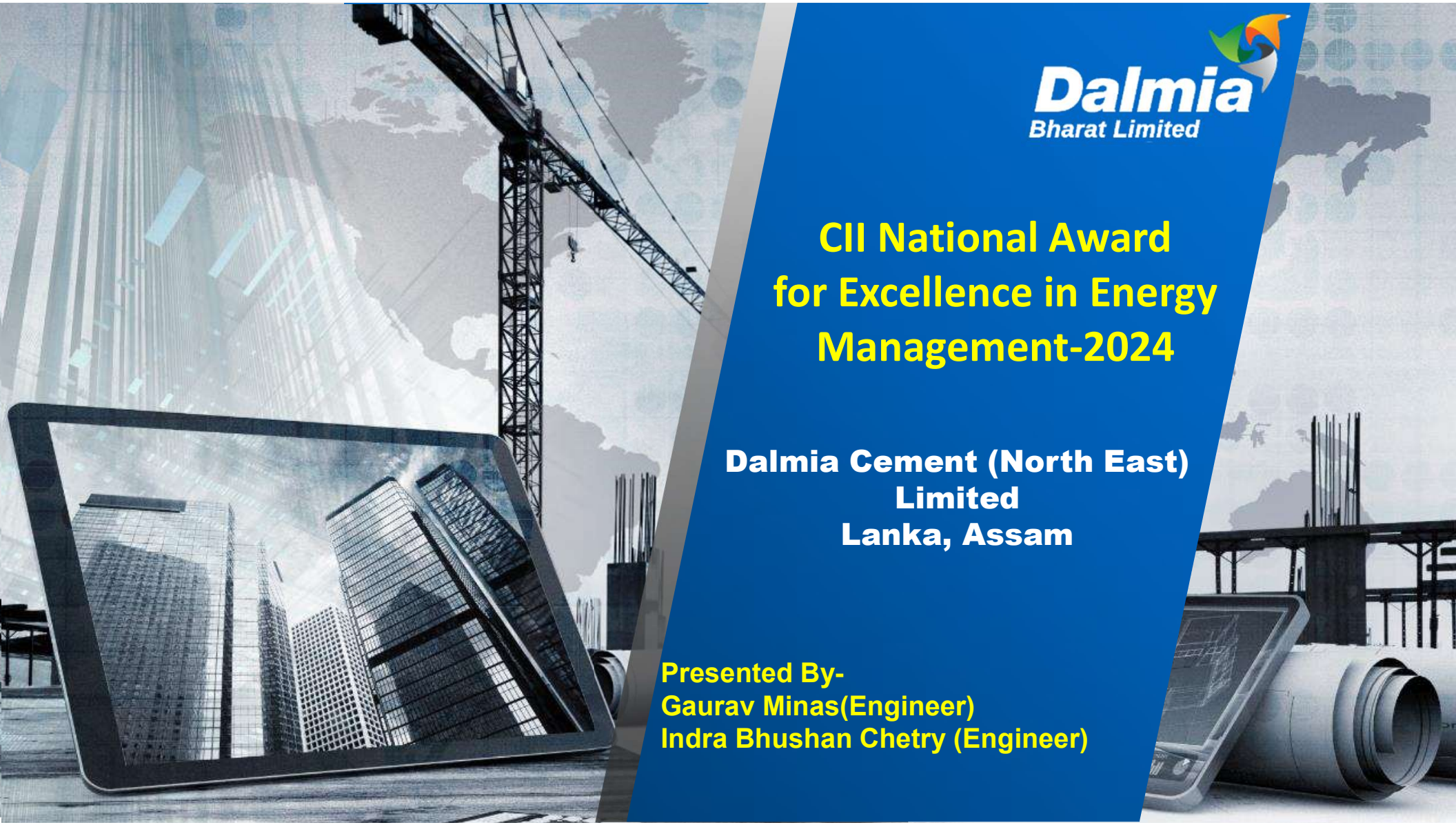


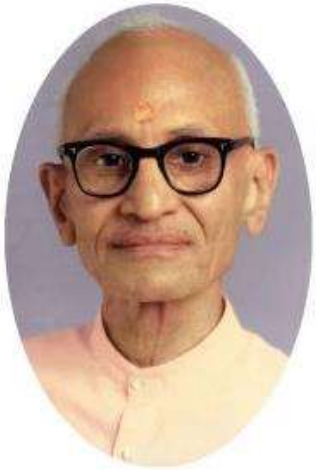
Dalmia
Bharat Limited

CII National Award for Excellence in Energy Management-2024

Dalmia Cement (North East) Limited
Lanka, Assam

Presented By-
Gaurav Minas(Engineer)
Indra Bhushan Chetry (Engineer)

