



FLY ASH UTILISATION -2022  
International Conference  
22- 23 April-2022

Conference Theme “Let’s Ensure 100% Utilisation of Fly Ash”

# **Ashtech India Pvt. Ltd.**

**(ISO-9001: 2015 Certified Company)**

# Ash Utilization Beyond 100%



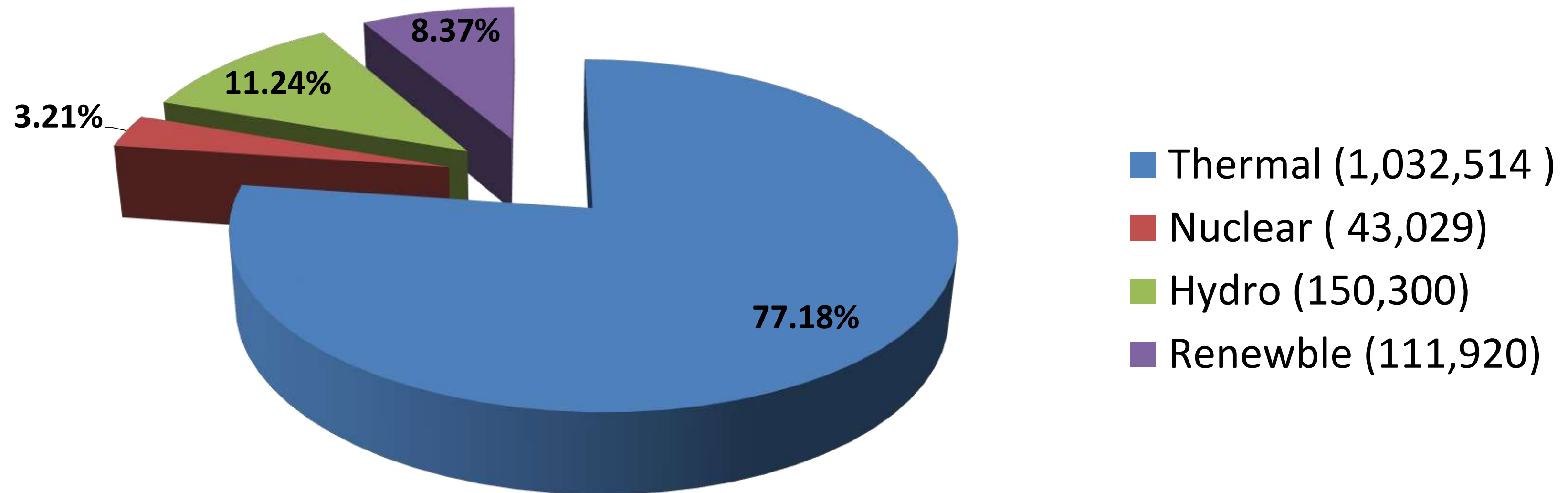
- **Electricity is the Prime Source of Energy**
- **Coal is a major source of fuel for production of electricity in many countries in the world.**
- **In the process of electricity generation large quantity of fly ash gets produced**
- **About 70% of Power Generation in India is by Coal Fired Power Plants**





# Power Sector Scenario

## Electricity Generation ( Million Units )



**Total Electricity Generation : 1,337,763 MUs ( 2020-21 )**

## **Summary - Ash Utilization ( 2020-21 )**

<b>Description</b>	<b>Quantity</b>
<b>Number of Power Stations</b>	<b>202</b>
<b>Installed Capacity</b>	<b>209,990 MW</b>
<b>Generation</b>	<b>1,032,514 MUs</b>
<b>Coal Consumed</b>	<b>686 Million Tons</b>
<b>Ash Generated</b>	<b>233 Million Tons</b>
<b>Ash Utilized</b>	<b>215 Million Tons</b>
<b>Percentage Utilization</b>	<b>92.4 %</b>
<b>Average Ash Content in the Coal</b>	<b>33.88%</b>

## Summary - Ash Utilization ( 2020-21 )



Description	Quantity
Number of Power Stations Utilizing 100% and above	114
Number of Power Stations Utilizing between 90% & 100%	13
Number of Power Stations Utilizing between 70% & 90%	18
Number of Power Stations Utilizing between 50% & 70%	21
Number of Power Stations not generated any Ash	10

