



*Coal Based
Power Plants*

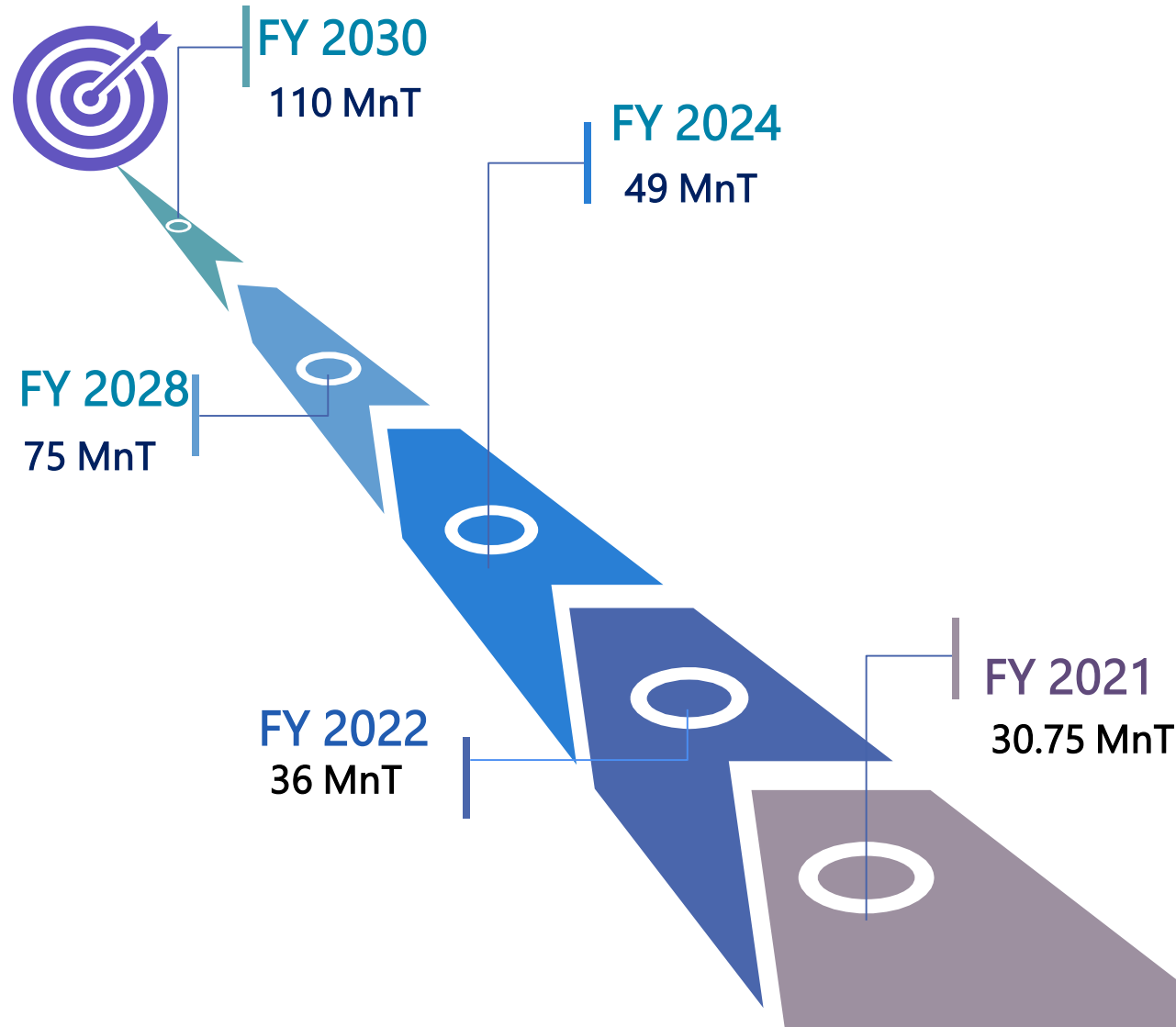
*Sustainable
Partnership
Opportunity*



*Cement
Industry*

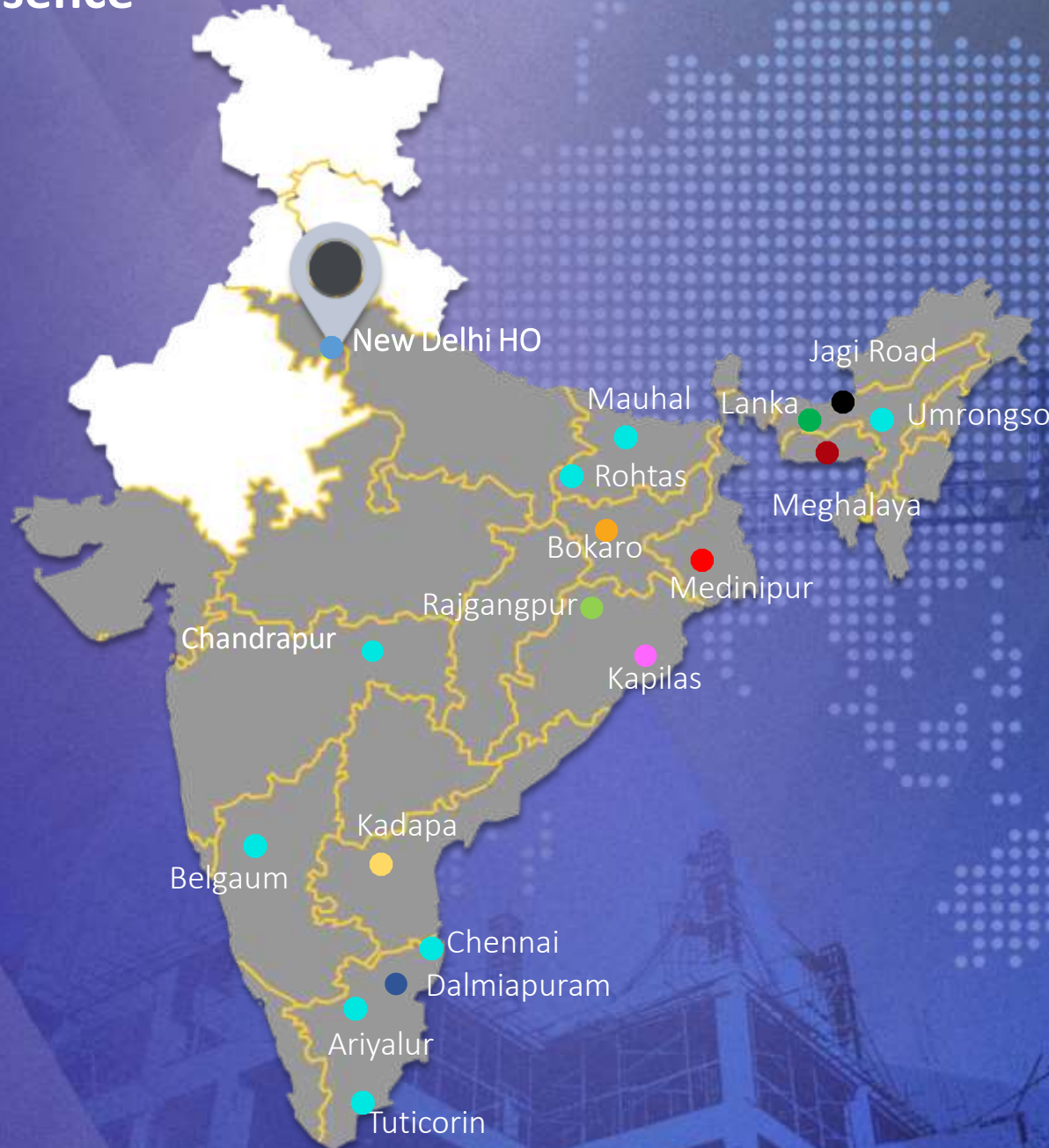
Bringing Economic Sense to Fly Ash – User's Perspective

Journey of Dalmia Cement – Capacity Expansion & Vision



“To be a leader in building materials and evokes pride in all stakeholders through customer centricity, innovation, sustainability and our values”

Our Mantra
“Clean and Green is profitable & sustainable”



- Rajgangpur (Siding OCIG)
- Kapilas (Siding MOIB)
- Bokaro (Siding PBJT)
- Medinipur WB (Siding MOCL)
- Dalmiapuram TN (Siding KKPS)
- Kadapa AP (Siding MDSCS)
- Lanka Assam (Siding LKA)
- Meghalaya (Siding NGC)
- Jagiroad Assam (Siding JID)
- Ariyalur TN
- Belgaum KA
- Chandrapur MH
- Chennai TN Upcoming
- Tuticorin TN Upcoming
- Mauhal Bihar Upcoming

Dalmia Group – Carbon Negative by 2040



“Companies such as Dalmia Cement and Mahindra are driving innovation. But we need many more to join them”.

Hon’ble UN Secretary-General Mr. António Guterres (Aug. 2020)



“Dalmia Cement is doing amazing work and innovation on Climate Change”.