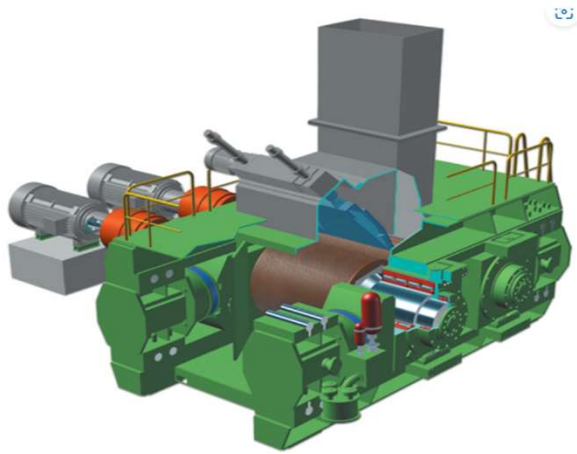
Dalmia Cement (North East) Limited



Plant Name	**: DC(NE)L, Lanka**
State	**: Assam**
District	**: Hojai, Assam**
District Head Quarter	**: Hojai, Assam**
Product manufactured	**: Cement Grinding**

- 2010 : Lanka Grinding Unit Commissioned.
- 2012 : Taken Over By Dalmia Cement Bharat Limited.
- 2014 : 2nd Ball Mill commissioned.
- 2023 :Roller Press integrated with Ball mill commissioned.

Dalmia
Bharat Group



KHD ROLLER PRESS
CAPACITY-290 TPH
KW-2 X 1600
DIMENSION-170/180

TKIL BALL MILL
CAPACITY-130 TPH
DIMENSION-4.4X14

DC(NE)L commitment to green Energy and low carbon footprint.

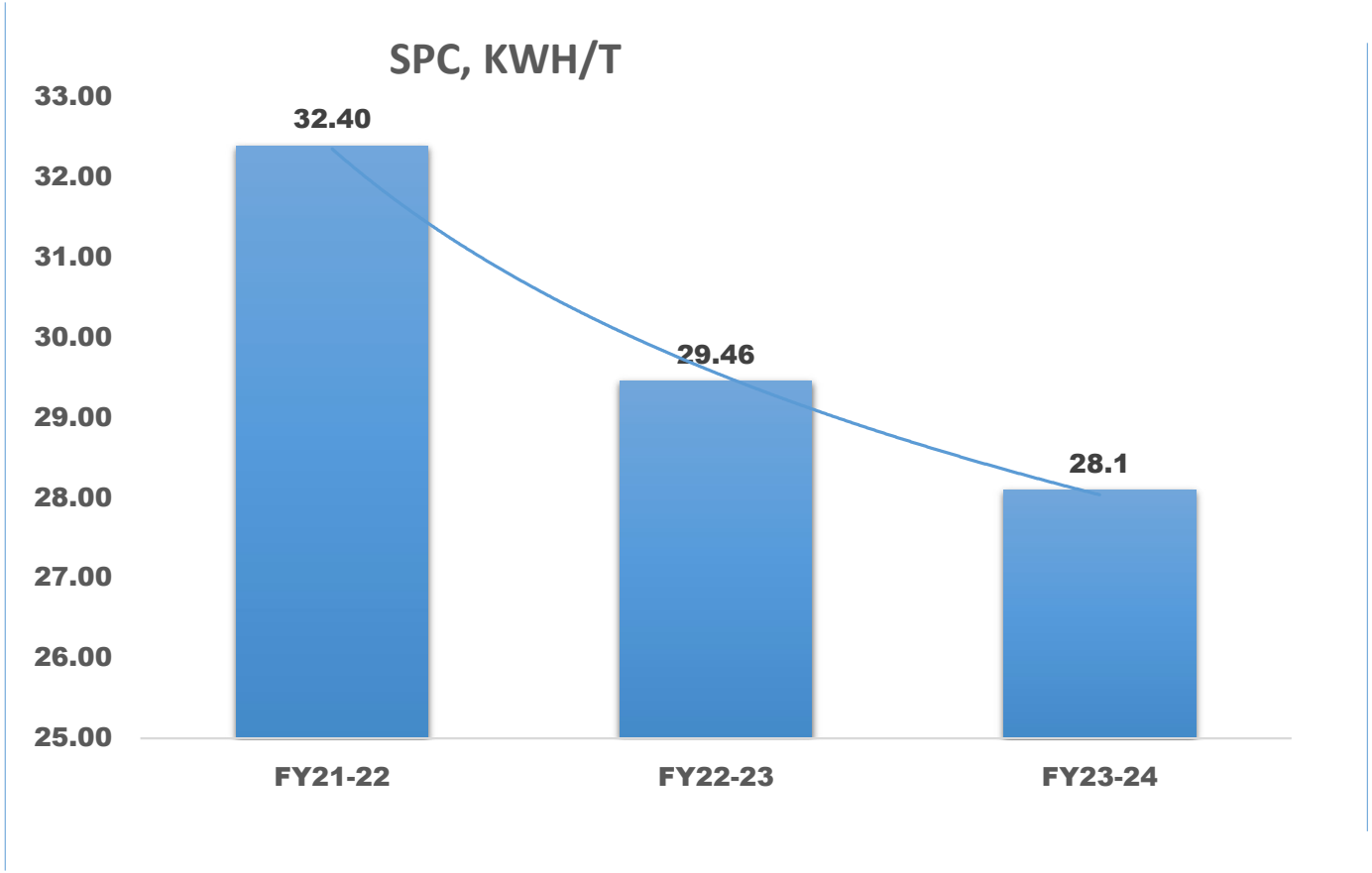
Installation of 29 MW Solar power plant.