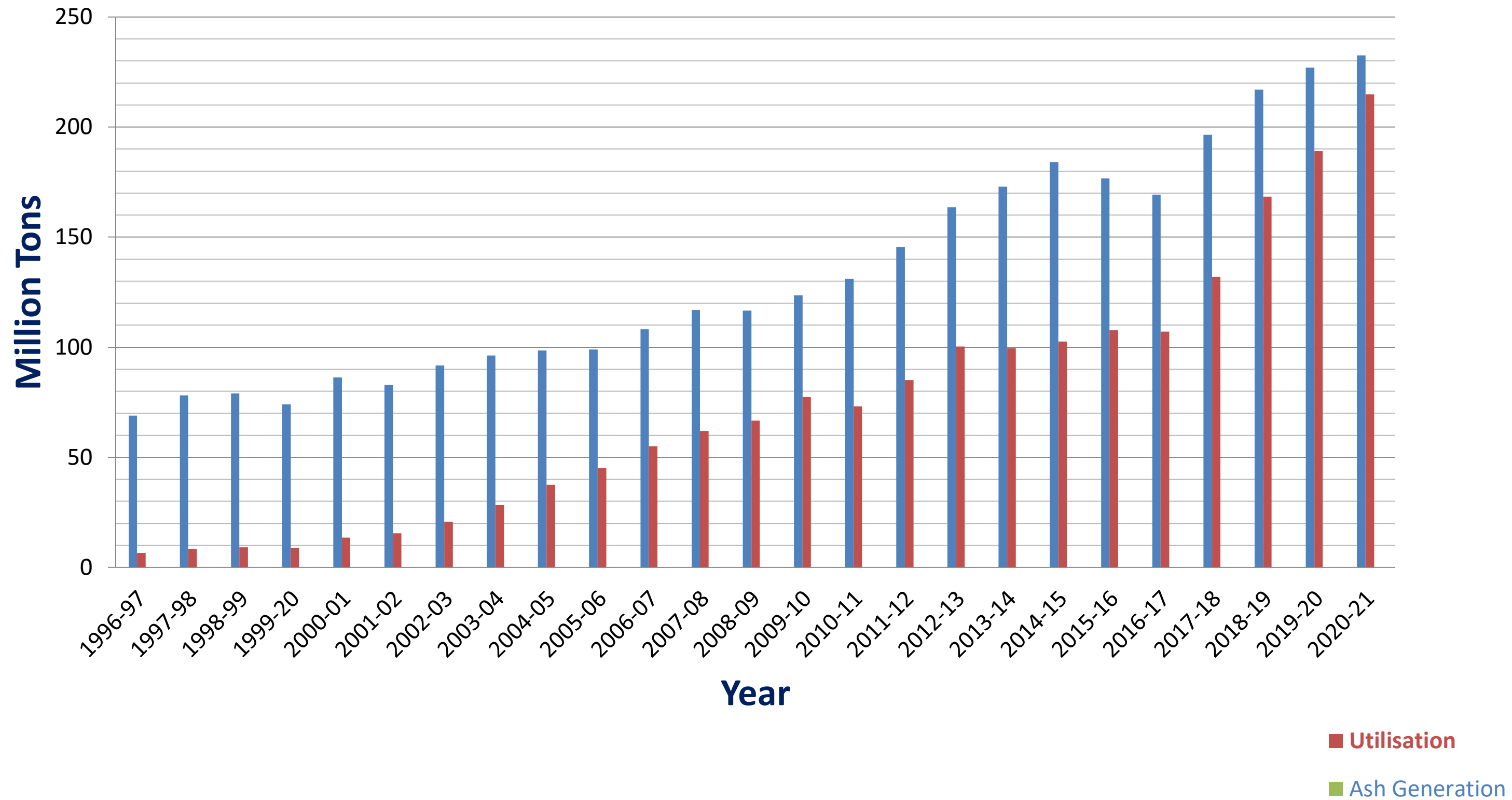
**Legacy Ash in the Ash Ponds : 1740 Million Metric Tons**

## Modes of Ash Utilization ( 2020-21 )

Mode of Utilization	Quantity ( Million Tons)	Percentage (%)
➤ Cement	60.02	25.81
➤ Mine Filling	14.41	6.20
➤ Bricks & Tiles	30.18	12.98
➤ Reclamation of Low Lying Area	36.25	15.59
➤ Ash Dyke Raising	18.47	7.94
➤ Roads & Flyovers	34.98	15.04
➤ Agriculture	0.077	0.03
➤ Concrete	1.92	0.83
➤ Hydro Power Sector	0.06	0.03
➤ Others	18.53	7.97
➤ Un-utilized Ash	17.65	7.59
<b>Total</b>	<b>233</b>	<b>100</b>



# Generation & Utilization of Ash from Power Plants 1996-97 to 2020-21



# Major Expressways under Construction

Sl. No.	Expressway	Completion	Length (KM )	Project Cost ( Rs. Crores)
1	Ahmadabad - Dholera	Mar-23	109	3,500
2	Amritsar – Jamnagar	Mar-23	109	3,500
3	Bangalore - Chennai	Mar -24	261	17,000
4	Bangalore - Mysore	Aug-22	119	8,066
5	Bundelkhand	Dec-22	296	14,716
6	Chennai port - Maduravoyal	Dec-22	20.5	5,965
7	Coastal road Mumbai	Jun-22	10	12,750
8	DND - KMP	Dec-22	59	3,580
9	Delhi – Amritsar – Katra	Dec-23	669	39,500
10	Delhi – Mumbai	Mar-23	1,350	1,00,000
11	Dwaraka Expressway	Aug-22	29.1	8,662
12	Meerut – Prayagraj	Mar-23	594	4,000
13	Ambala—Narnaul	Dec-22	227	5,108
14	Gorakhpur link	Dec-22	91.3	5,876
15	Lucknow - Kanpur	Oct-23	63	4,700
16	Mumbai – Nagpur	May-22	701	55,000
17	Pathankot - Ajmer	Mar-23	600	8,000
18	Raipur – Vishakhapatnam	Mar-24	464	20,000

**Opportunity to Utilize Pond Ash**

## Challenging Task

- Present Ash Utilisation (FY 2020-21) : 92.4% (215 Million Tons)
- Legacy Ash as on 31<sup>st</sup> Mar -21 : 1740 Million Tons.
- Assuming the same amount of Ash Generation every year (About 230 Million Tons), even if Ash Utilisation is ramped up to 130% it takes 18 - 20 years to fully utilise the legacy Ash.
- **Very Challenging Task !!!!**

## **Details of Notification S.O 5481(E): 31-12-2021**

**Responsibilities of Thermal Power Plants ( including Captive & Cogeneration ) to dispose off Ash Generated ( Fly Ash & Bottom Ash) as per the guidelines.**

**Use in eco-friendly manner Viz.,**

- Bricks , Blocks, Tiles, Fiber Cement Sheets, Pipes, Boards , Panels**
- Cement Manufacturing, RMC**
- Roads , Flyover embankments, Dams , Construction of shoreline protection, etc**
- Filling Low lying areas , mine voids**
- Manufacture of Sintered / Cold bonded Ash aggregate**
- Agriculture purpose based on soil testing.**
- Export to other countries**
- Any other eco-friendly applications.**



## Time Lines for Ash Utilisation

**TABLE -1**

<b>Category</b>	<b>Utilization Percentages of Thermal Power Plants</b>	<b>First Compliance Cycle to meet 100% Utilization</b>	<b>Second Compliance Cycle onwards to meet 100% Utilization</b>
<b>1</b>	<b>&gt; 80%</b>	<b>3 Years</b>	<b>3 Years</b>
<b>2</b>	<b>60 - 80 %</b>	<b>4 Years</b>	<b>3 Years</b>
<b>3</b>	<b>&lt; 60%</b>	<b>5 Years</b>	<b>3 Years</b>

Thermal Power Plants shall be Responsible to Utilize 100% Ash generated during that year, and in no case below 80% in the year.

