by 1.0 MW & reduction in wear/tear of existing boiler	39
2	Inhouse development of synthetic Gypsum plant : 1000 TPD (Sufficient for 4.0 MTPA Cement)	Considering 2.5 MTPA Cement gypsum getting benefit of 7.0 CR/Annum (INR 400 benefit/MT Gypsum)	17
3	Upgradation of PH & ESP Fan for higher pressure rating (Present PH : 700 mmWG & Cooler ESP : 100 mmWG)	Benefit of 50 Kwh/Hour in power consumption & wear/tear of the impeller &	1.5
4	Solid AFR feeding system in Kiln-2 with pre-processing circuit	Solid AFR feeding increase up to 15 TPH in step by step (TSR up to 15 % in next 4 years)	20
5	Installation of Cross Belt Analyzer (CBA) on Raw Mill feed belt with blend expert software control of WF to optimize additives & improve Clinker Productivity	Increase Clinker production by 40 MT/Day (Benefit of 1.0 CR /Annum)	3.0

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Project Summary

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Year	No of energy Saving Projects	Investment (₹ Million)	Electrical Saving (Million kWh)	Thermal Saving (Million kcal)	Total Savings in (₹ Million)
FY 2021-22	5	6.475	0.834	90	80.21
FY 2022-23	9	7.16	1.244	2847.6	17.71
FY 2023-24	8	43.45	1.98	2947	189

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Encon Project FY 2021-22

Confederation of Indian Industry

SrNo	Title of Project	Annual Electrical Saving (kWh)	Annual Thermal Saving	Total Annual Savings (₹ millions)	Investment Made (₹ millions)
1	Installation of VFD in CM-3 Bag Filters.	400752	0	32.06	0.58
2	Replaced reciprocating compressor with Screw Compressor	71280	0	5.70	3.50
3	VFD Installation in Air Slide Blowers of Packing Plant.	56000	0	4.48	0.27
4	VFD in CM-2 CA Fan	237600	0	19.01	1.16
5	Increased Ventury to improve material flow from 4th Cyclone to Kiln I/L to improve Kiln Stability and Production.	68362	90	18.96	0.96

UCWL UDAIPUR CEMENT WORKS LIMITED

Encon Project FY 2022-23

Confederation of Indian Industry

SrNo	Title of Project	Annual Electrical Saving (kWh)	Annual Thermal Saving (Kcal)	Total Annual Savings (₹ million)	Investment Made (₹ million)
1	In-house modification of RABH purging sequence logic by implementation in DCS	144360	0	1.15	0.10
2	In raw mill replaces rotor blades with modify angles resulting reduction in raw mill residue.	216586.6	0	1.73	1.00
3	CM1 & CM2 Intermediate Diaphragm Scoop Opening . Reduced Over Grinding and Increased Out by Increasing return to mill	293700	0	2.35	0.00
4	In-house Designed & installed Standby Girth Gear Lubrication System	16800	312768000	0.98	0.50
5	In clinker cooler inhouse development of stand by cooler fan system for recuperation zone .	25200	469152000	1.47	0.00
6	Cement Mill 1 & 2 Reject material belt replaced by closed air slide.	146850	0	1.17	1.46
7	In-House Development of bulk cement loading in container	40633.2	0	0.33	0.10
8	ESP Inlet duct & Burner trolley modification for Kiln Burner replacement in short duration of time.	0	622080000	1.68	1.00
9	Twin Cyclone Modification	360299.52	1443600000	6.85	3.00

UCWL UDAIPUR CEMENT WORKS LIMITED

Encon Project FY 2023-24

Confederation of Indian Industry

Sr. No.	Title of Project	Annual Electrical Saving (kWh)	Annual Thermal Saving million (kCal)	Total Annual Savings (₹ million)	Investment Made (₹million)
1	Reduction of Tertiary temperature difference below 100 deg C between the cooler side and PH side. (MEA)	0	1791.31	24.1	NIL
2	Reduction of Raw Mill & VCM False Air	602949	0	42.21	NIL
3	Reduction of VCM Coal False Air	71465	0	5	NIL
4	Air Compressor Pressure optimization in Coal Mill (7.1 Kg), Pyro (7.3 Kg), Packing Plant (7.5 Kg).(MEA)	182002	0	12.7	NIL
5	Utilizing hot gases for VCM from AQC Outlet instant of PH Gases	0	1155.874	26.3	9.45
6	562CP 10 Compressor should stop at 2.5 Kg/Cm2 Pressure Reached	66990		4.7	Nil
7	When OLBC is stopped , and Belt TPH is below 20 and Stacker Belt Current is below 52 A , then Stacker circuit should Stop to optimize Reduced Idle Running hours of BC4 , BC4A, BC5 and Stacker	33000		2.3	NIL
8	Energy Saving by Improve Heat Rate of Turbine by Overhauling of Turbine	1025628	0	71.8	34

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Bulk loading in Container

Confederation of Indian Industry

In view of business need it was required to have "Development of Bulk loading System" which not only help reducing the packaging waste but also will have better customer reach.