8 no. of EV vehicle is in operation at DC(NE)L

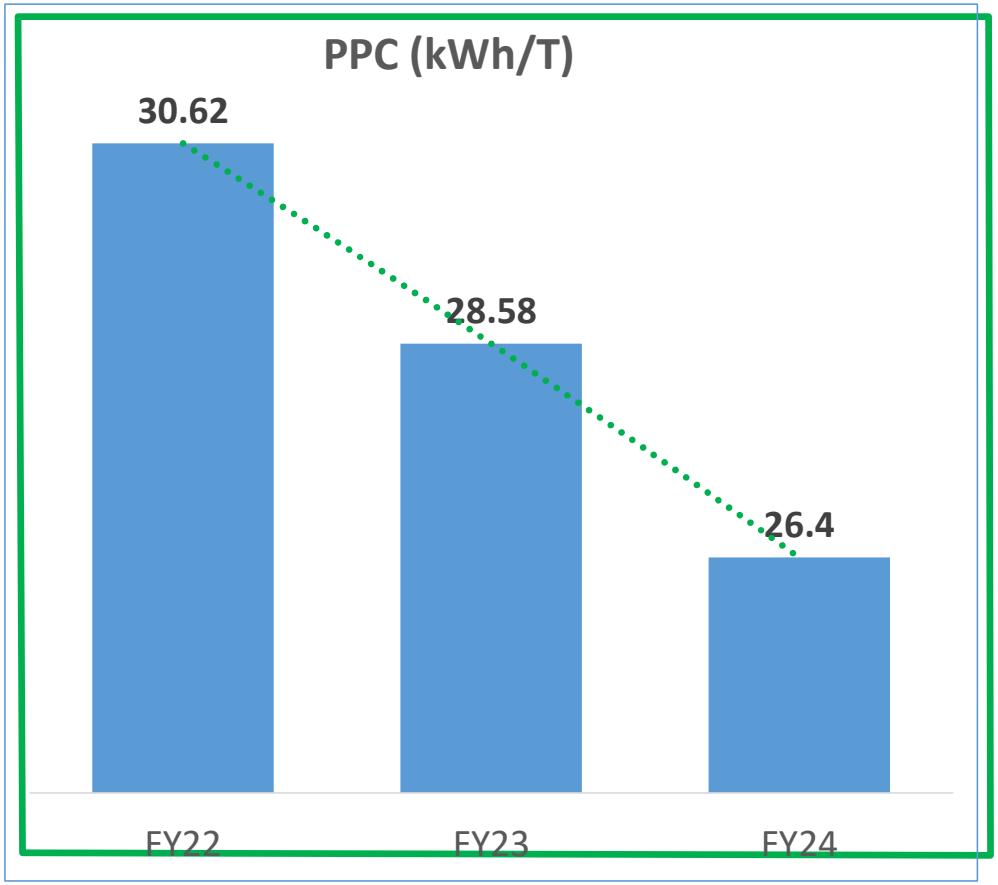
Specific Energy Consumption Data

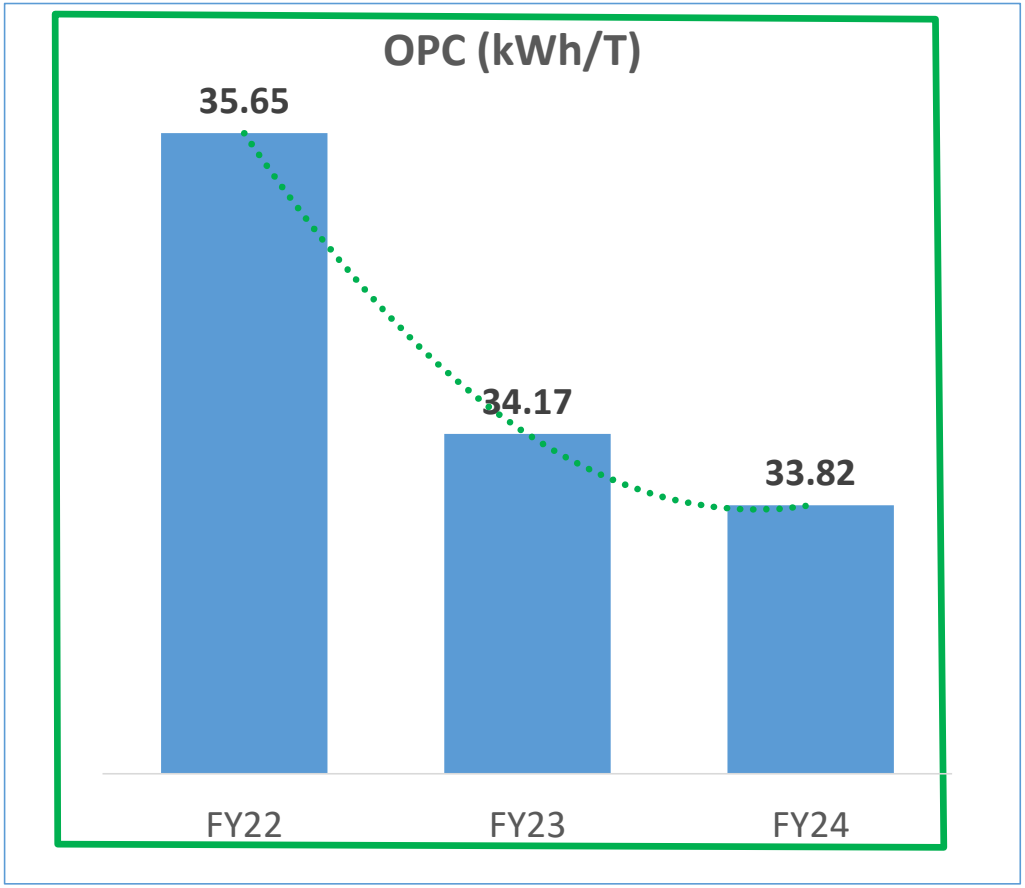
Parameter	2021-22	2022-23	2023-24
Installed Cement Capacity (mMTPA)	1.72	1.72	3.4
Actual Cement Production (mMTPA) :	1.51	1.54	1.83
Product Contribution of PPC (mMTPA) :	1.22	1.44	1.64
Product Contribution of OPC (mMTPA) :	0.29	0.09	0.18
Annual Electrical Energy Consumption (million kWh)	51.2	49.24	53.55
Specific Electrical Energy Consumption - PPC	30.62	28.58	26.4
Specific Electrical Energy Consumption - OPC	35.65	34.17	33.82
Overall average Specific Electrical Consumption	32.4	29.46	28.1

Specific Power Consumption in Trend Overall (KWH/T)

