UCWL UDAIPUR CEMENT WORKS LIMITED

Bureau of Energy Efficiency
Ministry of Power, Government of India

Knowledge Exchange Platform
Transmitting Knowledge through Best Practices

"JOURNEY TOWARDS NET ZERO EMISSION"

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UCWL Infographic

UCWL is a subsidiary of JK Lakshmi Cement Ltd.

Located in Dabok near Udaipur, Rajasthan

Installed Production Capacity of 2.2 mMTPA

Brand Name: Platinum Heavy Duty Cement

ISO 9001:2015,ISO 14001:2015,ISO 45001:2018 ,ISO 50001: 2018, ISO 14046: 2018

IMS

EnMS

UCWL Milestones (Capacity Upgradation)

1968 — Owned by Bajaj Group

1970 — Clinker 3.3 LTPA, Cement 6.0 LTPA

1984 — Clinker 3.3 LTPA, Cement 6.0 LTPA

1993 — JK UUL

2006 — UCWL

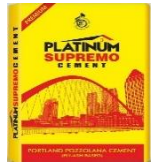
2013 — Cement 7.0 LTPA

2016 — Cement 16.0 LTPA

2017 — Clinker 12.37 LTPA, Cement 16.0 LTPA

2019 — ISO Certification

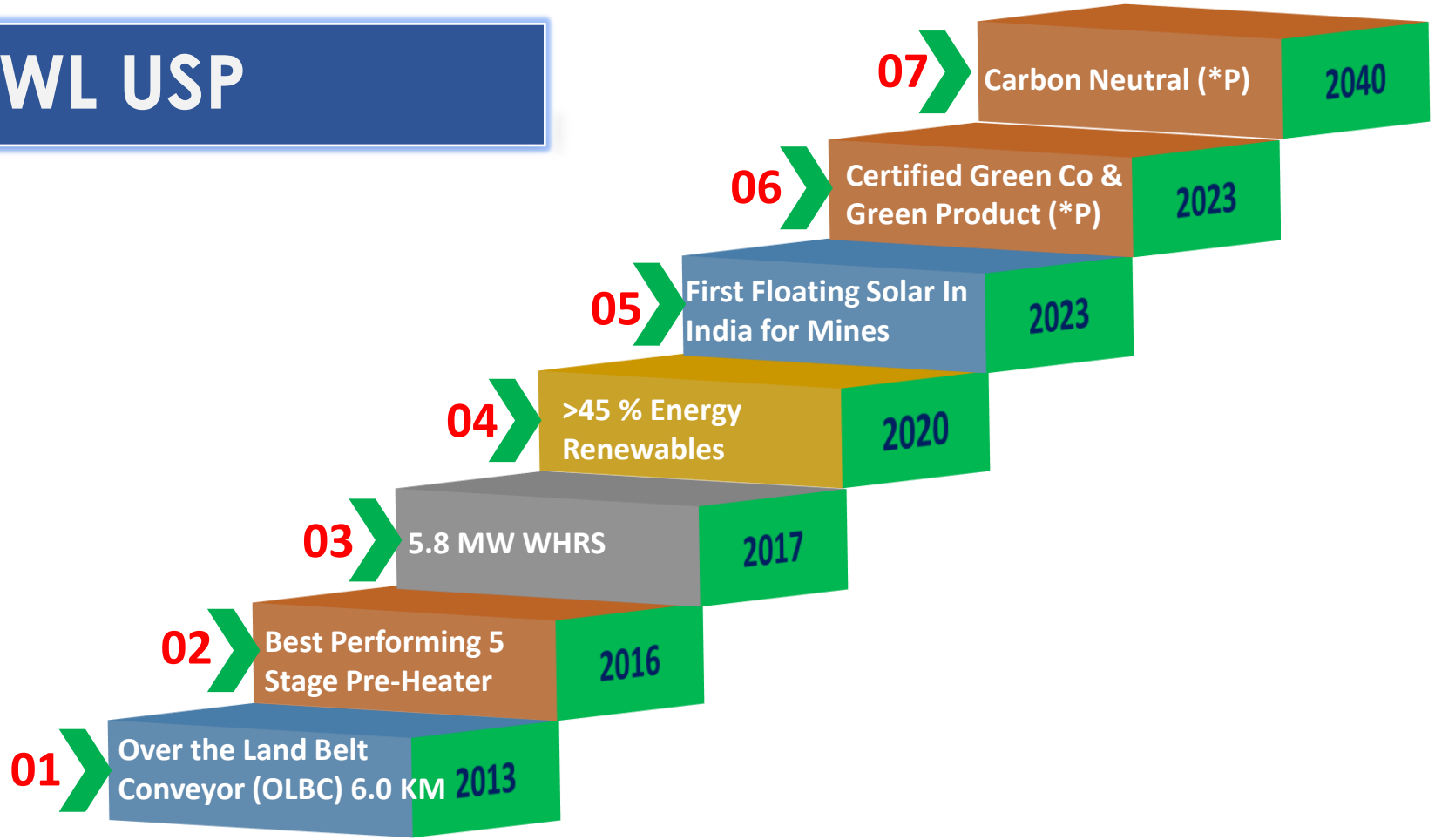
2021 — Clinker 15.0 LTPA, Cement 22.0 LTPA