We have initiated an innovative method to transport loose cement by a greener mode of transportation by shifting from diesel-based bulkers to electric-based rakes in association with Container Corporation of India Ltd.

With this, UCWL has become the first cement company in the North-West region to implement this inventive step towards achieving logistical efficiency and environmental conservation by saving around 20,000 KG CO_2 per rake movement.

UCWL UDAIPUR CEMENT WORKS LIMITED

GREEN CNG- BASED VEHICLES

Confederation of Indian Industry

Udaipur Cement Works introduces CNG-truck distribution

14 December 2021

Udaipur Cement Works Ltd (UCWL), subsidiary of JK Lakshmi Cement Ltd, has initiated the concept of "Green Mobility" for its product dispatch.

The Whole-time Director of the company, Naveen Kumar Sharma, flagged off the first set of compressed natural gas (CNG)-based trucks going to customers.

UCWL becomes the first cement company in the southern Rajasthan region to introduce CNG-based trucks for the dispatch of cement. The company has launched this initiative under its commitment to cleaner logistics with a larger integrated sustainable development policy framework. It is estimated that CNG fuel-based transportation results into 30 per cent less GHG emissions and 95 per cent fewer NO_x emissions compared to conventional diesel-based trucks.

The company further aims to increase CNG-based fleet of green trucks in the upcoming days.

Udaipur Cement Works Ltd launches its CNG-based truck programme

Published under Cement News

1st cement company in the Southern Rajasthan region to introduce CNG-based trucks for the dispatch of cement.

The company has launched this initiative under its commitment to cleaner logistics with a larger Integrated Sustainable Development Policy framework.

It is estimated that CNG fuel-based transportation results into 30% less GHG emissions and 95% fewer NOx emissions compared to conventional diesel-based trucks.

The company further aims to increase CNG-based fleet of green trucks in the upcoming days.

UCWL UDAIPUR CEMENT WORKS LIMITED

LOGISTICS BY RAIL TRANSPORT

Confederation of Indian Industry

Mr. Shrivats Singhania, CEO & Director, Udaipur Cement Works Ltd. flagged off the **goods train at the new broad gauge railway siding of the company at Udaipur**.

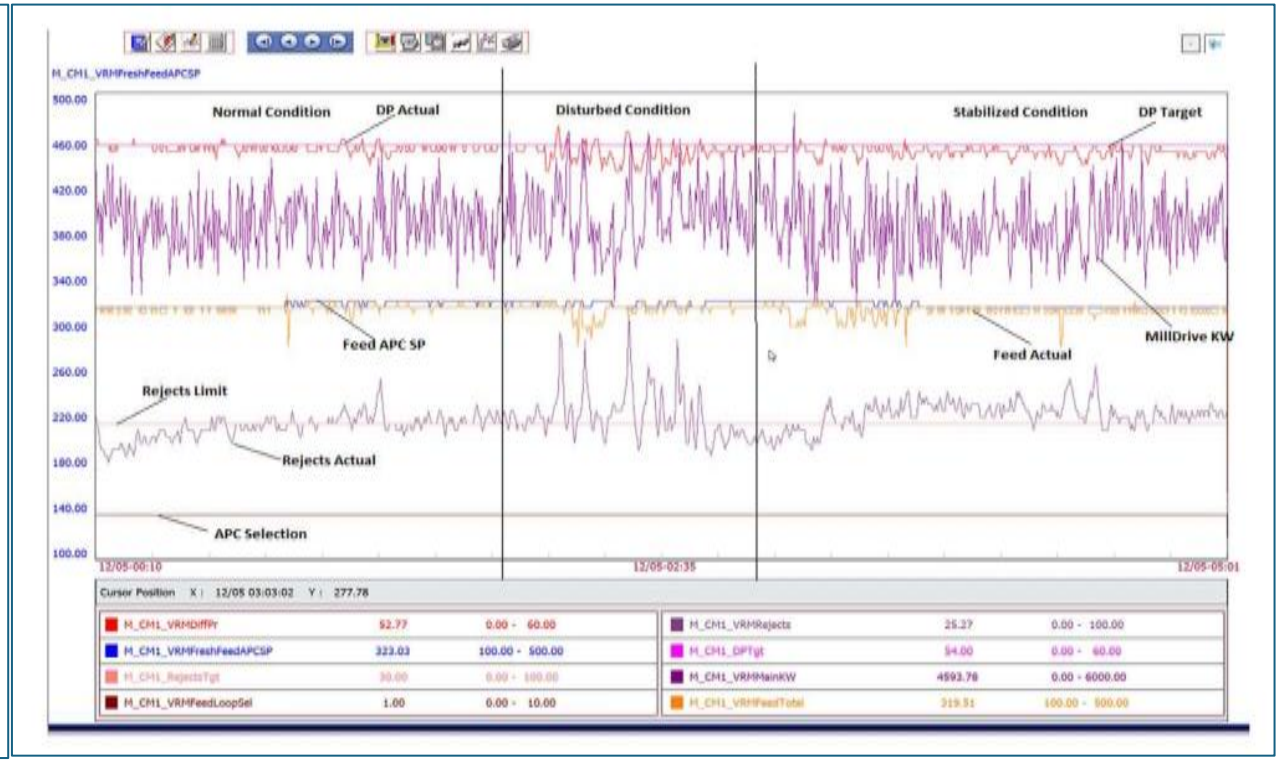
This trek is restarted after 2 decades, and it will help the company to transport its goods and reach its customers across its operating markets.