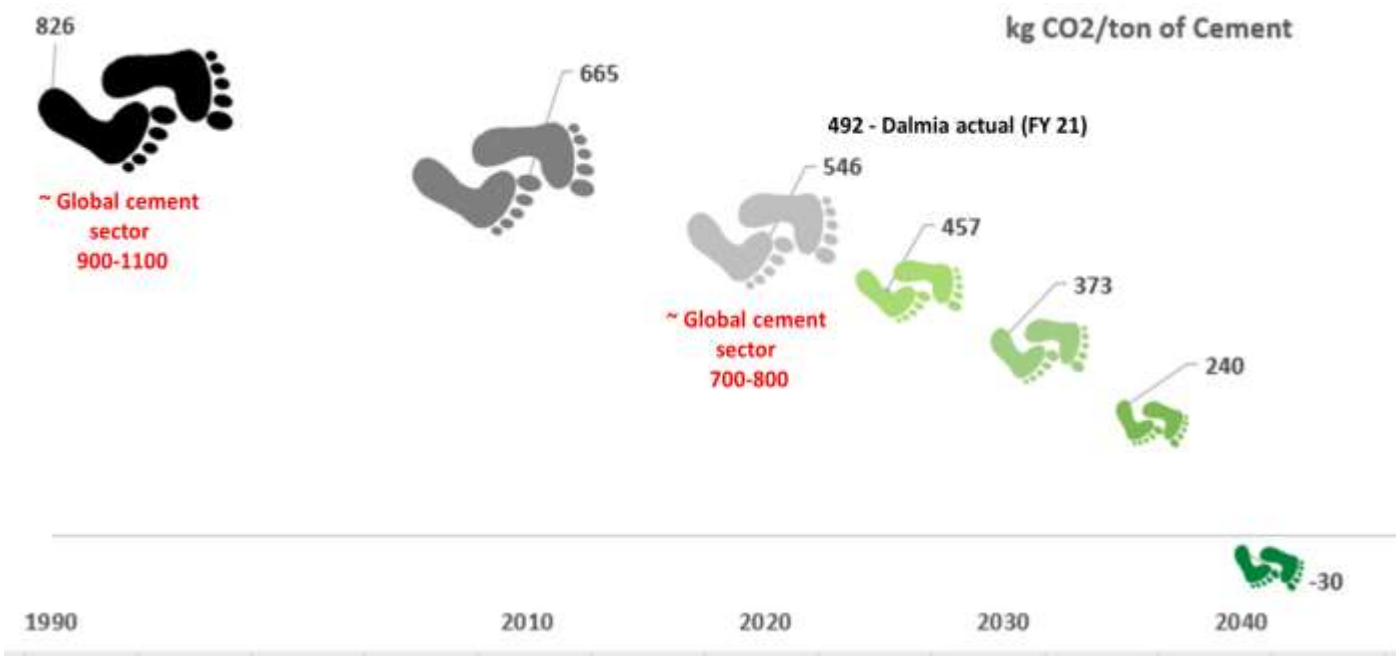
Mr. Al Gore, former Vice President of US, Global Climate Activist and a Noble laureate



“Global companies such as Apple, Dalmia Cement and Movida have made net zero commitments. I am enormously grateful to all those who have come forward with announcements today”.

Hon’ble COP-26 President Mr. Alok Sharma (12 Dec. 2020)

- ✓ COP 26 Business Leader & founding member of FMC
- ✓ Among the five climate defenders identified by BBC World globally
- ✓ Globally, first in heavy-industry sector to commit carbon negative roadmap in 2018
- ✓ Designated as Carbon Pricing Champion by CPLC, World Bank.
- ✓ Ranked #1 by CDP in global cement sector on business readiness for a low carbon economy transition
- ✓ First triple joiner globally of RE 100, EP 100 and EV 100.
- ✓ First Indian headquartered cement company to commit to Science Based Targets (SBT)
- ✓ 12.4 times water positive cement group



Dalmia contribution in creating Circular Economy



Lifted first conditioned fly Ash through BOXX rake for our North East plants.



First Cement manufacturer to deploy EV Trucks for transportation of Raw materials



Highest consumer of GGBS Slag which is a waste of steel Industry.



State of Art setup technology for environment friendly disposal of all type waste generated by other industries

Rourkela



Chennai



Trichy



Goa



Already serving > 70 municipalities & >300 private sector organizations

Dalmia contribution in creating Circular Economy



First Cement company to declare to be Carbon negative by FY 2040 (UN Climate Ambition Summit 2020)



Among few cement companies who are lifting significant quantity of conditioned ash on PAN India basis.



Utilizing waste like Red Mud, LD Slag, Mill Scale & Sludge in environment friendly manner.



