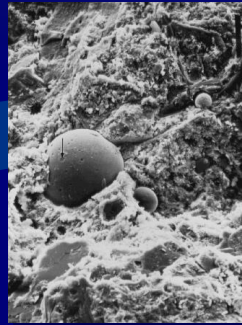


Current Fly Ash Facts – an Update



Arizona Pavements/Materials Conference

Tempe, AZ

November 16, 2017

American Coal Ash Association



About ACAA

- American Coal Ash Association was founded in 1968 as the National Ash Association
- Headquartered in Farmington Hills, MI
- 140 members – utilities, marketers, contractors, consultants, equipment suppliers, and academics
- Part of the World Wide Coal Combustion Products Network



Our mission

- The mission of the ACAA is to encourage the beneficial use of coal combustion products in ways that are **protective of the environment**, **technically appropriate**, **commercially competitive**, and **supportive of a more sustainable society**.



What is Coal Ash?

- When coal is burned for the production of electricity, approximately 5% to 10% of each ton of coal is not combusted leaving residual materials to be managed. These materials are either disposed into landfills or ash ponds, or sold into “beneficial use” (a.k.a. recycled)



Main types of “coal ash”

- Fly Ash – cement/concrete
- Bottom Ash - cement
- Boiler Slag
- Synthetic Gypsum - cement



Is Fly Ash Supply Vanishing?

- Coal is now 30% to 35% of the fuel producing electricity
- Coal-fueled plants are being closed or converted at a rapid pace
- Regulations have encouraged generators to move away from coal



Demand is Growing

- **ASR** is wide spread – mitigation options are limited, some very costly
- **High-performance concrete** requires use of SCMs
- **High volume fly ash mixes** are more widely accepted
- **Supply** of fly ash is more than all other SCMs combined



Supply and Demand Facts

- Production of fly ash outstrips use in concrete annually (millions of tons)

✓ 2016: 107.4/**37.7**/22.6/**14.3**

✓ 2015: 117.3/**44.3**/24.0/**15.7**

✓ 2014: 129.7/**50.4**/23.2/**13.1**

✓ 2013: 114.7/**53.4**/23.3/**12.4**

✓ 2012: 109.8/**52.1**/23.0/**11.8**



Why are there regional shortages?

- Power plant operations – combustion injection issues
- Timing – construction demand opposed to power plant operation
- Storage and logistics – capturing production and movement of product



The Future for Coal

- Generation of power from coal fueled power plants will remain about the same for the next 20 years
- U.S. has **over 250 years of proven coal reserves** in the ground
- Nuclear plants are nearing retirement
- Grid reliability is a serious concern



Gas Facts

- Transmission is limiting growth
- Export of natural gas will expand quickly and affect U.S. pricing
- ENGOs have natural gas on their hit list



New Fly Ash Supplies

- Import activity in coal combustion products is growing
- Reclaiming fly ash from ponds and landfills is being investigated and initiated
- Over 2.5 billion tons of CCP is stored in ponds and landfills across the U.S.



Questions?



American Coal Ash Association

Thank You

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