The flag-off ceremony was also graced by Mr Vijay Sharma ,GM NWR, Mr. Pranay Prabhaker, PCOM, NWR, Mr. Rajiv Dhankar ,DRM Ajmer, and Mr. Naveen Kumar Sharma (Whole Time Director, UCWL)

UCWL UDAIPUR CEMENT WORKS LIMITED

ML/AI Based process optimization system in VRM

Confederation of Indian Industry



Benefits

- **Reduction in specific power consumption of the mill by 0.3 kWh/MT**
- **Throughput enhancement of Mill by 3Tph**
- **Total monetary saving of 30 lacs/Annum**

UCWL UDAIPUR CEMENT WORKS LIMITED

VRM Hydraulic Pipeline Reroute For Power Saving

Confederation of Indian Industry

Before

After

Benefits

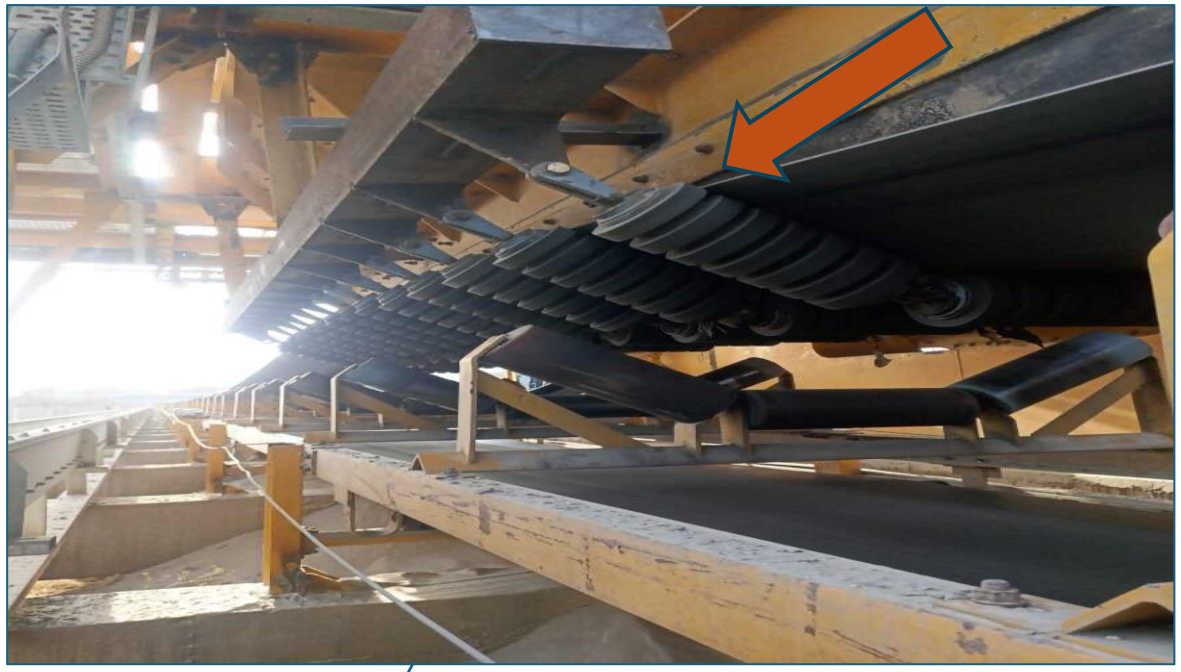
- **Previously approx. 700 ltrs of oil yearly was been refilled in hydraulic system due to minor leakages in pipelines . That cost would be saved with new layout. Approx cost saved yearly ₹ 1.2 lacs/annum**
- **Hydraulic pump power saving of 1.1 lacs Unit per annum (Approx saving of Rs. 9 lacs/annum)**