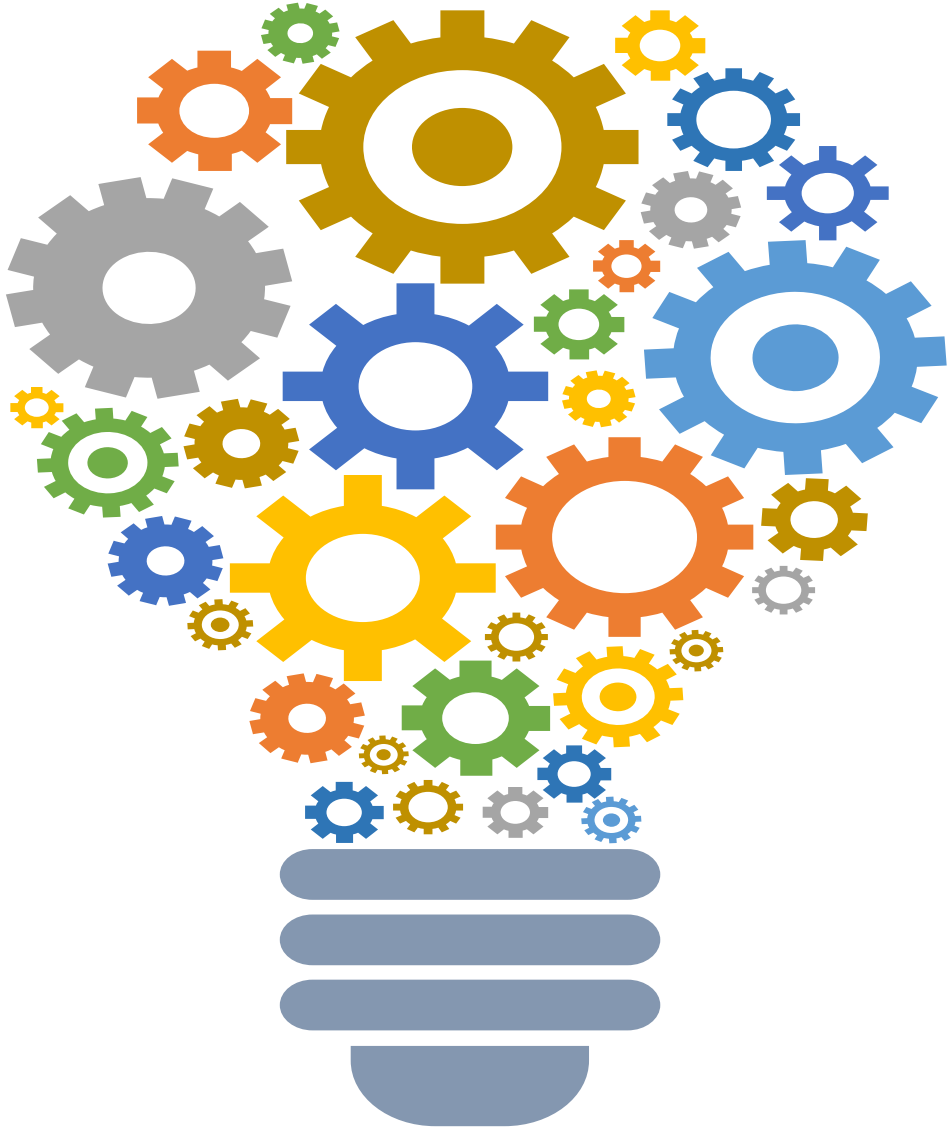


2023 — Clinker 30.0 LTPA, Cement 47.0 LTPA

2040 — Carbon Neutral

UCWL USP


07
Carbon Neutral (*P)
2040
06
Certified Green Co & Green Product (*P)
2023
05
First Floating Solar In India for Mines
2023
04
>45 % Energy Renewables
2020
03
5.8 MW WHRS
2017
02
Best Performing 5 Stage Pre-Heater
2016
01
Over the Land Belt Conveyor (OLBC) 6.0 KM
2013



Energy Efficiency Highlights

WE INNOVATE. WE ENERGIZE.

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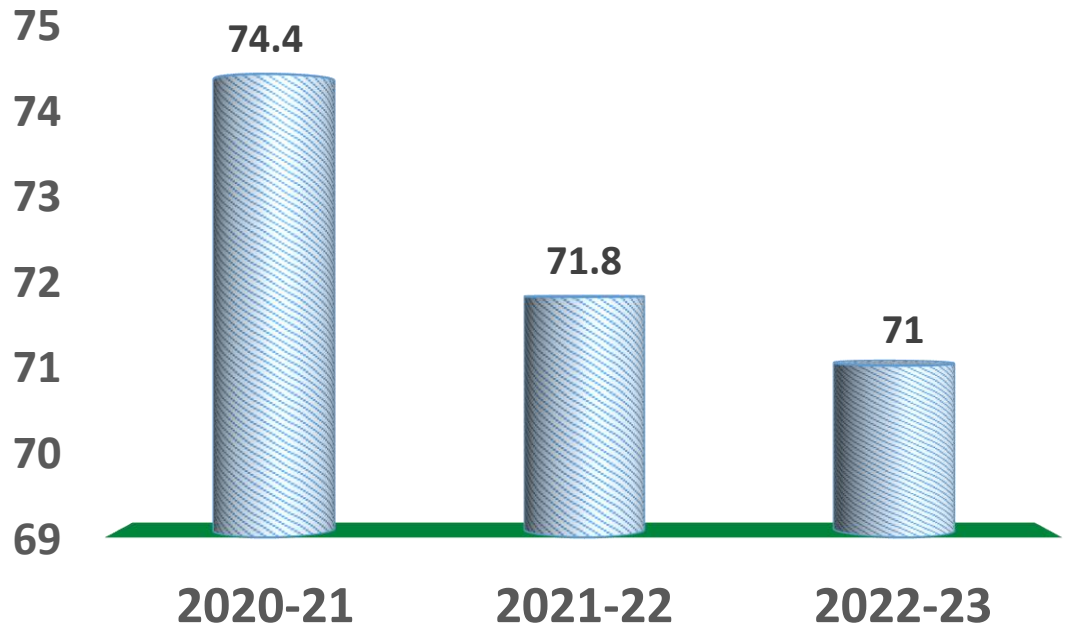
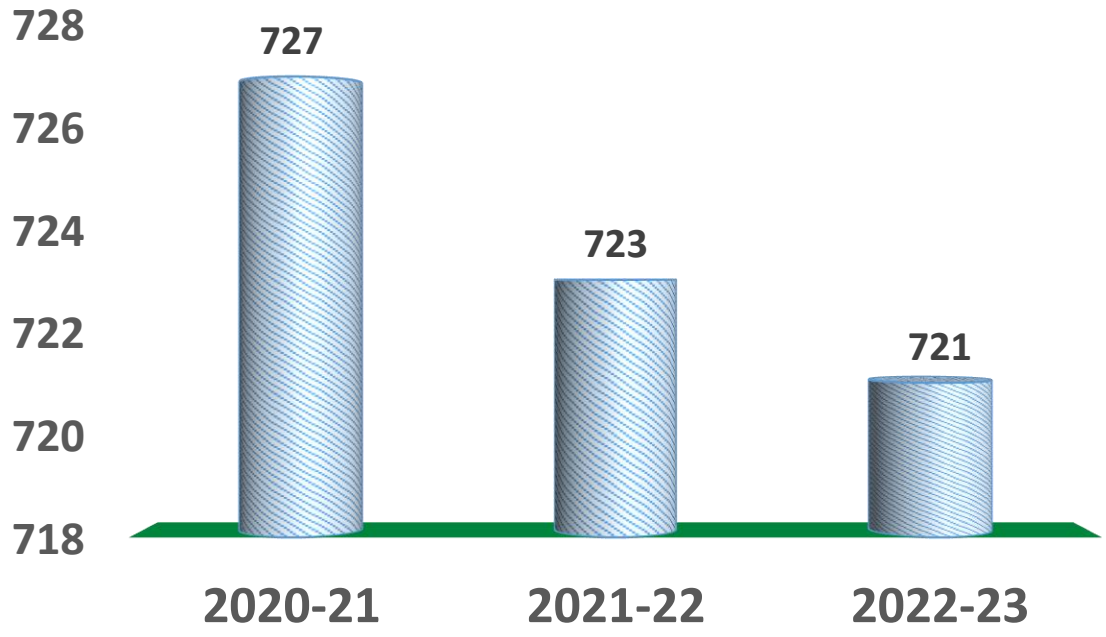
UCWL Energy Intensity (YoY)