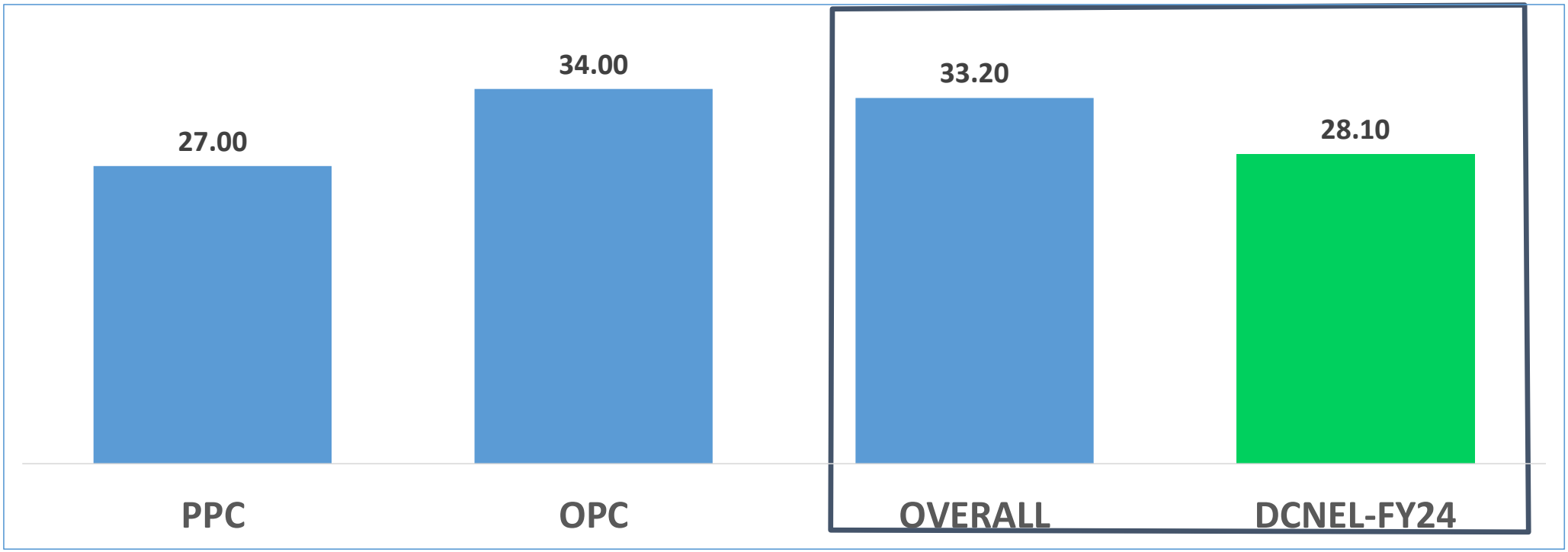


Specific Energy Consumption (Product wise)





Benchmark for PPC/OPC/ OVERALL (kWh/T)



Energy saving project implemented in last 3 years

Year	No of Energy Saving projects	Investment (INR Million)	Electrical Savings (Million KWH)	Savings (INR Million)	Impact on SEC (Electrical kWh/MT cement)
FY 21-22	3	18	7.3	15.2	2.0
FY 22-23	1	6	1.5	7.5	0.5
FY 23-24	3	1600.9	696.24	24.7	4.5
Total	**7**	**184.9**	**705.04**	**47.4**	**7.5**

Major Project Executed During Last Three years :-

1. Ball mill integrated with Roller press.
2. Packer upgradation from 12 spout nozzle to 16 spout nozzle.
3. Storage coverage shed for fly ash - cap. 35KMT.
4. Weigh bridge operation through RFID for logistic controls.
5. In house feeding of Condition fly-ash system and lime sludge.
6. Installation of new 90 KW VSD compressor replacing two no.s of 50 KW (each) GA compressor.
7. Removal of dampers before VFD drive auxiliary bag filter(8 no.)

Major Energy Saving Projects Implemented in last 3 Years

YEAR	Name of Energy saving Projects	Investment (INR Million)	Electrical Savings(Million KWH)	Total savings (INR Million)	Impact on SEC/SHC(KWH/ MT or Kcal/kg of cement)
FY 2021-22	Unmanned WB operation	6	1.5	7.5	0.4 kWh/MT reduction in SPC
FY 2022-23	Silo to packer feeding system modification	30	1.3	1.1	0.5 kWh/MT reduction in SPC
FY2023-24	RP integrated with Existing ball mill to increase TPH and reduce SPC	1600	696	23.38	4.5 kWh/MT reduction in SPC

Innovative Project-1

Title: Upgradation of Existing Ball mill with Roller Press.

Project background : We have upgraded our existing ball mill with pre grinder Roller press to increase TPH and reduce Specific power consumption. We have also upgraded our mill from bi chamber to mono chamber.

Project cost: 160 cr INR
Pay Back Period: 10Years
Reduce in SPC: 12% reduce in SPC
TPH increased from 130-290 TPH

IINOVATIE PROJECT-2

OPTIMIZATION OF 8 NO. OF AUXILLARY BAGFILTERS BY REMOVING DAMPERS & VFD INSTALLATIONS

SL No.	Bag filter Tag No.	LOCATION	RUNNING (KW)	(KW) SAVINGS
1	592FNB	DSP SILO	22.99	4
2	592FN9	CM-2	10.77	2
3	591FN9	CM-1	10.06	2
4	491FN3	TRUCK TIPPLER	39.51	8
5	491FN2	CSP	14.37	2
6	531FN1	MILL-1 W/F	10.77	2
7	641FN2	PACKING	20.11	3
8	642FN2	PACKING	20.83	3

BENEFIT-
Savings of 26 KWH of power
Yearly savings of 15 lacs.

Innovative Project-3

MODE-3 LOGIC FOR MILL-1 & MILL-2 SLIDE SHOE LUBRICATION

Project background

Previously, CM-1 and CM-2 slide shoe lubrication system is running in **MODE-1** logic, that is slide shoe HP pump(**11Kw**) is running continuously if corresponding group is running. This resulted in continuous running of HP pump.

We have implemented **MODE-3** logic for slide shoe **HP** pump, i.e. after mill start, pump will automatically stop after **10 minutes**, and will not start again until any one of slide shoe RTD indicates temperature greater than **72^0C**. This also increased the life of HP pump.