UCWL UDAIPUR CEMENT WORKS LIMITED

Installation Of Garland Roller Assembly In Place Of Carring Frame

Confederation of Indian Industry

Before



After

Benefits

- **Reduce friction losses in long belt conveyor OLBC, saved 15 KWh/hour & approx. saving ₹ 8.5 lacs annually.**

UCWL UDAIPUR CEMENT WORKS LIMITED

COAL MILL INLET CHUTE MODIFICATION

Confederation of Indian Industry

Before

After

Benefits :

Coal discharge on center of the table & reduction in rejected materials from chute with increase in grinding efficiency saved approx. 1.3 KWh/MT coal grind, Rs. 16.5 lacs/ annum

UCWL UDAIPUR CEMENT WORKS LIMITED

Pressure Transmitter in Kiln & PC Coal Firing Line.

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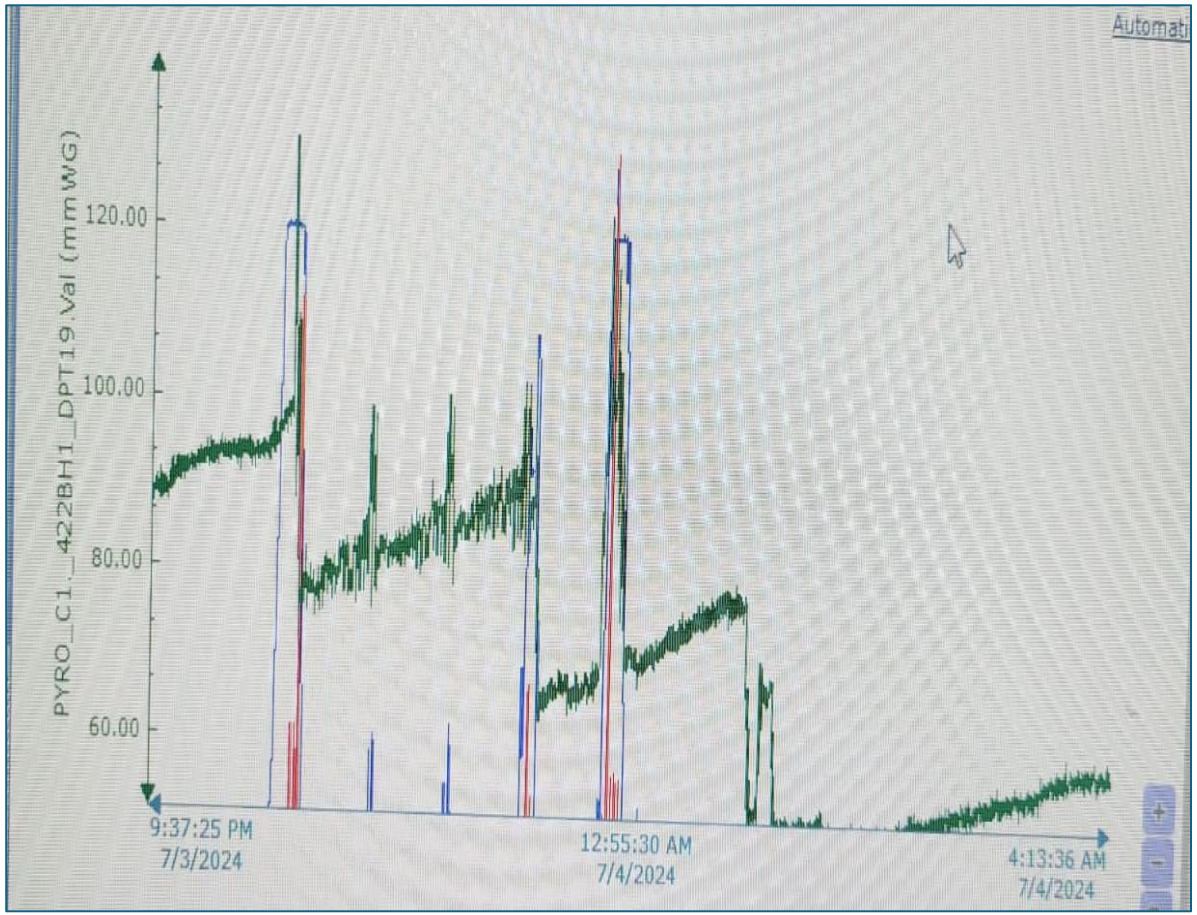
Benefits :

Reduction of blower RPM as per coal TPH, PID tunned as per fired coal TPH Vs blower RPM, Saving of approx. 75K Units / annum

UCWL UDAIPUR CEMENT WORKS LIMITED

Pressure Transmitter in RA Fan Duct

Confederation of Indian Industry



Benefits :