## Time Lines for Legacy Ash Utilisation

- Pond Ash which is stored in the Ash Ponds should be utilized Fully with in 10 years as in mentioned below table..
- Minimum Quantity of Legacy Ash Utilization is Calculated based on Annual generation as per installed Capacity of the Power Plant.

TABLE -2

Year from Date of Publication	1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup> to 10 <sup>th</sup>
Utilization of Legacy Ash ( In % of Annual Ash generation as per Installed Capacity )	Atleast 20%	Atleast 35%	Atleast 50%

## Key Points

- Any New as well as Operational Thermal Power Plants may be permitted an emergency or temporary Ash Pond with in an area of 0.1 Hectare / MW.
- Statutory Obligation of 100% Ash Utilization shall be treated as a change in law, wherever applicable.
- All agencies engaged in construction activities such as Roads , Fly Over embankments, shore protection, dams, all construction works etc , with in 300 Km of Thermal Power Plants should necessarily use Ash , which shall be delivered free of cost by Coal based Power Plants.
- Power plants may charge for Ash cost and transportation as per mutually agreed terms, if plant is able to dispose of Ash through other means.
- Utilization shall be in accordance with BIS, IRC, CBRI - Roorkee, CRRI – Delhi, CPWD Etc.
- Obligatory to use Ash in Mine Filling atleast 25% on weight to weight basis for external dump of the overburden as per DGMS guidelines.

## Environmental Compensation for Non- Compliance

- **If Ash Utilisation is not achieved (As Per Table -1) a penalty of Rs 1000 Per Ton shall be charged against un-utilised Qty.**
- **If Legacy Ash Utilisation is not achieved (As Per Table -2) a penalty of Rs 1000 Per Ton shall be charged against un-utilised Qty.**
- **If transporter / vehicle owner does not deliver the ash to authorised purchaser / user, a penalty of Rs 1500 / Ton will be levied in addition to Prosecution.**



## Environmental Compensation for Non- Compliance

- It is the responsibility of Purchaser / user agencies to utilise the Ash in Eco-friendly manner as per laid down guidelines. If the guidelines are not followed a penalty of Rs 1500 / MT shall be charged.
- If Building Construction industry doesn't follow the guidelines Rs 75 per Sq.ft shall be charged as Environmental Compensation.

## Enforcement, Monitoring, Audit & Reporting



- CPCB / SPCB shall enforce & monitor the Compliance of this notification. The Concerned District Magistrate shall have concurrent jurisdiction for enforcement & mentoring of the provisions of this notification.
- All the Power Plants to upload monthly information regarding Ash Generation & Utilisation by 5<sup>th</sup> of next month on their web portal and also submit Annual Reports (For the Period 1<sup>st</sup> April – 31<sup>st</sup> March ) to CPCB / SPCB before 30<sup>th</sup> April every year.

# Challenges in Ash Management



**Environmental Pollution**

**Land Pollution**



**Air Pollution**



**Storage Problem**

**Pond Pollution**



## Company Profile



- **An ISO 9001: 2015 certified company.**
- **Ashtech provides One Stop Solution to achieve 100% Ash Utilisation**
- **With vast and rich experience of over two decades in the field of Fly Ash utilization, Ashtech has achieved many laurels.**



## **Major Achievements**



- **1<sup>st</sup> to transport Fly Ash through Jumbo Bags in the Country.**
- **1<sup>st</sup> to Establish Cement manufacturing Unit in the Country in the Power Plant Premises.**
- **1<sup>st</sup> to Export Fly Ash to all the neighbouring Countries.**
- **1<sup>st</sup> to Establish De-bagging terminal out side India.**
- **Largest Exporter of Fly Ash in the Country.**
- **18 Lac Tons Fly Ash supplied to L&T in Sambalpur – Rourkela High way project in 2013 using Fly Ash from Vedanta**

## **Major Achievements**



- **Processor, Distributor and Exporter of Fly Ash – 1<sup>st</sup> in the Country.**
- **1<sup>st</sup> to Establish and Operate Fly Ash Classification Unit in the Country (@ Dahanu T P S)**
- **1<sup>st</sup> to Establish and Operate Coarse Ash Grinding Unit in the Country (@ Dahanu T P S)**
- **1<sup>st</sup> to Establish AAC block manufacturing Unit in the Country in the power plant premises (@ Reliance Rosa Power Plant).**
- **1<sup>st</sup> to Design & Establishing On line Cenosphere Collection in the Country (@ Reliance Sasan )**
- **Establishing both AAC Plant & Cement Grinding Unit in the plant premises @ GMR Warora**

## Vision Statement



**Ashtech India ( Pvt) Ltd, shall be professionally Managed company committed to total customer satisfaction and enhancing stakeholder value**

**Ashtech India ( Pvt) Ltd, shall be innovative, entrepreneurial and empowered team constantly creating value and attain global benchmarks.**

**Ashtech India ( Pvt) Ltd, shall foster a culture of caring, trust and continuous learning while meeting the expectations of employees, stakeholders and society.**

## Key Personnel

<b>Mr. P.K. Darolia</b>	<b>Executive Director</b>
<b>Mr. Prasad Rao</b>	<b>President - Former Sr. V P Reliance Group</b>
<b>Mr. Sharad Marda</b>	<b>CEO - Formerly at Swiss Singapore</b>
<b>CA. Raj Kumar Jain</b>	<b>VP Finance - Formerly at Financial Technology Grp</b>
<b>Mr. Subhash Bidwai</b>	<b>VP Technical - Formerly at Demech</b>
<b>Mr. Harsh Dugar</b>	<b>VP Operations - Formerly at BLA Power Pvt. Ltd</b>
<b>Mr. Vimal Kumar</b>	<b>Advisor - Former Director Fly Ash Mission</b>
<b>Mr. P. K. Majumdar</b>	<b>Consultant - Power Plant Professional</b>
<b>Mr. U.P. Pani</b>	<b>Consultant - Former Director (H.R) NTPC</b>
<b>Mr. Vipin Dave</b>	<b>Consultant - Ex Reliance Industries Ltd.</b>
<b>Mr. Alok Raizada</b>	<b>Consultant - Former NTPC</b>
<b>Mr. Rakesh Kaul</b>	<b>Consultant - Expert Cement Plants</b>
<b>Mr. Sudhir Jetti</b>	<b>Consultant - Expert AAC Units</b>