Description	UOM	Qty
Power saving Appx (both HP pump)	Kw/hr	8
Cost for power per Kwh	Rs.	6.5
Saving cost per hour	Rs.	52
Saving cost per day	Rs.	1248
Saving cost per year (Appx.300 running days)	Rs.	**3,74,400**

List of major projects planned in FY24-25

Project Name	Investment in Million Rs	Pay back period	Savings
Installation of 5MWp roof top solar power plant.	200	72 months	Rs 5.5 per unit of power
Replacement of 30% of coal in FBC with baggase.	_	_	Expected savings in RS 6.66 million per annum
Mill-2 capacity enhanced by 8 TPH	4.5	12 months	2.41Million kWh (Annual electrical savings)

Utilization of Renewable Energy sources

YEAR	SOURCE	TOTAL OFFSITE INSTALLED CAPACITY(MW)	CAPACITY ADDITION	TOTAL GENERATION (Million kWh)	SHARE% w.r.t overall Energy consumption
FY 2022-23	SOLAR	24MWp	4MWp	45	40
FY 2023-24	SOLAR	29MWp	5MWp	60	44

Utilization of Renewable Energy Sources

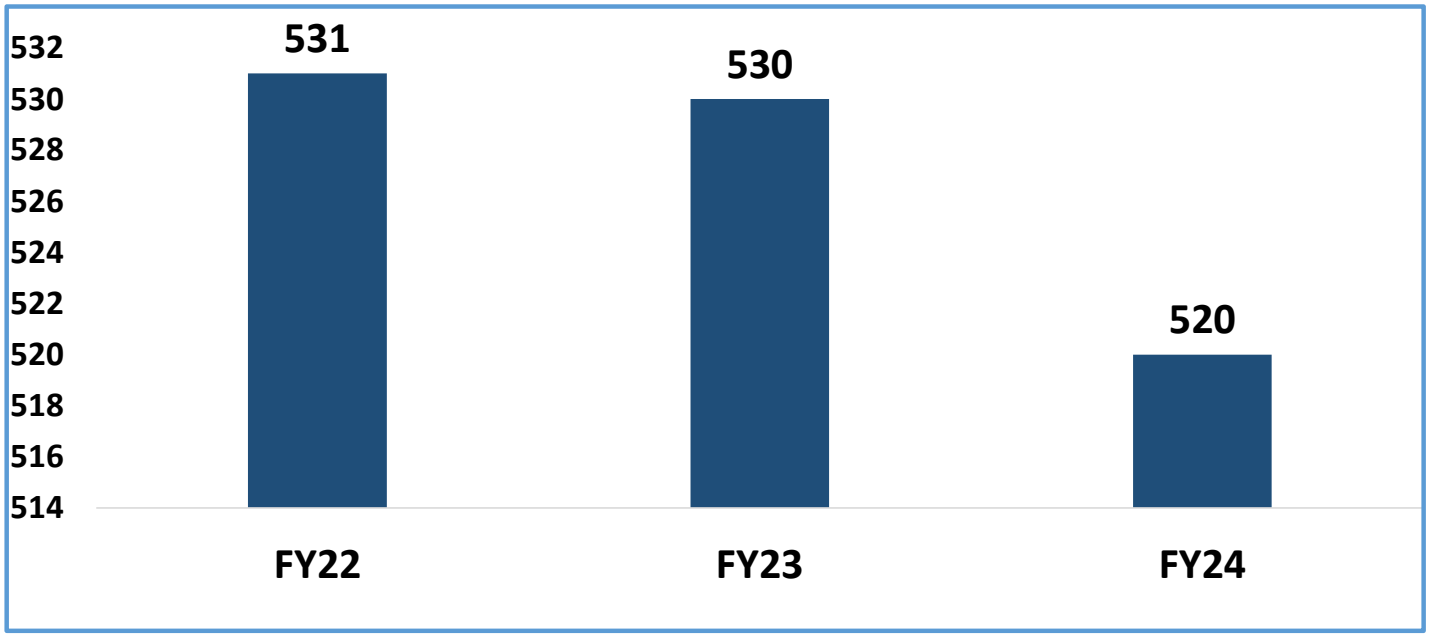
Dalmia Cement (North East) Limited- Lanka, Assam

- In Year FY23-24 we commissioned 29 MWp Ground Mounted Solar plant at our plant for captive consumption and wheeling to group plants.
- We have installed 80 No's Solar lights at highway to plant connectivity road and colony roads.
- RPO Obligation - All obligation is fulfilled and having excess Non-solar obligations.

Dalmia Cement Bharat Limited (Group)

- In line with our group vision of Carbon Negative Goal by 2040, we have brought down carbon emissions from 489kg/ton to 468kg/ton of cement.
- Installed/commissioning Capacity of 218.5 MW including 130 MW Solar Plant, 72 MW WHRS and 16.5 MW Wind.
- Dalmia USO Plant installed 6.8 MW WHRS & DC(NE)L, Lanka is drawing excess power from Dalmia USO.