Reduction of RA Fan RPM as per DP, PID tunned BH DP Vs RA fan RPM, Saving of approx. 30K Units / annum

UCWL UDAIPUR CEMENT WORKS LIMITED

Progressive Journey (Green Energy)

Confederation of Indian Industry

Total Renewable Energy : 40 TO 52 %
Renewable Energy From WHR : 30 TO 40 %
Renewable Energy From Solar : 10 TO 15 %

Total Solar Power Installed : 15.5 MW
Total WHR Power Installed : 15.8 MW
Solar Power Under Installation : 2.75 MW

Jan,17
01
5.8 MW WHRS-1

Feb,20
02
10.16 MW Solar-1

Dec,21
03
4.35 MW Solar-2

Feb,23
04
1 MW Floating Solar

Nov,23
05
10 MW WHRS-2

Oct,24
06
2.75 MW Floating Solar

UCWL UDAIPUR CEMENT WORKS LIMITED

Green Energy

Confederation of Indian Industry

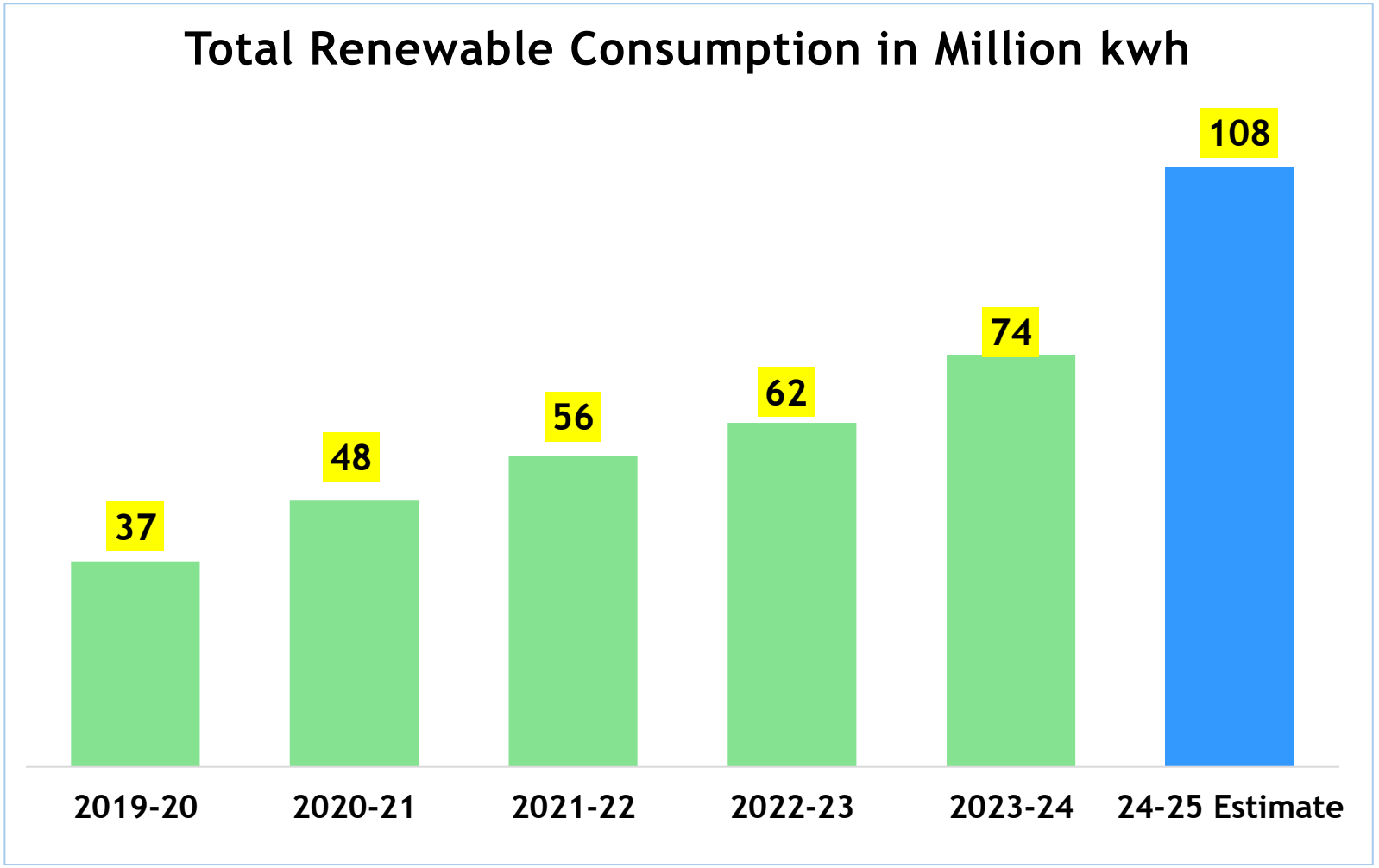
31.3 MW Renewable Energy

(Total Installed capacity)

~285 Million Kwh of Green energy consumed since 2019-20.