- **Handling more than 15 Million tons per annum of Fly ash from various power stations across the country.**
- **With more than 1500 employees and 550 + heavy vehicles like dumpers, trucks, bulkers, transit mixtures cater to the requirement of customers across the country.**

Ashtech Provides One Stop Solution for  
Total Ash Management

# One Stop Solution to Total Ash Management



- **Pneumatic conveying system :**
  - Design, Engineering, Erection & Commissioning and O&M of Ash Conveying System.
- **Fly Ash Segregation :**
  - Natural Segregation
  - Segregation through Classifier
- **Cement manufacturing**
- AAC ( Light Weight Block) manufacturing
- Cenosphere Processing
- Pond Ash Management

# One Stop Solution to Total Ash Management

- **Low Lying area Filling:**

- Identifying the Low lying areas
- Obtaining all the permissions ( Land Owner, Gram Panchayat, Tasildar , Regional Office of State Pollution Control Board & other Regulatory bodies )
- Loading & Transportation of Ash
- Compaction , Soil Capping etc
- Obtaining Work Completion Certificate.

- **Mine Filling**

- Identifying the Mine for filling.
- Obtaining all the Statutory permissions as per MOEF &CC guidelines
- Transportation of Ash
- Completion of Filling as per guidelines.
- Obtaining Work Completion Certificate.

# One Stop Solution to Total Ash Management



- **Transportation of Fly Ash through Railways:**
  - Obtaining Permissions from Railway Authorities
  - Liaisoning to organise the rakes
  - Establishing bagging unit where required
  - Loading of the Rake ( Bags / Loose Bulk )
  - Unloading at the destination
  - Delivery to the end User.
- **Revenue Generation to the Power Plant**
- **Achieving 100% Ash Utilisation at the shortest possible time.**

## Successful Track Record



**We have a successful track record of converting waste into a resourceful raw material .**

**Achieved 100% Ash Utilisation at :**

- Reliance Power.
- GMR
- NTPC, Badarpur
- TNEB Ennore TPS
- Reliance D T P S

From a negative cost , created value from Fly Ash for above Power Plants.

We are confident of replicating the same at other locations.