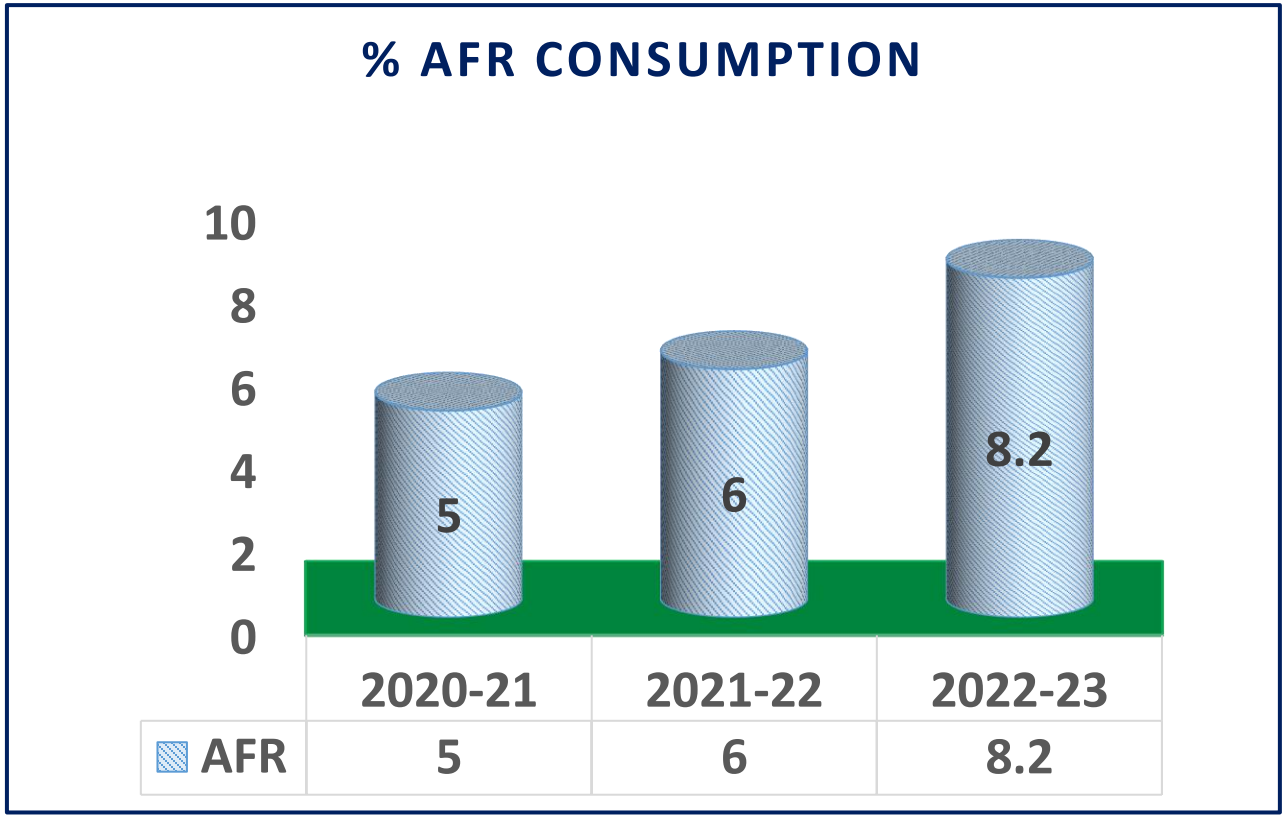
Electrical SEC (kWh/Ton)