~205 Million Kgs GHG Emissions Mitigated

Equivalent to avg. 4.8 Million trees sequestering CO2 in a year



UCWL UDAIPUR CEMENT WORKS LIMITED

On-site Solar Generation

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Year	Technology	Installed capacity (in MW)		Generation (in Million kWh)	Consumption (in Million kWh)	Share %
		No. of Solar Plant	Total Capacity			
2021-22	SOLAR	2	14.45	17.12	17.12	14.25
2022-23	SOLAR	3	15.45	20.98	20.98	15.96
2023-24	SOLAR	3	15.45	20.94	20.94	12.05

RPO :

Reference : *RRECL RPO Order 528 ,*

Table-3: Final RPO targets approved for the state Discoms

S.NO.	FY	Obligation expressed as percentage of energy consumption (%) excluding consumption met from hydro source of power.			
		Non- solar		Solar	Total
		Wind	Biomass		
1	2018-19 (revised)	8.00%	0.60%	4.75%	13.35%
2	2019-20	8.30%	0.70%	6.00%	15.00%
3	2020-21	8.60%	0.80%	7.25%	16.65%
4	2021-22	8.90%	0.90%	8.50%	18.30%
5	2022-23	9.10%	1.00%	9.50%	19.60%
6	2023-24	9.40%	1.10%	10.50%	21.00%

UCWL UDAIPUR CEMENT WORKS LIMITED

Memberships of various agencies for sustainable development

Confederation of Indian Industry

"JKLC – To be Net zero by 2047"

JKLC -To meet RE100 by 2040

JKLC - Doubling energy productivity by 2040

gcca India Global Cement and Concrete Association

JK LAKSHMI CEMENT Ltd.