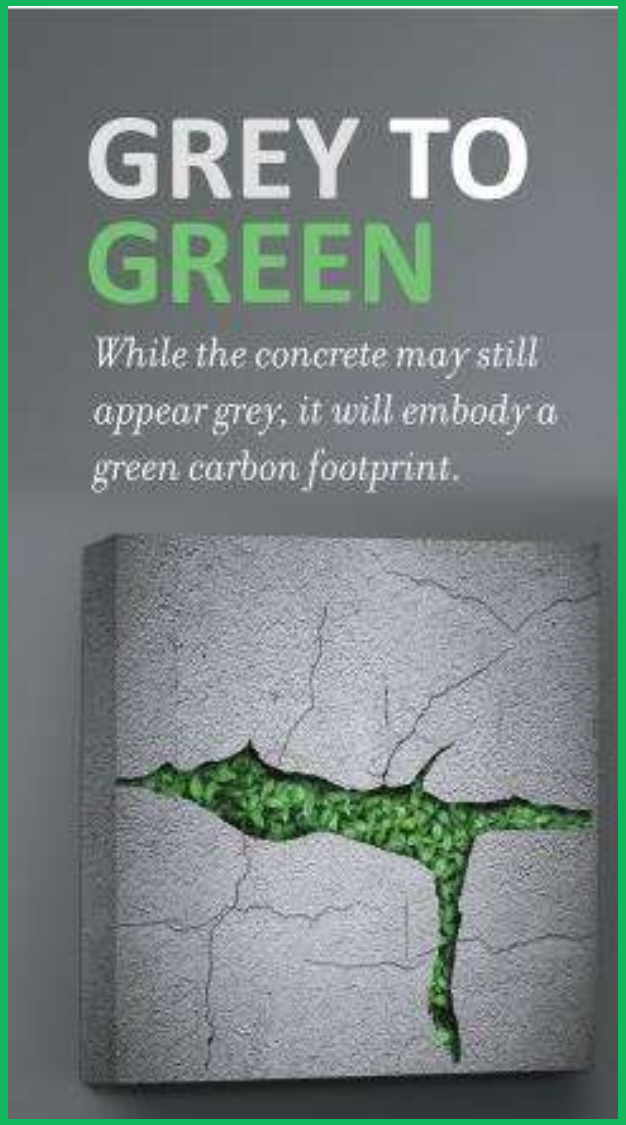
Green House Gases(GHG) Inventorization



Green House Gases(GHG) Inventorization

Action Plan for Reduction of CO_2 Emission :-

- ✓ 40 % replacement of GRID power by Solar power in captive consumption and 29% within group units
- ✓ Installation of Roller press in Cement Mill-1 which will result in enhancement of productivity and specific power consumption reduction by 4.5 kWh/T of cement.
- ✓ 8 no.s of EV vehicle(Trucks) to carry clinker from mother plant.
- ✓ Clinker factor increased from 1.5 (FY 2022-23) to 1.54 (FY 2023-24)



Dalmia Cement Company is Globally committed to RE 100

facebook · pwc · Dalmia Bharat Cement · Walmart · BARCLAYS · Microsoft · BANK OF AMERICA · Bloomberg · Nestlé · Google · Adobe · JPMORGAN CHASE & CO. · Coca-Cola

EP 100 - A global campaign to double Energy Productivity

Source: CDP Cement Report 2018

RE 100 A global initiative bringing together businesses committed to 100% renewable electricity by 2030

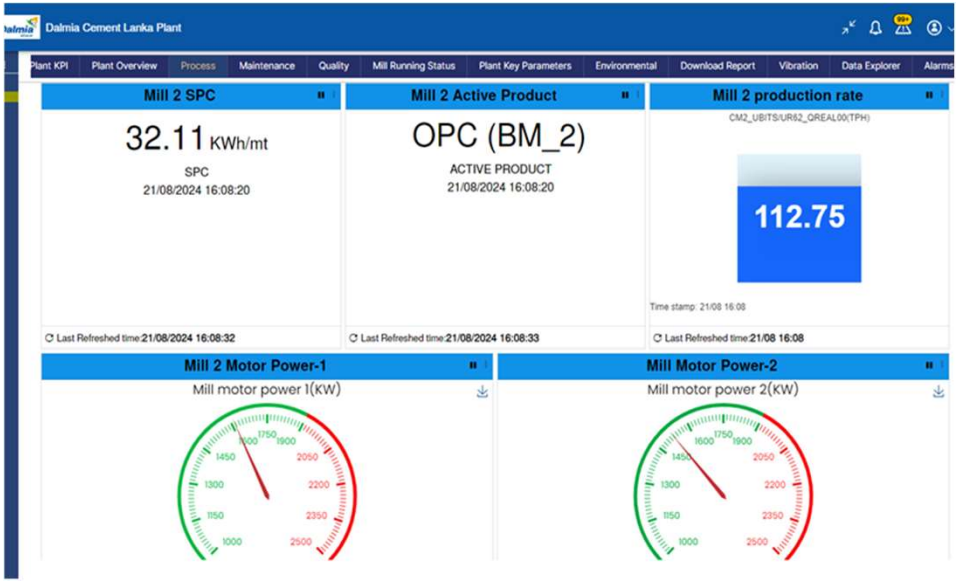
brandix · Godrej · NTT · Dalmia Bharat Cement · Hilton · Swiss Re · RBS · MULTIPLEX · Goldman Sachs · Aditya Birla · JLL · Kingspan