## Company Owned Fleet

Type	Vehicles
Trucks	550 +
Bulkers	
Dumpers	
Transit Mixers	
Trailer	

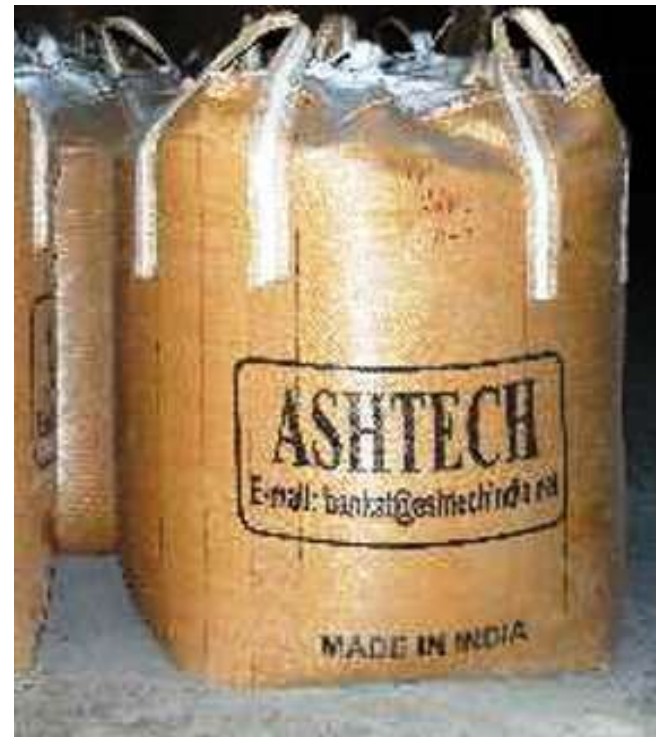




# Packaging



Small Bags



Jumbo Bags



Bulk Carrier



Sea Vessel



Railways



Tipper Trucks



# Gainful Utilization of Fly Ash



RMC



Cement



Blocks / Pavers



Roof Sheets



Back Fill



Road Embankment



# OUR PRODUCT RANGE



# Manufacturing Facilities



# Manufacturing Unit



**Established Production Unit of Ultra Fine Fly Ash @ Adani, Tiroda**



# Manufacturing Unit



**Cement blending & packing plant 1500 TPD @ Adani, Mangalore  
Ash transportation through Pneumatic Conveying**



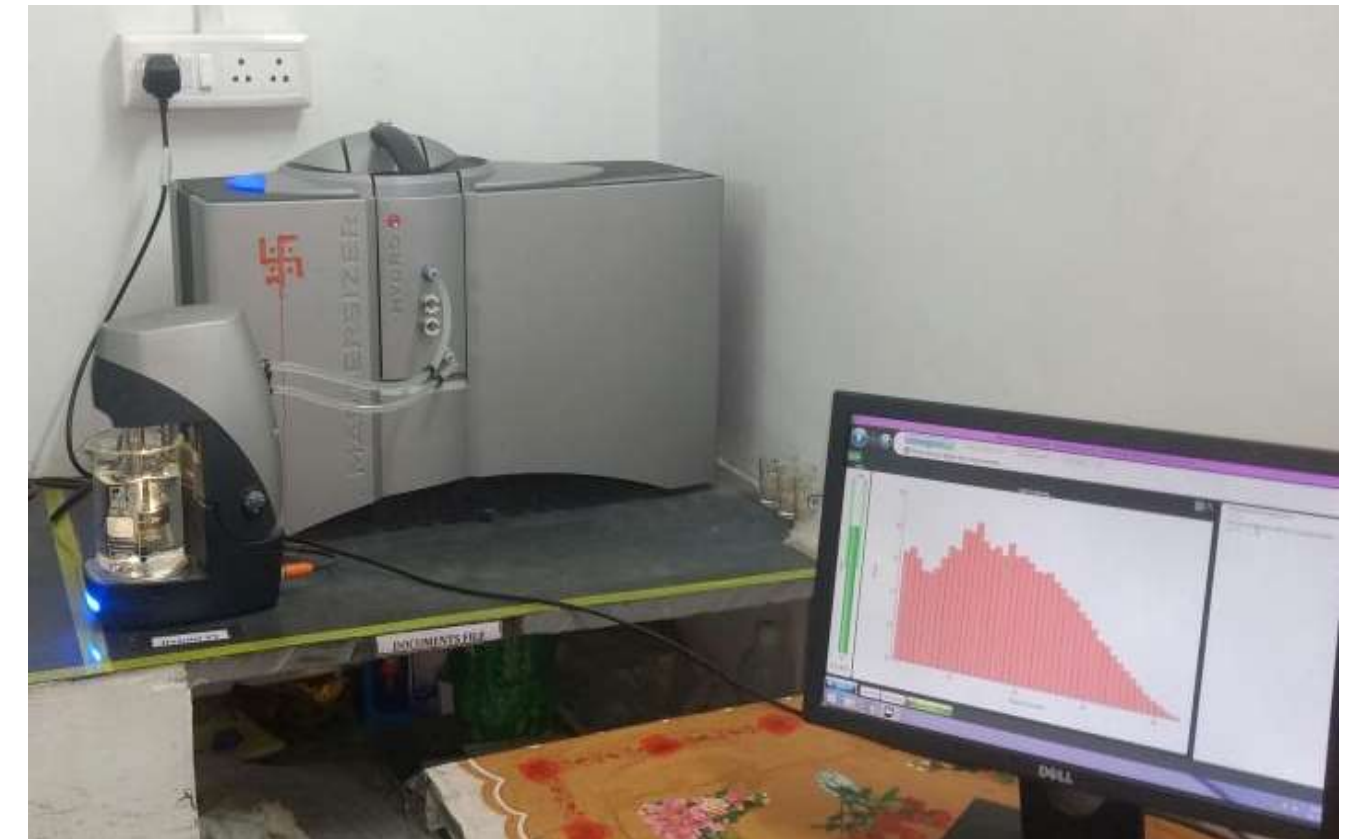
# Manufacturing Unit



**Cement blending & packing plant 1500 TPD @ Raichur**



# TESTING LABS..





# Our

## Principals





# Key Clients

**900+ clients & suppliers** across its business verticals including large and reputed players in sectors namely **Cement, Power, Infrastructure, Real Estate, Road Construction, Government, PSUs, Metro Rai, etc**



दिल्ली मेट्रो रेल कॉर्पोरेशन लिमिटेड  
Delhi Metro Rail Corporation Limited



Ambuja  
Cement



Pratibha Industries Limited



AKSHAR  
INSPIRE LIFE



COSMOS GROUP™  
Upgrading Lifestyle



PURANIKS  
Ideas that stay with you



Hiranandani  
creating better communities



Relcon Infraprojects Ltd.  
Engineering National Wealth



vibrant  
live in the future



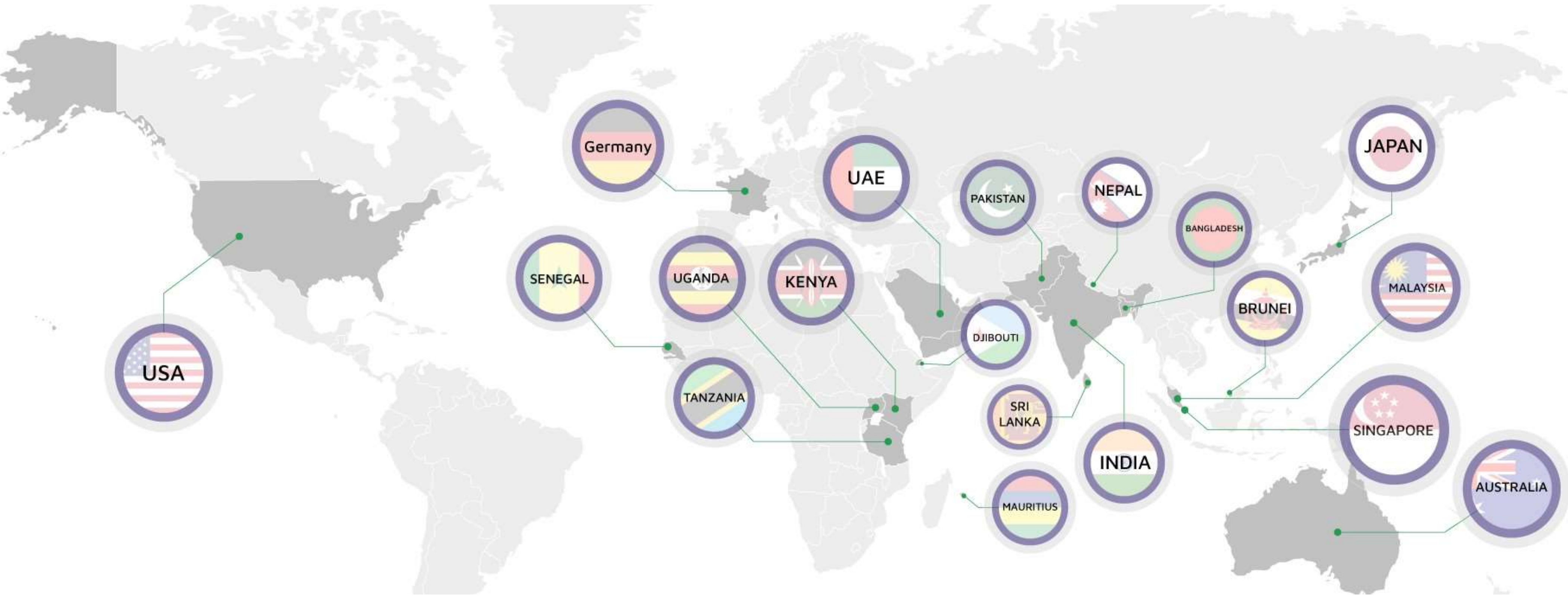
# Key Clients

(Cement)