Initiative to consume Pond Ash at various plant with Capex of Hot Air Generators

Dalmia Expansion Plans & FA Utilization

Particular	Existing	By FY'24	Increase (%)
Cement Capacity MTPA	36	49	36%
<u>FA Utilization MTPA:</u>	<u>5.9</u>	<u>8.3</u>	<u>41%</u>
Tamil Nadu	1.0	1.4	40%
Andhra Pradesh	0.4	0.5	25%
Karnataka	0.4	0.7	75%
Odisha	1.4	1.6	14%
Jharkhand	0.6	0.9	33%
West Bengal	0.5	0.8	60%
Bihar	0.3	0.4	33%
Maharashtra	0.5	0.9	80%
Assam	0.2	0.3	50%
Meghalaya	0.6	0.8	33%

Particular	Cap- MW	FA Gen.	Utilization %
Power Capacity MW			95548
<u>FA Gen. MTPA:</u>	<u>95549</u>	<u>110</u>	<u>100%</u>
Tamil Nadu	14013	8	147%
Andhra Pradesh	10585	10	107%
Karnataka	7760	2	75%
Odisha	14285	30	84%
Jharkhand	4768	8	122%
West Bengal	14002	19	88%
Bihar	6040	9	85%
Maharashtra	23346	24	116%
Assam	750	1	63%
Meghalaya			No Power Plant

>>>>>We offer partnership with TPPs wherever Fly Ash is underutilised.

FA Sector wise Disposal

Summary FA generation & utilization FY21

Description	Value
Installed Capacity (MW)	209991
Coal Consumed (Mn T)	686
Fly Ash Generation (Mn T)	233
Fly Ash Utilization (Mn T)	215
Percentage Utilization	92
Percentage Average Ash Content	34

Source - 202 power plants data – as per CEA report

Ash Utilization 92.41% ????

User's Perspective

Sector	% Utilization
Cement	26%
Road & Fly Over	14%
Bricks & Tiles	13%
Others	9%
Sub Total	62%
Low lying area	16%
Mine Filling	6%
Dyke Raising	8%
Sub Total	30%
Total	92%

Approx. 30 % (**70MTPA**) of FA is disposed to Low Lying, Mine filling & dyke raising.

These 3 modes can be a FA disposal option but in true sense it is not utilization of Fly Ash in environment friendly manner.

Productive Utilization of Fly Ash – Reducing Carbon Footprints

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Shifting of Dumps, Dykes:

It is propose to not include the Low lying area, Mine Filing & Dyke Raising as modes of disposal in utilization



Movement of Fly Ash from high generation source to place of use:

Fly Ash can be moved to distant place of use with the help of optimized freight & support price thus ensuring continuous running of TPPs with no additional handling cost.



Investment proposals for New GU's at power plants can also be worked out with Long term agreement for fly ash supply, land & electricity on mutual agreement

Bringing Economic Sense to Fly Ash – User's Perspective

Assured Evacuation of Fly Ash

Power Corporations	Auction Term
NTPC	Yearly
Neyvelli Lignite	Monthly
State Govt. TPP's	Yearly
Damodar Valley Corporation	Yearly
Private TPP / CPP	They Follow respective State Govt. TPP's

Commitment ?????

Solution

- Yearly Auctions of Fly Ash done by NTPC & other TPP's does not give opportunity to plan the product mix due to no surety of Fly Ash availability & price visibility
- Cement Sector still continues to manufacture OPC and other non Fly Ash based cement due to no commitment of FA in longer run
- **First right of participation should be given to actual end user for participation in auctions**
- **LONG TERM COMMITMENTS with End users**

Bringing Economic Sense to Fly Ash – User's Perspective

Increase in Infrastructure & Digitization

Requirement

- BOXN Rakes loading facility at all power plants
- Utilization of existing Coal siding at power plants for FA loading if BOXN rakes cannot be loaded directly from Silo
- Density of Fly Ash varies substantially resulting into more dead freight, may be innovatively thought off for a sustainable solution
- Online portal for actual generation / utilization of ash on daily basis
- Cement plant in the vicinity of 300 km should be provided fly ash on Delivered model basis to promote cement industry near TPP's

Infrastructure ?????

User's Perspective

- **80% of Fly Ash is lifted through Road Mode due to non availability of Rail loading infrastructure**
- **Moving pond ash through Rail is only possible if the existing coal siding at power plants can be utilized for Rail loading**
- **For the purpose of utilization of ash as per Clause B of MOEFCC notification dated 31.12.21 certain disposal modes like Mine filling, reclamation of low lying areas and Road making are included for freight sharing. As Cement Industry is utilizing the Fly Ash in most environment friendly manner we request MOEFCC/Power Ministry to include the Cement plants for freight sharing up to 300 Km**

Bringing Economic Sense to Fly Ash – User's Perspective

We request Build Long Term Partnership with Us to grow together



Credibility

Globally recognized for its efforts in sustainable manufacturing practices



Capability

Robust infrastructure which can process all type of Industrial Waste



Dalmia
Bharat Cement



Commitment

Commitment to move to negative carbon foot print

Thank You