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Product Liability Concerns

Myths and Realities

Introduction

In India, coal based thermal power plant has been the backbone of power generation. Recent data also shows that about 60% of India's installed generation capacity is from thermal. Fly ash generation recorded during FY 2020-21 is about 232 million tons and utilisation of about 214 million tons. Though utilisation of fly ash has been a subject of great concern for almost the past two and half decades, the utilization has picked up during the last 10-15 years. The fly ash utilisation has progressively increased from about 9.6% during year 96-97 to about 92% during year 2020-21.

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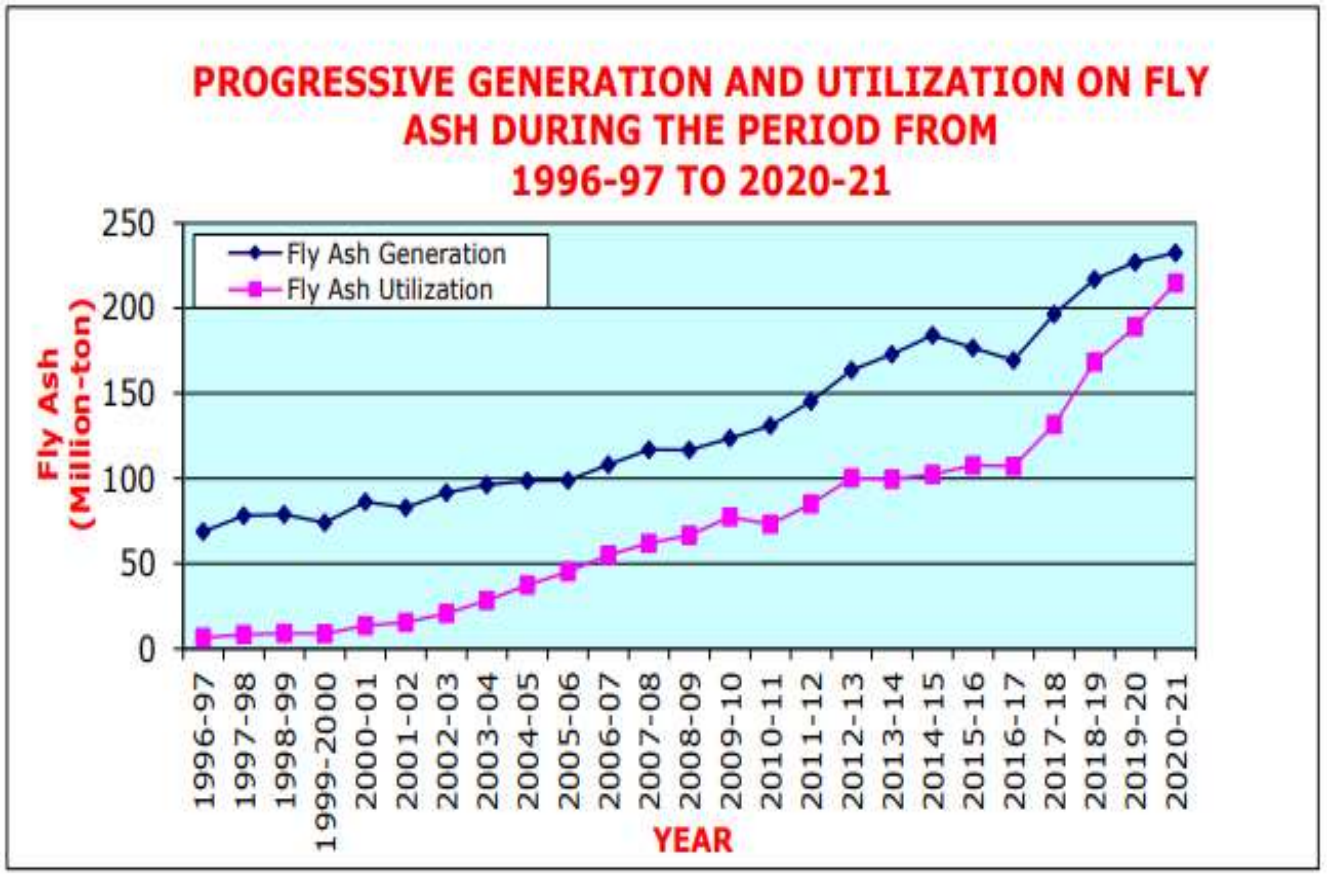
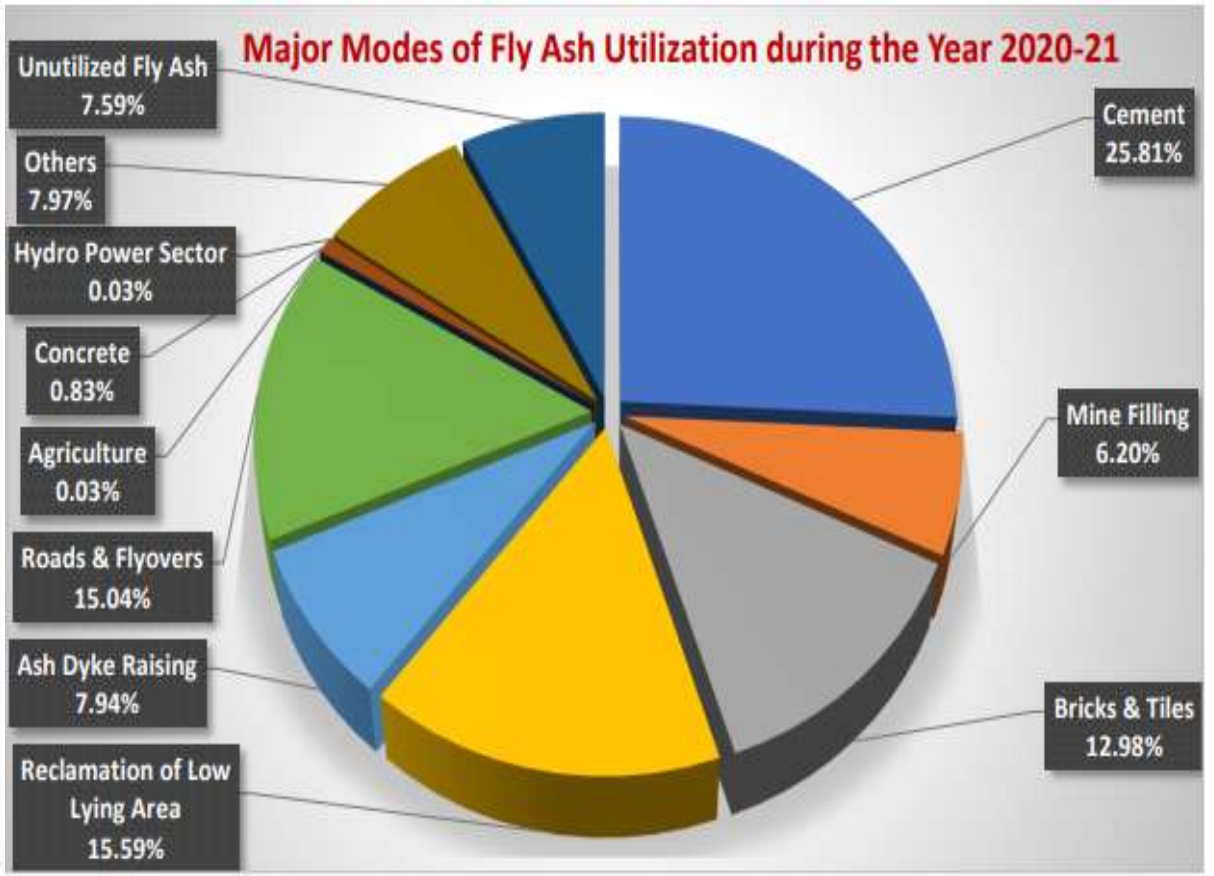
Introduction