# Global Presence





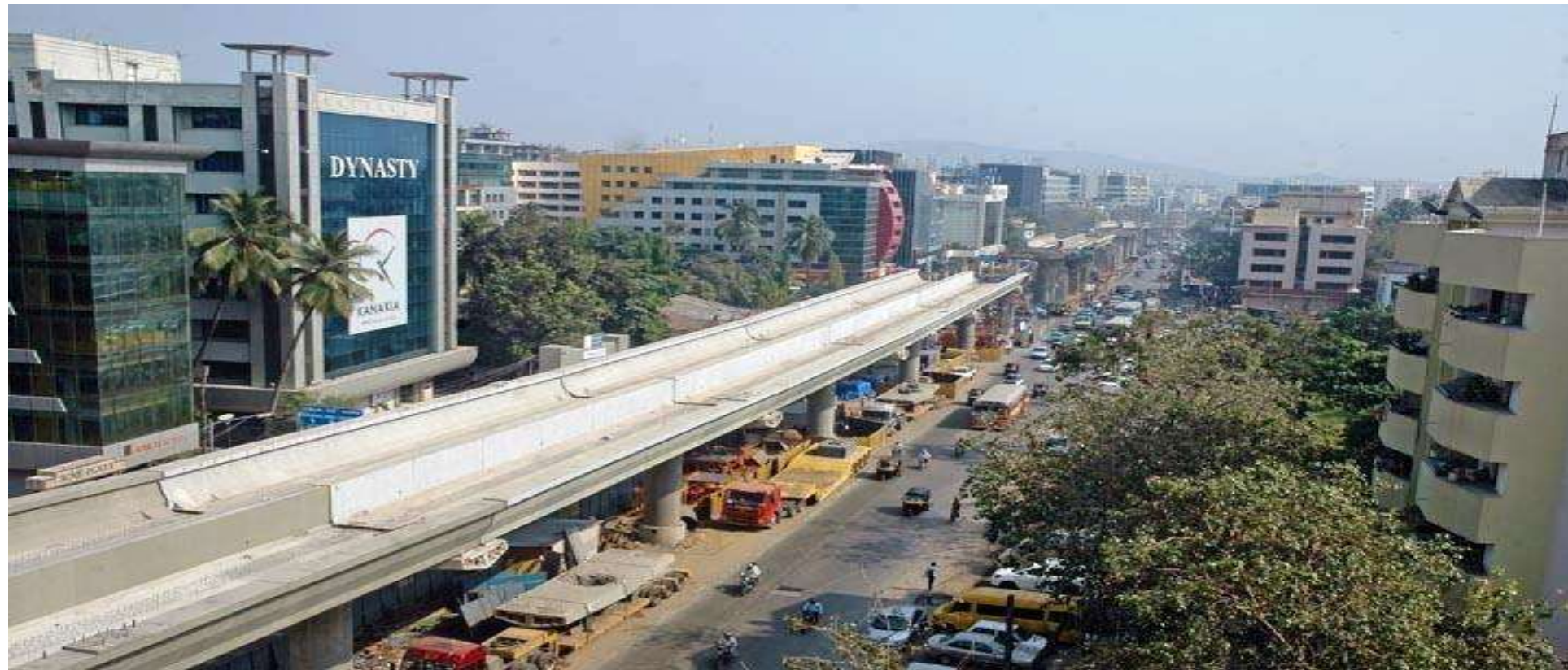
# Important Projects in India

- **Hiranandani Gardens, Mumbai**
- **L&T Mono Rail Project, Mumbai**
- **Nirmal Lifestyle, Mumbai**
- **SD Corporation – Twin Towers, Mumbai**
- **Bandra-Worli Sea Link Project, Mumbai**
- **Tata Atomic Power Station Project, Boisar**
- **SCLR Project, Vidyavihar**
- **Magarpatta City, Pune**
- **Reliance Metro Project, Mumbai**
- **Nanded City, Pune**
- **Pipavav Shipyard Limited, Gujarat**
- **Bangalore International Airport, Bangalore**





# Important Projects in India



**Mumbai Metro Project – Phase 1, Andheri**



**Pipavav Port, Gujarat**



**Twin Towers, Mumbai**



# Important Projects Out side

## India

- The Burj Khalifa (Tallest Building in the World), Dubai
- Palm Islands, Dubai
- Dubai Marina, Dubai
- Etisalat Head Office, Dubai
- Abu Dhabi Cricket Stadium, Abu Dhabi
- Hidd Port Project, Kingdom of Bahrain
- Financial Harbor Project, Kingdom of Bahrain
- Shaikh Khalifa Causeway Bridge, Kingdom of Bahrain
- Alba Extension Silos, Kingdom of Bahrain
- Hidd Pump Station, Kingdom of Bahrain
- Khalifa Sports City, Qatar
- Ras Lafan Project, Qatar
- Shahid Rajaei Port Project, Iran
- Naga Hamadi Barrage Project, Egypt
- Salalah Port, Oman



Palm Islands, Dubai



- Baka Power & Desalination Plants, Oman



## **Achievements by Ashtech FY 2021-22**

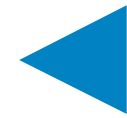


- **Handled about 50,000 TONS PER DAY of Fly Ash / Pond Ash across various locations.**
- **Increase of about 15% Compared to previous Financial year**
- **Loaded about 250 rakes during the Financial year & about 300 rakes since Freight incentive scheme implemented by Railways.**
- **Serving more than 20 Cement manufacturing Companies in the country.**
- **Contributing to supply of Pond Ash to various National Highways & Road Projects across the country.**



# Well Diversified Operations

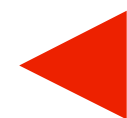
Strong Management Pedigree



Wide Variant of Products



900+ B2B Clients



6 Manufacturing Locations  
across product lines; 1 new  
plant each for sand processing  
& specialty chemicals







**Ashtech is proud to announce it's  
THIRD CENTURY IN DISPATCH OF FLYASH**



100<sup>th</sup> Rake at LPGCL , 100<sup>th</sup> Rake at GKEL  
& 100<sup>th</sup> Rake at Renusagar