First Cement Company to join Globally EP 100

Our Commitment - Carbon Negative Cement Group by 2040

- Usage of 100% renewable power under fossil free electricity initiative – by 2030 (RE 100)
- Double energy productivity – by 2030 (EP 100)
- Renewable biomass and alternate fuels including plastic waste to replace fossil fuel use – by 2035
- Carbon Capture and Utilisation (CCU) for process emissions and Carbon Sequestration – by 2040
- In Our group Power Mix currently, we have Renewable Installed/commissioning Capacity of 218.5 MW including 135 MW Solar Plant, 72 MW WHRS and 16.5 MW Wind.

Energy Monitoring System



IOT based EMS monitoring:-

- Implemented IOT based mobile and desktop monitoring with regular alerts for better control and optimization.

Implementation of ISO 50001/ IGBC Rating

DC(NE)L-Lanka

bsi.

Certificate of Registration

ENERGY MANAGEMENT SYSTEM - ISO 50001:2018

This is to certify that:

Calcom Cement India Limited
2 No. Pipalpukhuri Lanka
Hojai 782446
Assam
India

Holds Certificate No: **ENMS 777428**

and operates an Energy Management System which complies with the requirements of ISO 50001:2018 for the following scope:

The Manufacture of Ordinary Portland Cement and Pozzolana Portland Cement.

For and on behalf of BSI:

Theuns Kotze, Managing Director Assurance - IMETA

Original Registration Date: 2023-03-11
Latest Revision Date: 2023-03-11

Effective Date: 2023-03-11
Expiry Date: 2026-03-10

Page: 1 of 1

...making excellence a habit.™

This certificate was issued electronically and remains the property of BSI and is bound by the conditions of contract.
An electronic certificate can be authenticated online.
Printed copies can be validated at www.bsi-global.com/ClientDirectory or telephone +91 11 2692 9000.
Further clarifications regarding the scope of this certificate and the applicability of ISO 50001:2018 requirements may be obtained by consulting the organization.
This certificate is valid only if provided original copies are in complete set.

Information and Contact: BSI, Kitemark Court, Davy Avenue, Knowlhill, Milton Keynes MK5 8PP. Tel: + 44 345 080 9000
BSI Assurance UK Limited, registered in England under number 7805321 at 389 Chiswick High Road, London W4 4AL, UK.
A Member of the BSI Group of companies.

Dalmia Cement (North East) Limited received the BSI certification of ISO 50001

DC(NE)L-Lanka

Dalmia Cement (North East) Limited received the Platinum benchmark from IGBC (Indian Green Building Council)

Learning from CII Energy Award 2023 or any other award program

1. Reduction of Compressor Pressure from 5.8 to 4.8 Kg/Cm2, increased the off time delay from 4 sec to 6 sec for Main Product Bag Filter & Reduction of Comp. Air Pressure from 5.7 to 4.5 Kg/Cm2 for Nuisance Bag Filters. Annual saving of 1.10 lacs.

2. Use of zero loss drain valve in all receiver tanks, eliminated the problem of condensation and avoided compressed air losses happening in timer mode.

3. Fixing of vibrators at hopper cones, belt chutes etc. to avoid jamming during monsoon. This has helped to prevent material fluctuations due to high moisture, & thereby maintaining uniform feed & hence control the specific power consumption.

4. Removal of dampers before Auxiliary bag filter fans by using VFD drives.

Award, acknowledgement & major achievement

Dalmia Cement (North East) Limited received the excellent energy efficient award by CII Year -22-23

Lanka unit of Dalmia Cement declared the winner of the 20th Annual Greentech Safety India Award'21

Dalmia Cement (North East) Limited received the Platinum benchmark from IGBC (Indian Green Building Council)

THANK YOU

CONTACT INFORMATION

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