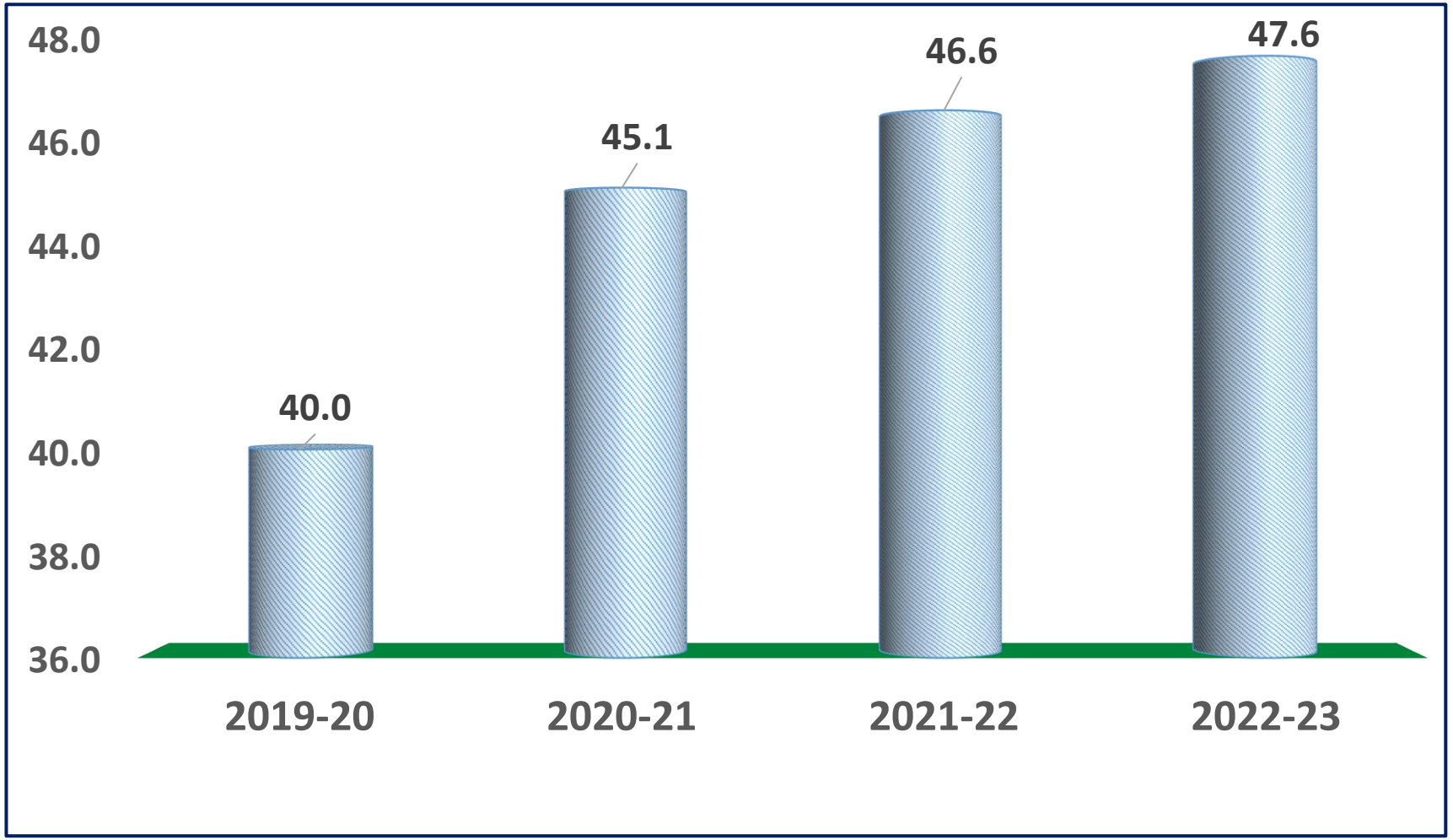
Thermal SEC (kCal/Kg of clinker)



Alternative Fuel & Raw Material (AFR) Consumption (YoY)



UCWL Renewal Energy Utilization % (YoY)



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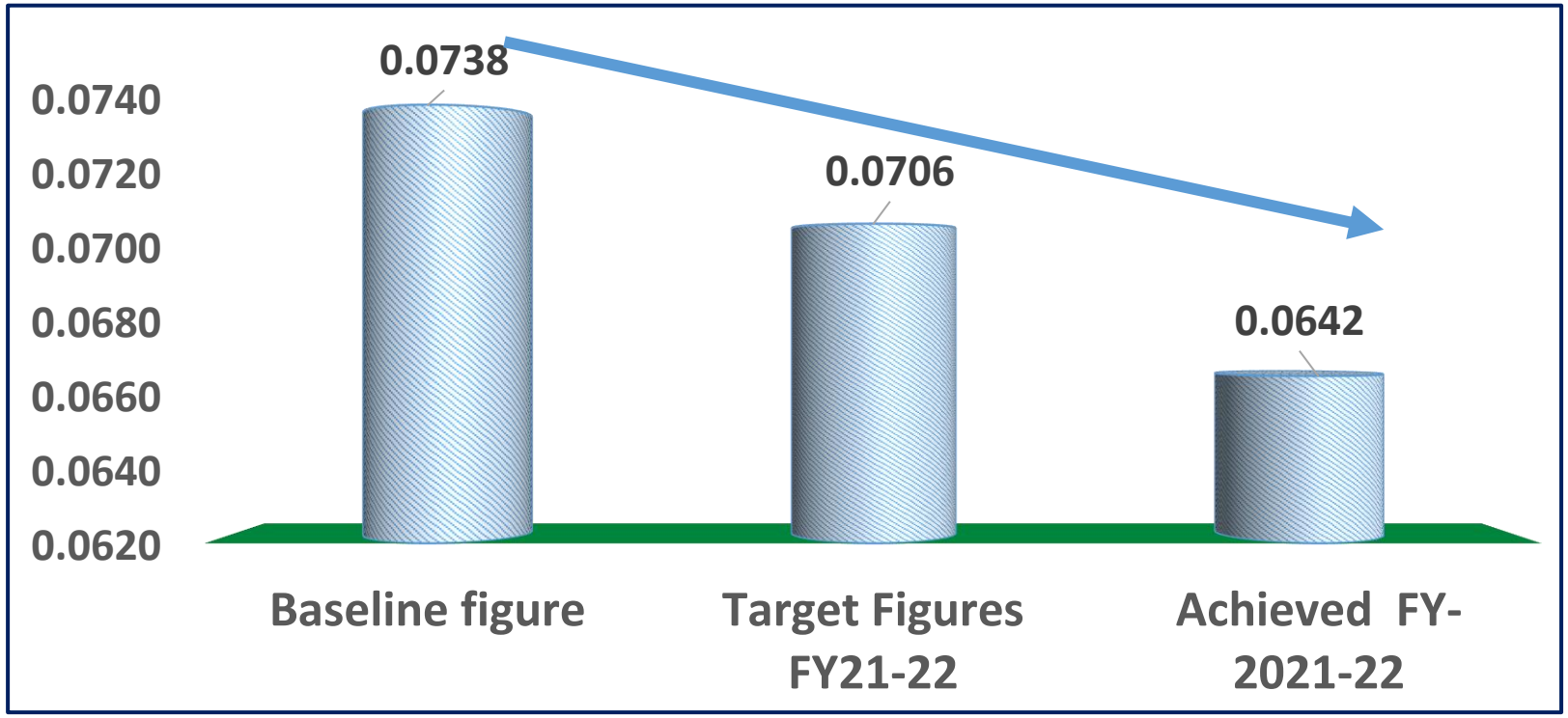
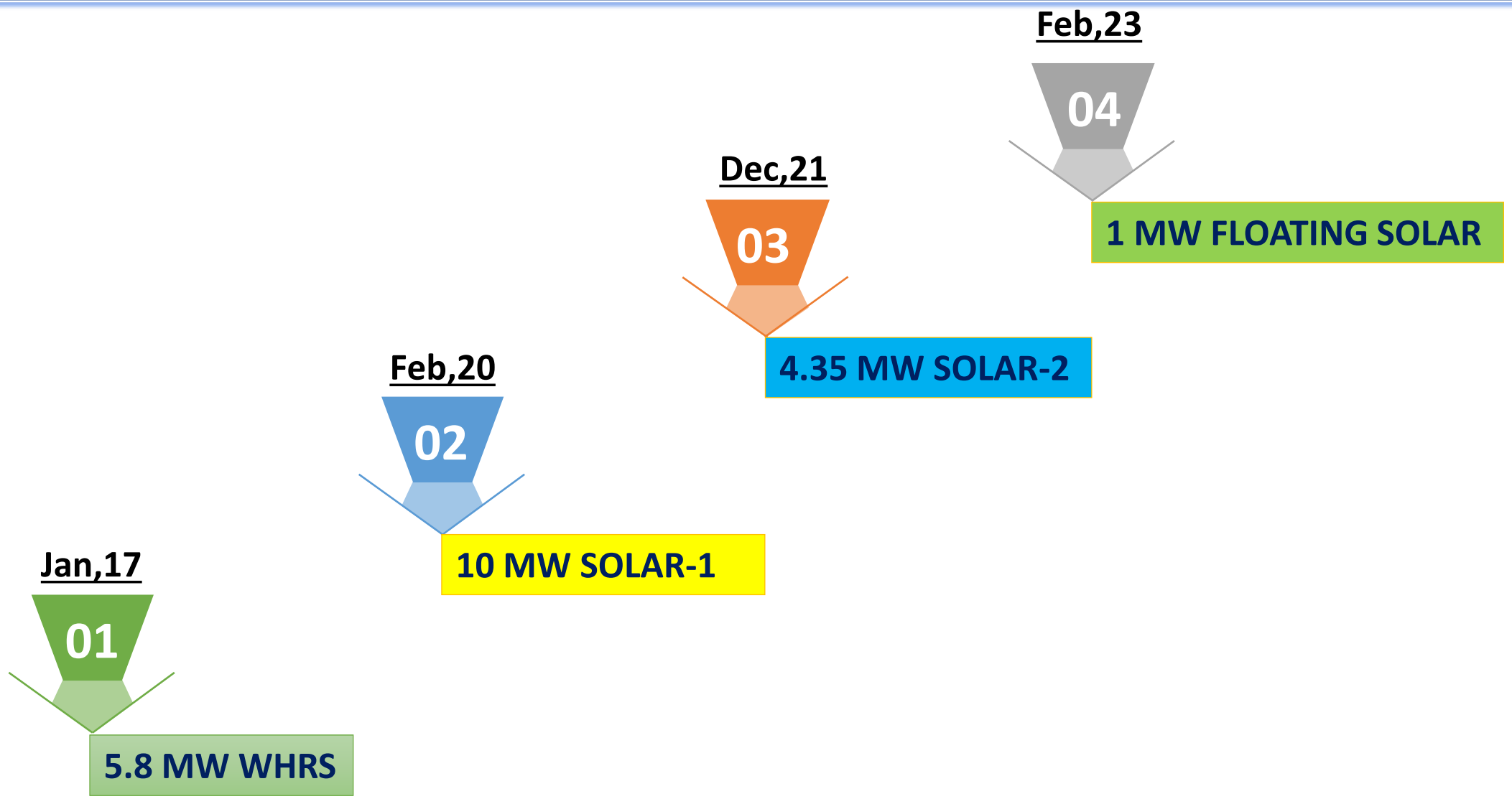
UCWL PAT Target:



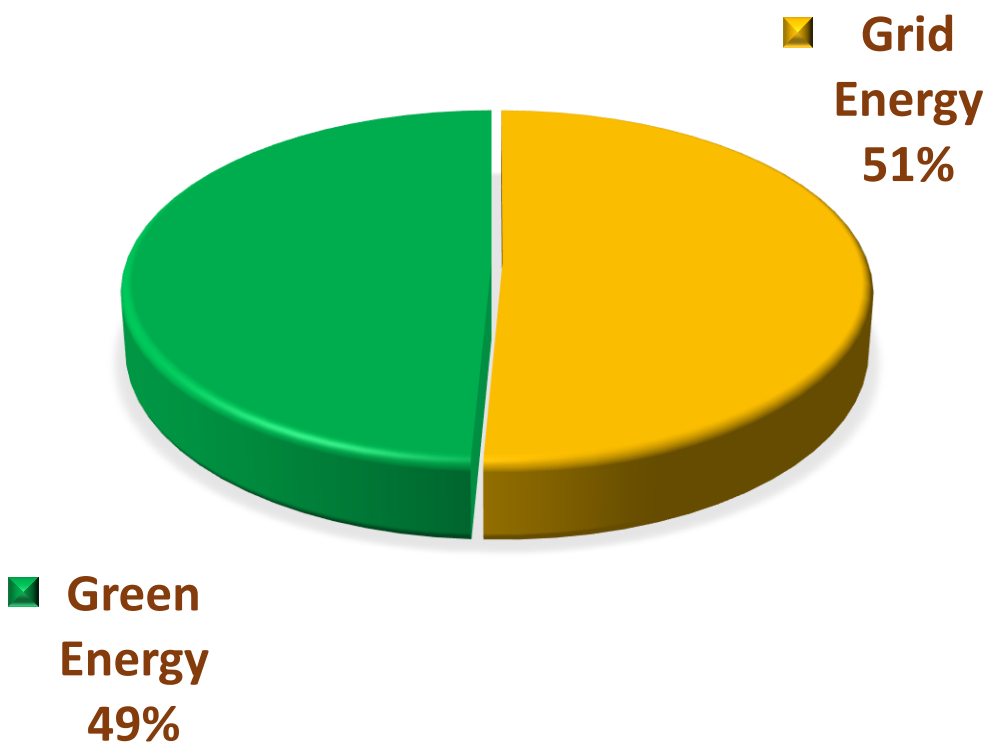
Udaipur Cement Works Limited is registered (Registration No.CMT0135RJ) under the PAT Cycle-V (FY 2019-FY 2022) as per the Notification of The Gazzte of India dated 29.03.2019.