UCWL UDAIPUR CEMENT WORKS LIMITED

SCIENCE BASED TARGETS

CLIMATE GROUP EP100

RE100 | CLIMATE GROUP | CDP

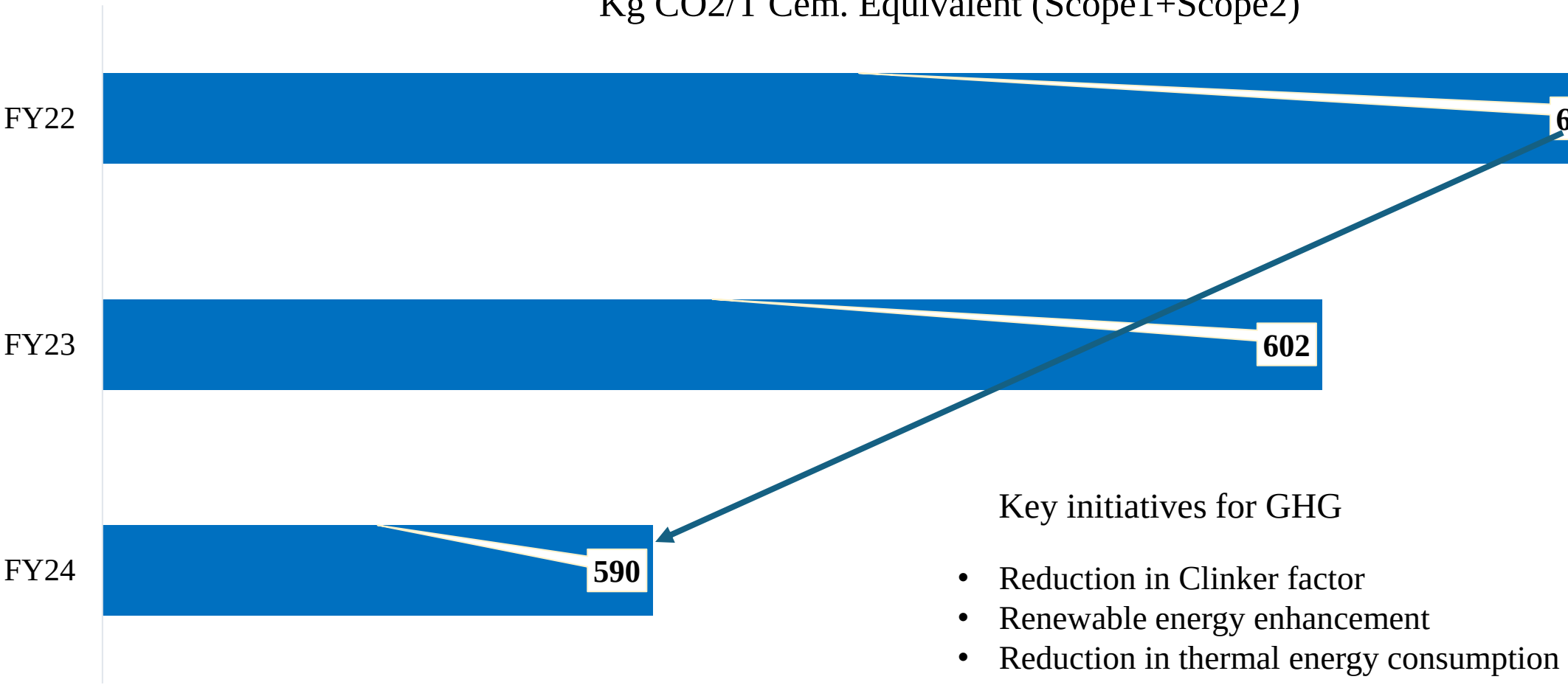
UN GLOBAL COMPACT

United Nations Global Compact

UCWL UDAIPUR CEMENT WORKS LIMITED

Confederation of Indian Industry

GHG emission at UCWL - last three years



Key initiatives for GHG

- Reduction in Clinker factor
- Renewable energy enhancement
- Reduction in thermal energy consumption

UCWL UDAIPUR CEMENT WORKS LIMITED

Floating Solar Energy- Key highlights

Confederation of Indian Industry

Scope		Advantages
	Environmental savings in terms of water evaporation (Approx)	8000 m3/Yr
	Environmental savings in terms of carbon savings (Approx)	1000 Ton/Yr
	Land area savings (Approx)	7200 Sq.mtr
	Equivalent Trees savings (Approx)	1.5 Lakhs/Yr
	Financial savings (Approx)	Rs 25 Cr (25 Yrs)

UCWL UDAIPUR CEMENT WORKS LIMITED

Solar- Ground Mount & Floating

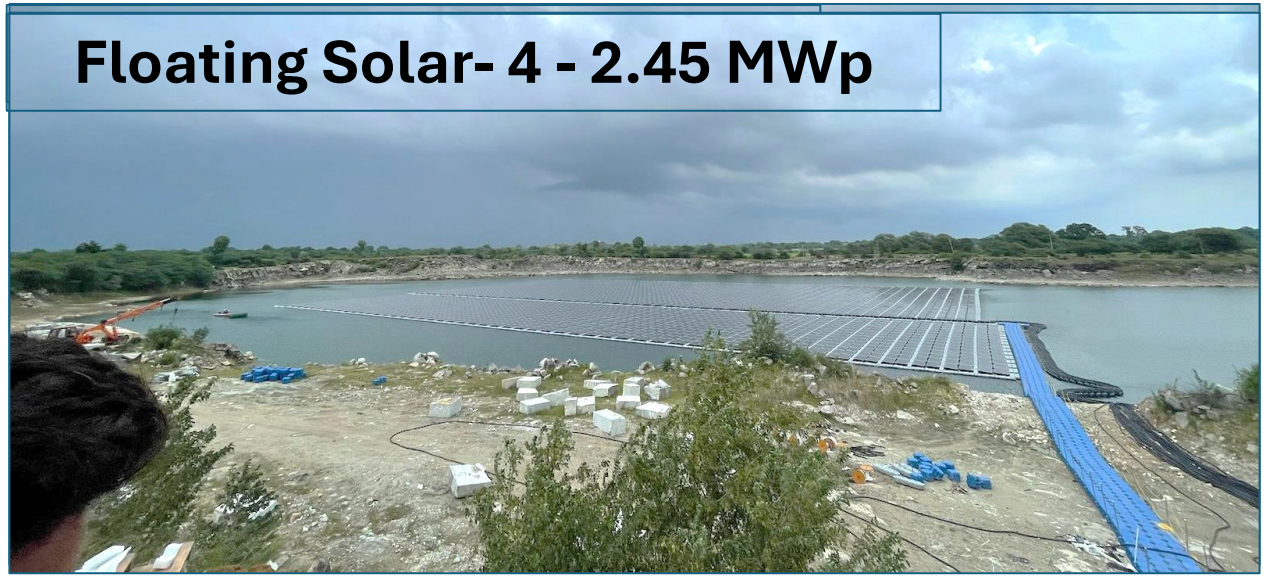
Confederation of Indian Industry

Solar-2 – 4.35 MWp

Solar-1 - 10.16 MWp

Floating Solar-3 – 1 MWp

Floating Solar- 4 - 2.45 MWp



UCWL UDAIPUR CEMENT WORKS LIMITED

Awards & Achievements:

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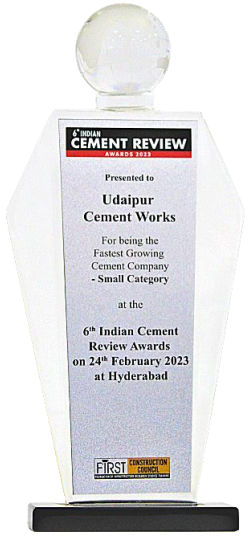
- "Udaipur Cement Works Limited received Special Jury Trophy-2022 for Outstanding Skill Development Contribution in Large Scale Industries"

- "On 17th Employer Branding Awards, Udaipur Cement Works Limited received Rajasthan **Best Employer Brand Award 2022**"

- UCWL received Platinum Award"**13th Exceed Heath Safety & Security Award**" for Best practices in Industrial Security.

- "Udaipur Cement Works Ltd.'s WTD, Sh. Naveen Kumar Sharma received Prestigious **OHSSAI Lifetime Award 2022** for remarkable Contributions to Health, Safety, and Environmental Protection"

- "Udaipur Cement Works Limited received this award for **Fastest Growing Cement Company in Small Category** at Indian Cement Review Awards 2023"



UCWL UDAIPUR CEMENT WORKS LIMITED

Awards & Achievements:

Confederation of Indian Industry

- **UCWL DAROLI MINES was awarded 3 prizes during the 46th Mines Safety Week 2022.**

  1. 2nd Prize in Maintenance of Mine Plans, Sections & Statutory Records of Mechanized Opencast Mines.
  2. 2nd Prize in Safety Management plan, occupation Health & Safety, First Aid and Vocational Training of Mechanized Opencast Mines.
  3. 2nd Prize in General Opencast Working & Layout of opencast Mines

- **14th EXCEED HR AWARDS 2023**
- **FAME National Award**
- **CII 24th NATIONAL AWARDS – UCWL awarded as "Energy Efficiency Unit" & "Young & Emerging Leader in Energy Efficiency (Runner up)".**

UCWL UDAIPUR CEMENT WORKS LIMITED

Awards & Achievements:

Confederation of Indian Industry

- 21ST GREENTECH SAFETY AWARD 2023- PLANT
- 21ST GREENTECH SAFETY AWARD 2023 - LINE- 2 PROJECT
- STATE SAFETY AWARD 2023
- PROGRESSIVE PLACES TO WORK 2023 by ET Now
- “Certificate of Excellence” as Best Employer 2023 by Employers Association of Rajasthan

UCWL UDAIPUR CEMENT WORKS LIMITED

Energy Training Program Glimpse :

Confederation of Indian Industry

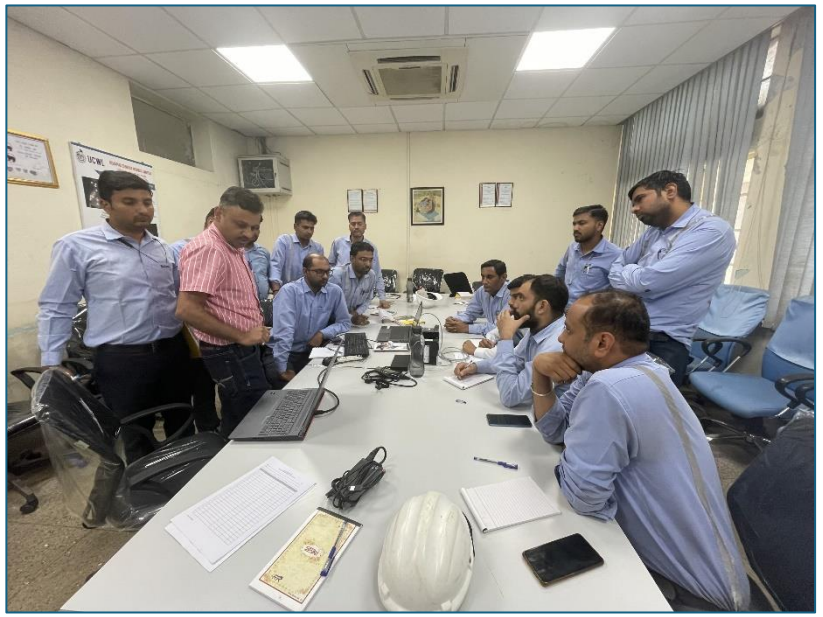
UCWL UDAIPUR CEMENT WORKS LIMITED

Energy Training Program Glimpse :

Confederation of Indian Industry





UCWL UDAIPUR CEMENT WORKS LIMITED

Energy & Efficiency Training Program Glimpse :

Confederation of Indian Industry

UCWL UDAIPUR CEMENT WORKS LIMITED

Confederation of Indian Industry

Thank You

Do You have any question?

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