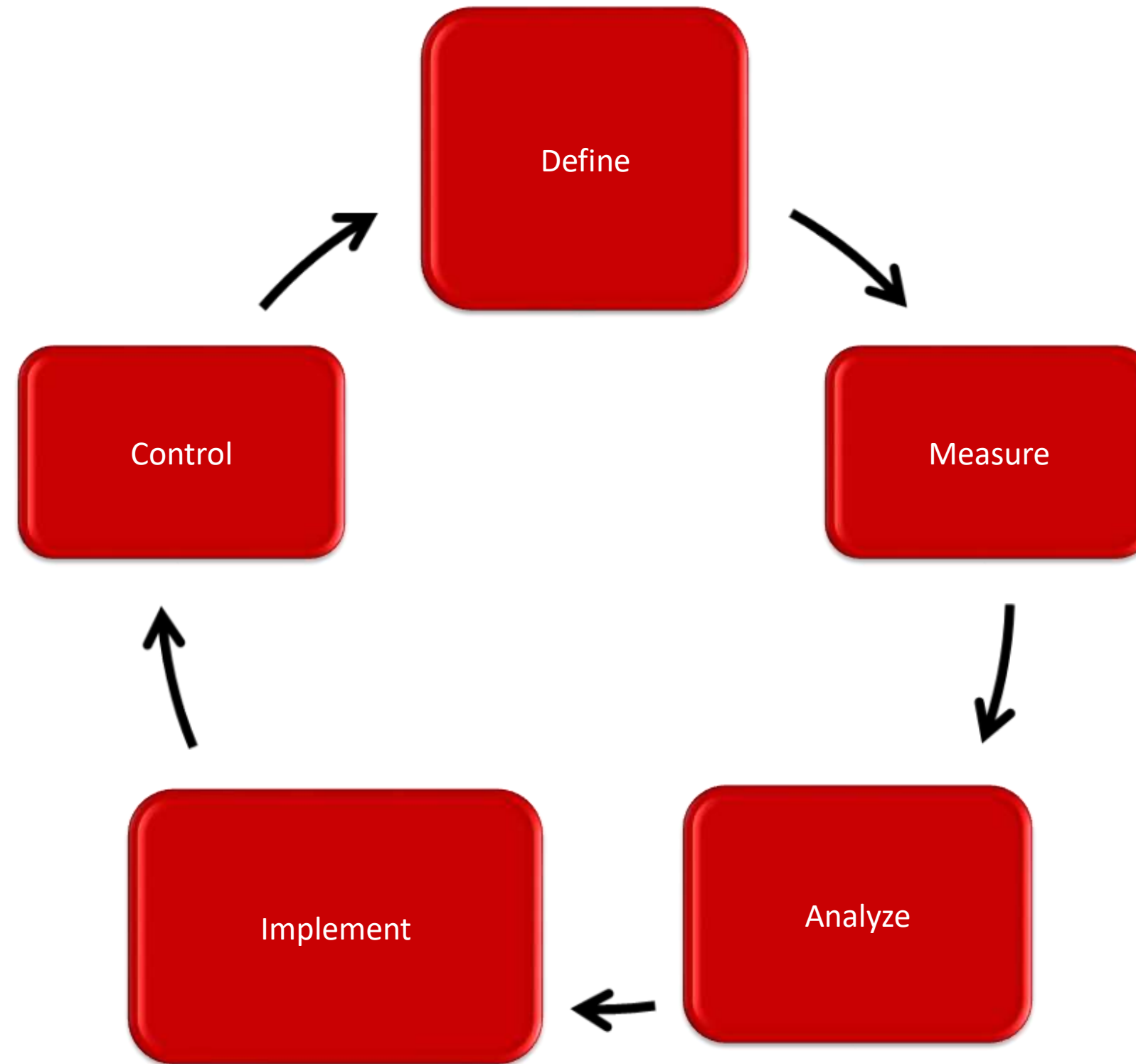
## Use of Information Technology



- GPS based System to track transportation on real time
- E- Fleet System ( Logistic Support Services )
- Implementation of ERM
- Video Conference facility with customers & project sites