Progressive Journey (Green Energy)

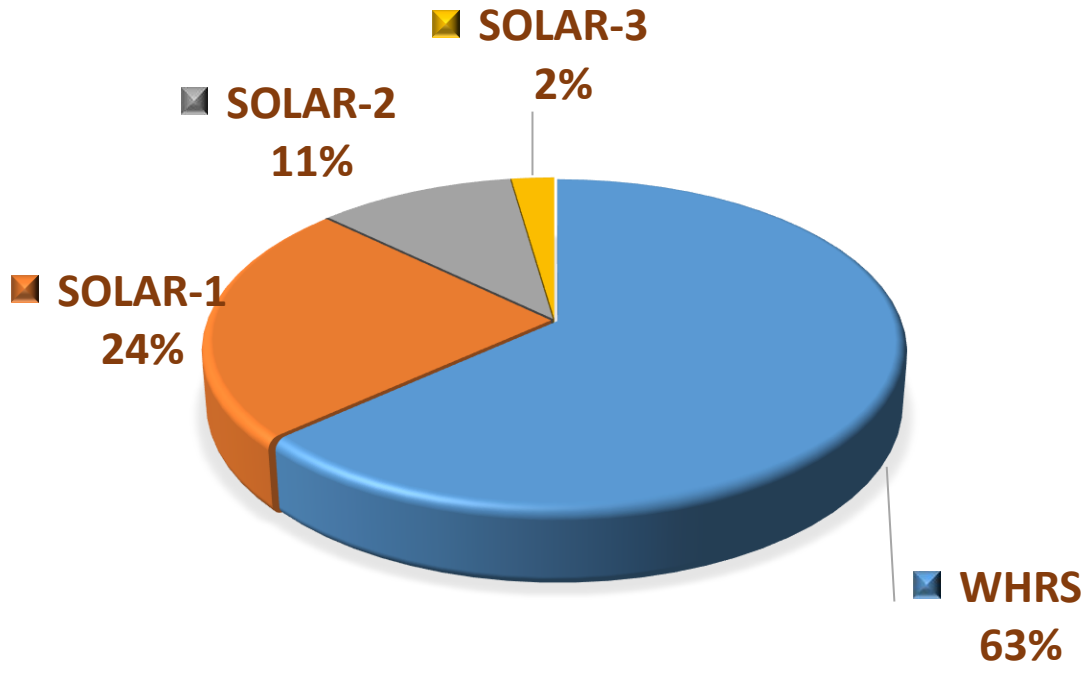


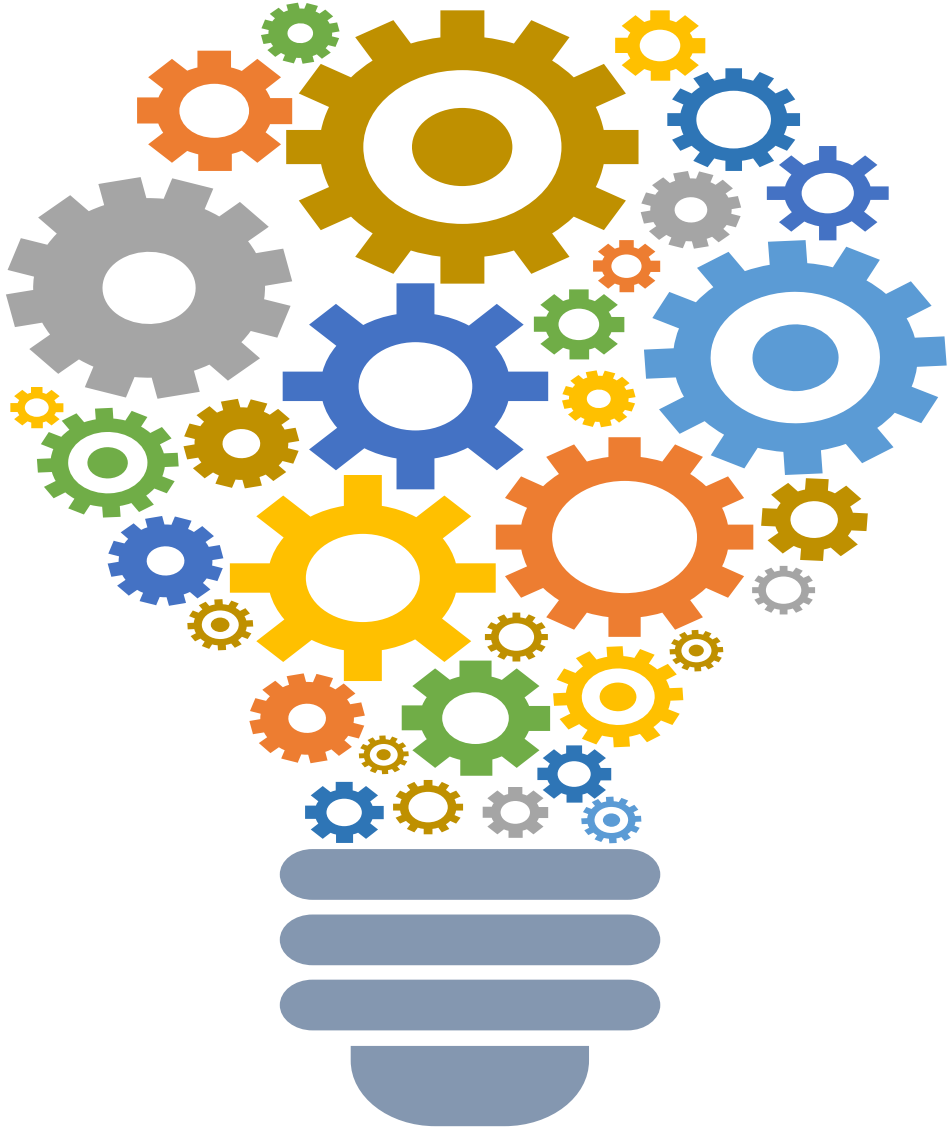
UCWL Energy Mix Chart

Grid Energy Vs Green Energy %



Green Energy % Enablers





New Developments (Kaizens)

WE INNOVATE. WE ENERGIZE.

Energy Efficiency
&
Reliability Centered Maintenance

Bulk Loading Infrastructure - Packing Plant

Purpose:

- For the purpose of developing bulk loading infrastructure.