Fly ash generation and utilisation trend in India -





Source : CEA report, Aug 21

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Fly Ash Utilisation

Managing the huge quantity of fly ash generated from coal based thermal power plant is a challenge.

The power plant location also plays a crucial role in achieving the utilisation percentage significantly subject to the availability of nearby cement plants, infrastructure development projects and nearby abandoned mines.

Myths and Realities :

Earlier fly ash was regarded as waste products but now it has proved to have a significant value added potential for many commercial applications and is encouraging innovation to utilize fly ash as a value added product. Effective utilization of fly ash not only reduces disposal problem but also leads to sustainable development.

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Fly Ash Utilisation at PPGCL

Prayagraj Power Generation Company Limited is a 3x660 MW (1980 MW) Thermal Power Plant at Prayagraj, Uttar Pradesh. The station was commissioned in May 2017.

- PPGCL is committed to utilise fly ash in a meaningful manner which promotes resource conservation.
- PPGCL has a tie up with about 20 different cement manufacturers, traders and brick manufacturer and are utilising fly ash.
- PPGCL signed a MoU with ZaaK technologies GmbH to jointly developed India's first Lypors pilot manufacturing plant at PPGCL.

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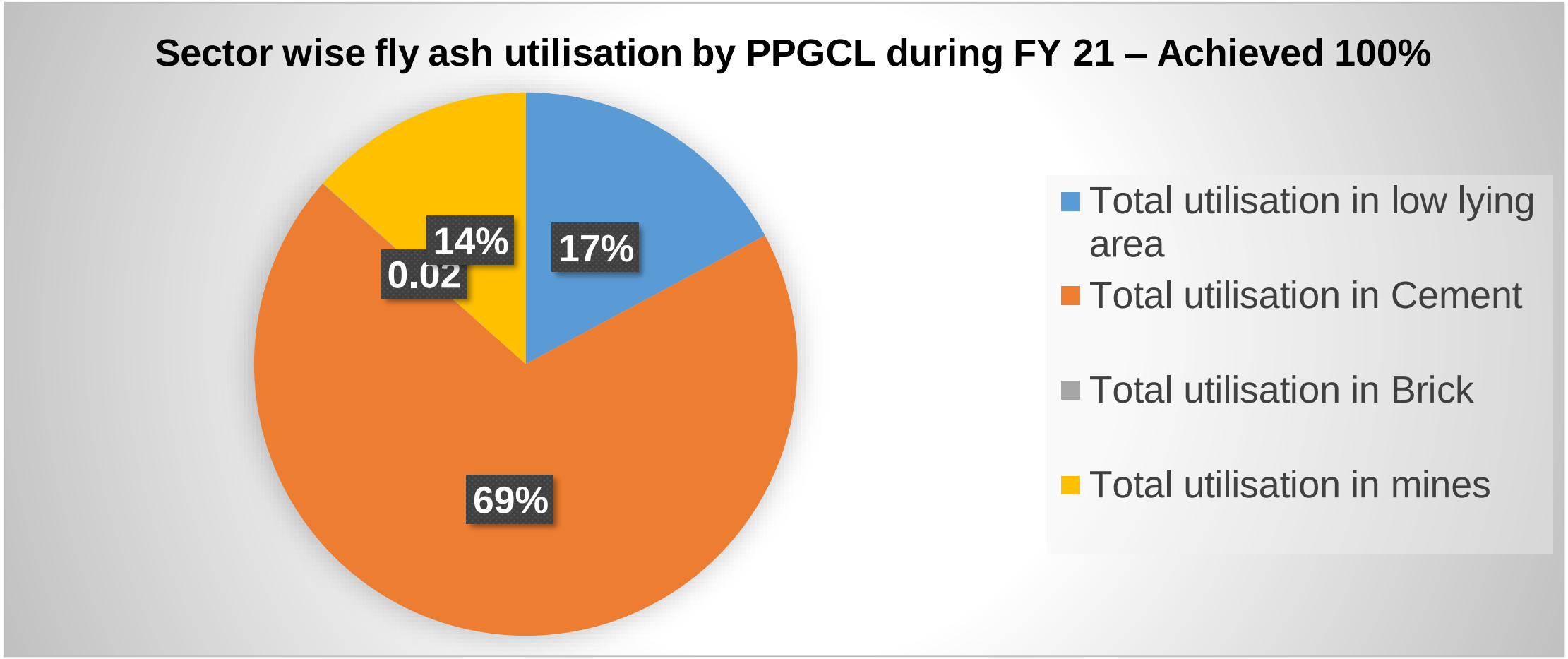
Fly Ash Utilisation



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Fly Ash Utilisation – Infrastructure

- The fly ash storage capacity and infrastructure available are –

  # 2 Nos Fly ash Silos each of 6000 Ton capacity

  # 2 No Fly ash Silo of 50,000 Ton capacity each. 1 is under operation and another under commissioning

  # 2 Nos of ash pond having total capacity of 34.30 Lakh M3.

  # Supply of fly ash to Ultratech cement through silo’s pneumatically.

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Fly Ash Utilisation – Infrastructure

Bulker loading through telescopic chute

50 KT silo

6 KT silo

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Fly Ash Utilisation – Infrastructure

Established fly ash brick /paver block unit

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Fly Ash Utilisation – Sustainable utilisation plan - Innovation

- In process of setting up a pilot plant to convert pond ash to Lypors. MoU signed with ZaaK Technologies, Germany and the trial will start from May- June'22 and will take around 8-9 months. After successful trial utilisation of fly ash can scale from 50,000 - 5 lakh ton. It can be used in producing lightweight, high strength and thermal insulating building material derivatives. It can be produced in different size, shape, strength and porosity.
- This plant will be set up by Zaak Technologies GmbH.

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Fly Ash Utilisation – Sustainable utilisation plan - Innovation

Lypors is a patented sand material made from upcycling, fly ash and other residue used to make light weight concrete, motor, plaster and other building material

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Fly Ash Utilisation – Sustainable utilisation plan - Innovation

Value Propositions to Different Stakeholders

End User

- Good value for money
- Excellent thermal insulation of building
- 1:1 replacement with aggregates

Industrial by-product Producers

- Savings
- Compliances
- New business opportunity

Environment

- Better air quality
- Saving water
- Conserving natural resources

Building & Construction Industry

- Premium quality
- Good value for money
- No double inventory

Investors

- Large market size
- Highly scalable
- Circular economy

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Fly Ash Utilisation – Sustainable utilisation plan - Innovation

Key Applications of Lypors


RMC


Highway


Blocks


Pavor block


Concrete panels


Plaster


Joints mortar


Tiles adhesive


Flooring


Roof tiles

Lypors™ is premium sand material which can be used in several applications

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Fly Ash Utilisation – Reclamation of Low Lying Area

Low lying area within plant premises is reclaimed using pond ash with soil cover. Approx. 24000 saplings of forest species planted on the land to develop it as a green belt area. Also, recorded survival rate of around 90 %.

Fly Ash Utilisation –

Use of fly ash brick and blocks in all construction activities. Incorporated in contract document to use only fly ash brick.




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Thank You!