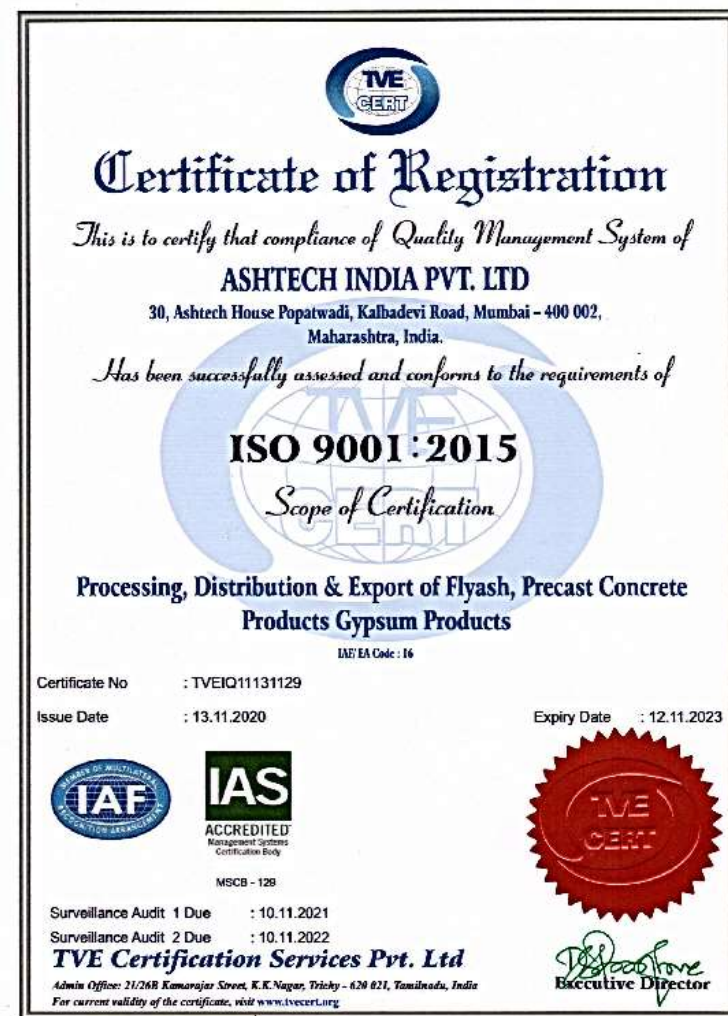
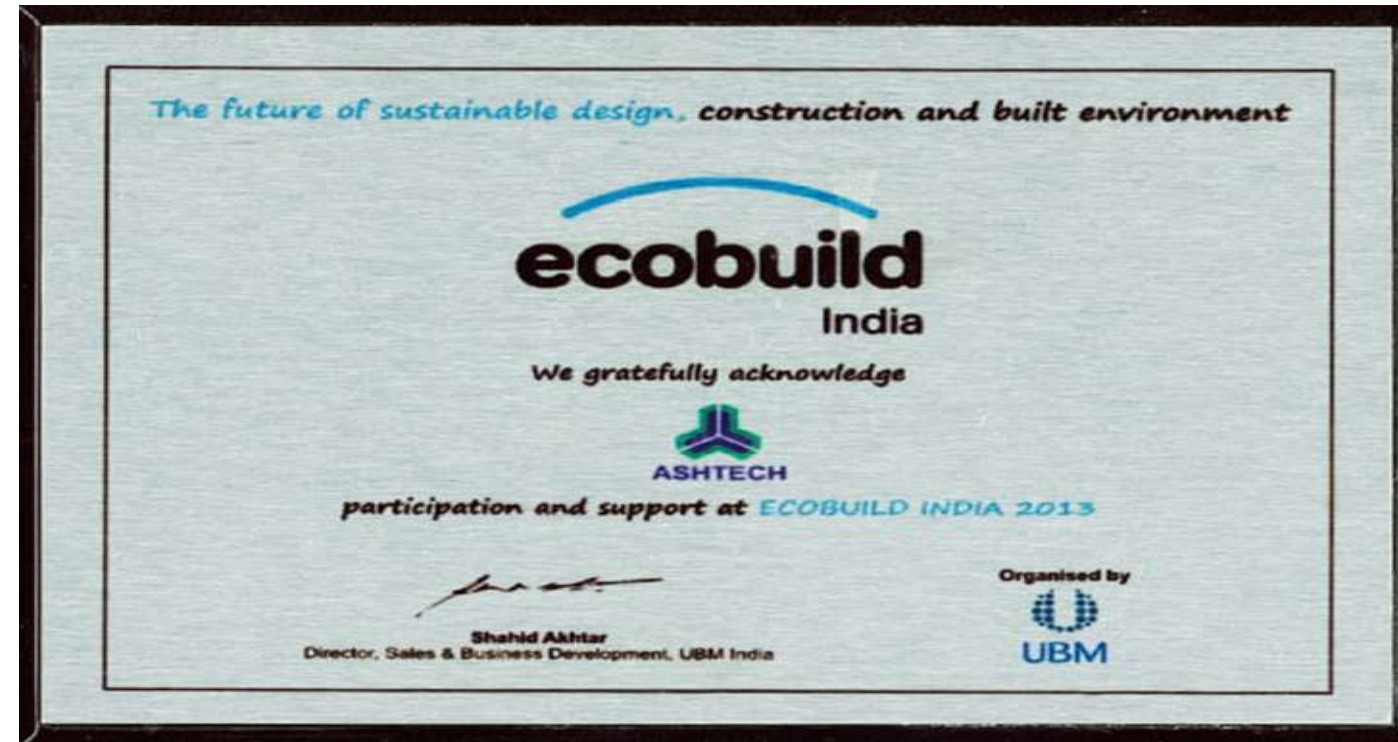
**Above Systems improved Service delivery , Customer satisfaction , Efficiency of operations**

# Business Improvement - System Approach





# Awards and Accolades





# Awards and Accolades





# OUR JOURNEY (1/3)



Started SATISH CARRIER – specialized transportation of Fly Ash from Ukai to Magadall

1994

Started Marketing Fly Ash in Mumbai

1996

Tied up with Dahanu Thermal Power station for Fly Ash utilization

1996

Exported first Fly Ash consignment to Middle East

2000

Installed Pilot plant to improve Quality of Fly Ash

2002

Signed Agreement with ETPS Chennai for 100% utilization

2006

Set up first RMC Plant at Pune as Forward integration

2007

Tied up with power plants of Gujarat for export of Fly Ash

2007

Installed Model Classifier at Dahanu to extract fine Fly Ash

2008

Expanded capacity of RMC

Installed PDFACS System to convey fly ash and distribute it to RMC plants & Cement plants

Establish Bulk Terminal for fly ash at Hossu

Exported Large quantity fly ash from NTPC Simhadra

Started Light weight concrete block manufacturing through CLC route

2009

# OUR JOURNEY (2/3)



Commissioned first Cement blending unit for producing PPC by blending route

2012

Started 220 TPH Aggregates processing plant near Mumba

2013

Expanded RMC Capacity by installing 7th Plant

2013

Started Another Cement Blending Plant near Udupi

2014

Started 8th RMC plant at Mumbai

2015

Commissioned second Fly ash grinding unit near Mumbai

2009

Manufacturing facility for pavers was established

2010

Started solid concrete block manufacturing plant

2010

Started 220 TPH Aggregates processing plant at Pune and Wada

2011

Established Bulk terminal at Ras Al Khaimah

Signed with NTPC Delhi for exclusive collection and distribution of fly ash from Badarpur TPS

Installed Pneumatic conveying system and silos for fly ash at Badarpur

Commissioned American make of fly ash classifier

Installed and Commissioned first fly ash grinding unit at Dahanu

2009

# OUR JOURNEY (3/3)



Commissioned first in India, Ultrafine production facility using Spanish Classifier

2016

Started operation of Dahej and Hazira thermal power plants and achieved 100% utilization from day 1

2017

Started operation of GKEL & GWEL thermal power plants to achieve 100% utilization

2018

Started operation of LPGCL Thermal Power Plant to achieve 100% utilization

2019

Started Specialty Chemicals Division Started to focus on Construction Chemicals

2022

Bagged order from Rattan Power Amravati for Pneumatic Conveying of Fly Ash to Silos at the Railway Siding

2021

Started Rail Transportation of Fly Ash in a large scale from various Power Plants Simultaneously

2020



Thank You