Execution Status:

- UCWL has developed inhouse bulk loading infrastructure.

Key Advantage:-

- 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. 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.

PH Top Cyclone (1A&1B) modification

Purpose :

- ❑ To reduce return dust across the preheater.

Modification Implemented:

- ❑ Consideration of sloping down roof profile of cyclone to flat.

Key advantage :

- ❑ ***Higher Cyclone Efficiency ,***
- ❑ ***Lower return Dust***
- ❑ ***Pressure drop Across Cyclone***

Reject belt replaced with Air Slide – CM1 & CM2

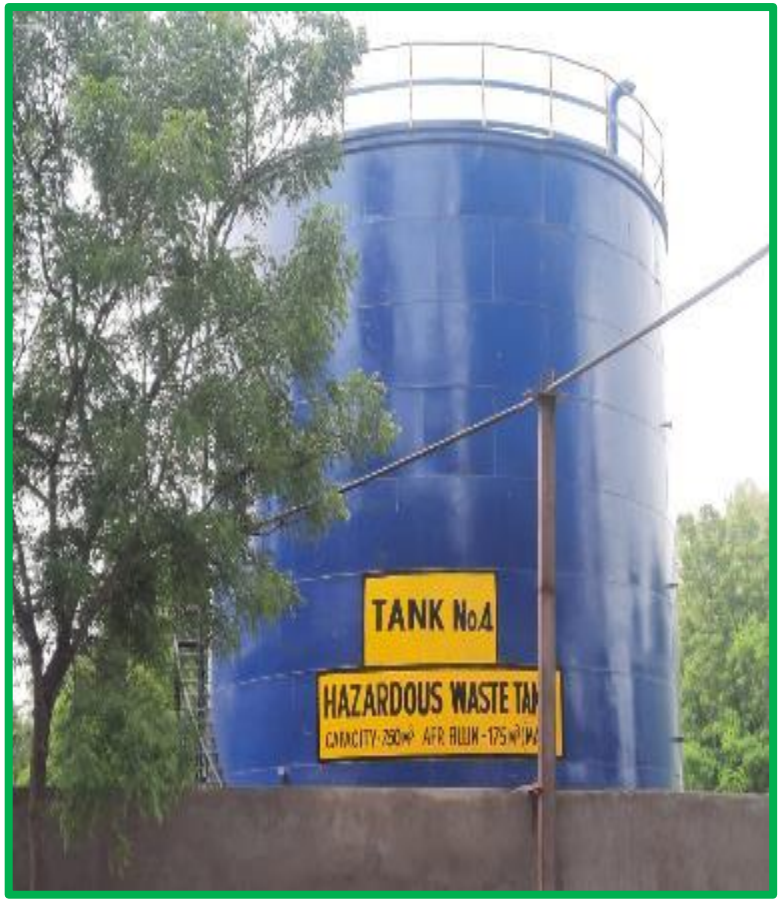
Purpose:

- To eliminate dust Emission and to reduce maintenance cost

Key advantage:

- Replacement helps in terms of ease of process, low dusting and easy monitoring of TPH. Along with the reduced cost of operations and maintenance.

AFR Storage Facility In-house Developed



Purpose:

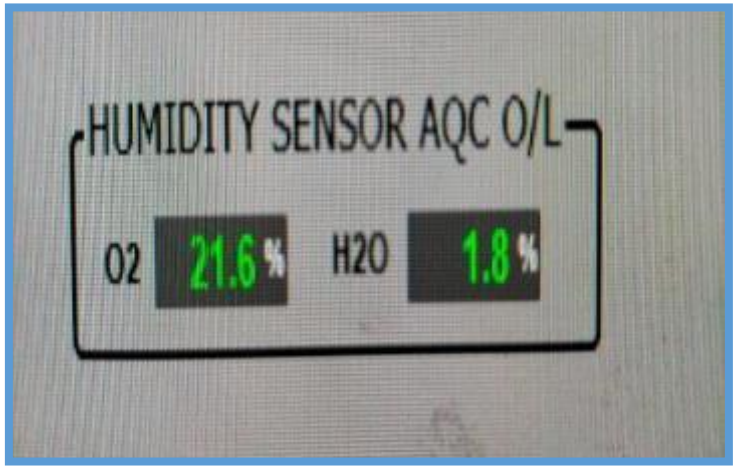
- ❑ Inconsistency in Quality of Liquid AFR.

Benefit:

- ❑ Increase efficiency as the fuel quality is consistent through out the tank.
- ❑ Improved Fuel Quality through Efficient Homogenization.
- ❑ Reduced Maintenance cost by preventing the sedimentation.
- ❑ Process Optimized as Unexpected CO generation during AFR firing is eliminated .
- ❑ Enhanced Safety Management .

AFR % Increased from 5 % to 8 %

New Instrument Introduced for Moisture Detection at AQC O/L



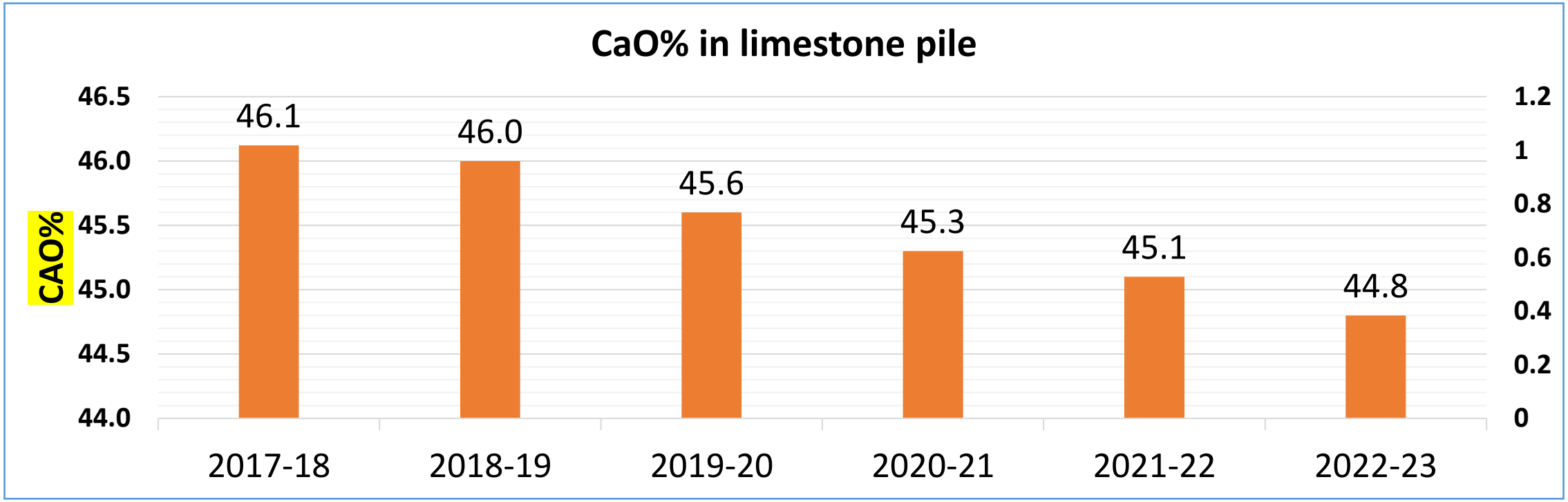
Purpose:

- ❑ On the basis of need identified to have Moisture detection at AQC O/L

Key advantage:

- ❑ A new instrument been introduced at AQC O/L for moisture detection purpose.

Sustainability & Stability of Limestone

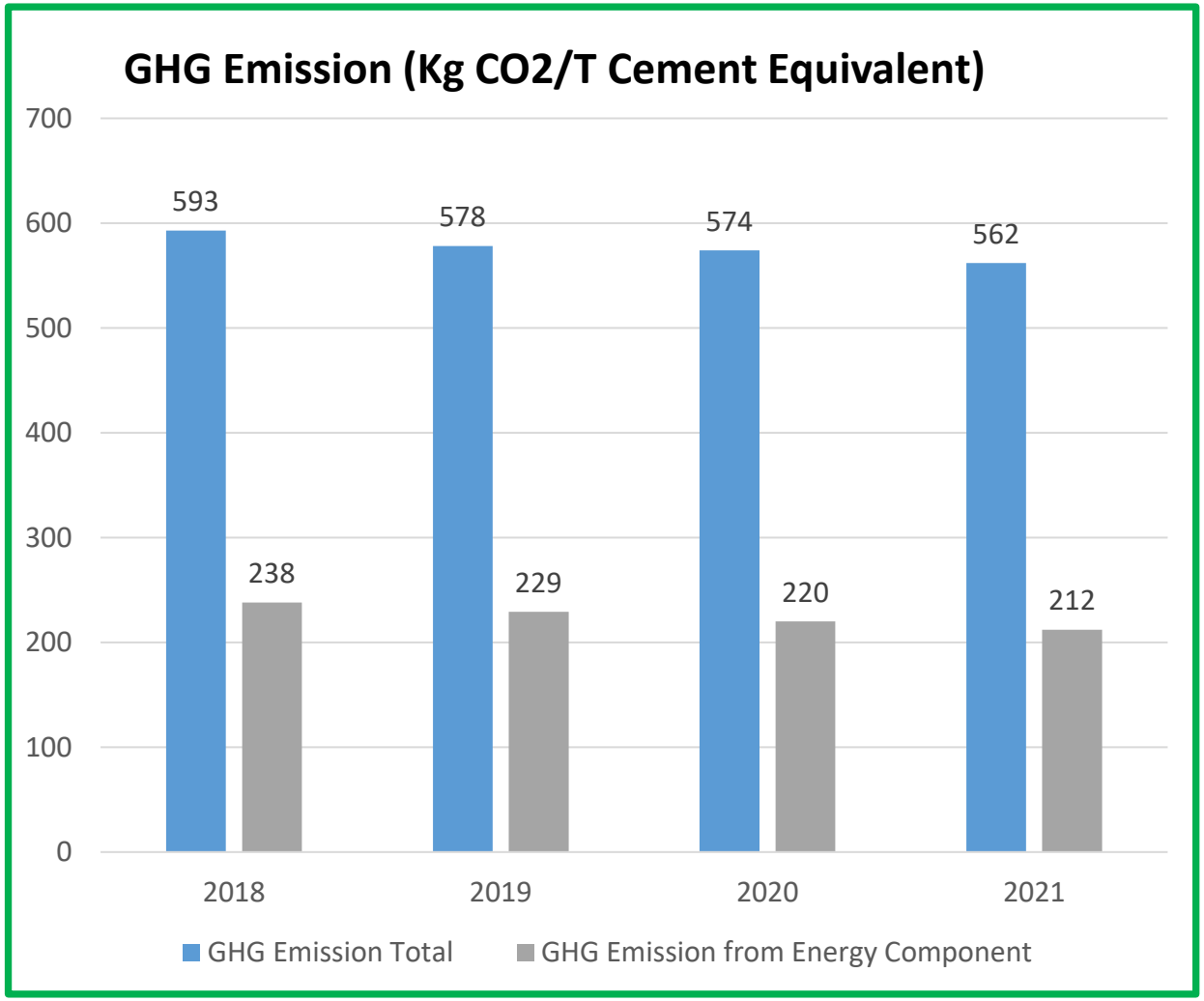


- Gradually improved mines life by reducing CaO% from 46.1 % to 44.8%
- This has been achieved by Improving raw mix design & strengthening of received additive quality

Emerging Technologies Adopted:

Latest Technology developments	Feedback
IOT – IOT Sensors for real-time condition monitoring of equipment's	Implemented, Getting alerts
RTBS - Real-time belt scanning system in OLBC	Implemented, Getting alerts
OPSD - Online Particle Size Distribution system for mills	Implemented Getting feedback of product quality
AICS - AI-based "Advanced Process Control Suite" for kiln & mills optimization	Implemented Getting feedback to produce desired production quality
AI-ML - Use of it enabled Maintenance & Equipment Feedback	Being explored
UHF - Tracking of Vehicles by UHF .	Implemented and Getting Reports to Track the position.

Mitigating Climate Change – Carbon Emission



Levers for CO2 emission reduction Kg CO2/T Cement Equivalent

Our group target is to become carbon neutral by 2040

Improving Blended Cement by 20 %
(CO2 reduction by 160 Kg)

Increasing RE share & Energy efficiency in total energy mix
(CO2 reduction by 30 Kg)

Increasing use of AFR-reducing coal (15%)
(CO2 reduction by 45 Kg)

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Thank You