Reclaiming Coal Ash for Beneficial Use

American Coal Ash Association
Association of State and Territorial Solid Waste Management Officials
Anaheim, CA
April 25, 2018
American Coal Ash Association

- Founded in 1968
- Headquartered in Farmington Hills, MI
- 140 members – utilities, marketers, contractors, equipment suppliers, consultants, academics
- Active with similar organizations around the world
ACAA Mission

The mission of the American Coal Ash Association is to encourage beneficial use of CCP in ways that are

- *environmentally responsible*,
- *technically sound*,
- *commercially competitive*,
- *supportive of a sustainable global community*. 
Fly Ash for Concrete

• Mostly comprised of silica, alumina and calcium compounds, fly ash has mechanical and chemical properties that make it a valuable ingredient in a wide range of concrete products.

• Concrete made with coal fly ash is stronger and more durable than concrete made with cement alone.

• By reducing the amount of manufactured cement needed to produce concrete, fly ash accounts for more than 14 million tons of greenhouse gas emissions reductions each year.

• American Road and Transportation Builders Association estimates use of fly ash in concrete roads and bridges saves an estimated $104.6 billion over 20 years.
EPA on February 7, 2014, released an exhaustive study re-affirming support for two major uses – fly ash in concrete and FGD gypsum in wallboard:

- “…environmental releases of constituents of potential concern (COPCs) from CCR fly ash concrete and FGD gypsum wallboard during use by the consumer are comparable to or lower than those from analogous non-CCR products, or are at or below relevant regulatory and health-based benchmarks for human and ecological receptors… EPA supports the beneficial use of coal fly ash in concrete and FGD gypsum in wallboard. The Agency believes that these beneficial uses provide significant opportunities to advance Sustainable Materials Management (SMM).” [http://1.usa.gov/1blyP62](http://1.usa.gov/1blyP62)
9 Years – Fly Ash in Concrete

- 2008 - 12.6 million tons
- 2009 - 9.8 million tons
- 2010 - 11.0 million tons
- 2011 - 11.8 million tons
- 2012 - 11.8 million tons
- 2013 - 12.3 million tons
- 2014 - 13.1 million tons
- 2015 - 15.7 million tons
- 2016 - 14.4 million tons
Fly Ash in 2016

- Total fly ash produced: 37.8 m tons
- Total fly ash used: 22.6 m tons (59.8% of production)
- Fly ash use in concrete: 14.4 m tons (38.1% of production)
- Fly ash use in cement: 2.7 m tons
Changing Coal Fleet Poses Challenge

- As more coal-fueled power plants close, regional disruptions in coal fly ash supply have emerged, increasing user interest in strategies such as imports of foreign ash.
- U.S. beneficial use industry has begun deploying strategies and technologies for reclaiming ash from active and closed disposal units to meet market demands and continue to grow utilization.
- These developments present a long term opportunity to permanently remove large volumes of coal ash from landfills and impoundments for safe and productive uses such as cement and concrete production.
Beneficiation and Reclamation

- Wide range of technologies and strategies available depending on material and site characteristics
- Projects already undertaken include:
  - SEFA - Georgetown, SC
  - WE Energies - reburn of high carbon fly ash
  - WE Energies - harvest of bottom ash for road base
  - Boral – Washingtonville, PA
ASTM Standard Guide Development

- ASTM Subcommittee E50.03 on Beneficial Use developing Standard Guide for “harvesting coal combustion products stored in active and inactive storage areas for beneficial use,” including sections on:
  - Referenced Documents, Terminology, Significance and Use
  - Project Planning and Scoping
  - Background Review of CCP Storage Areas
  - Detailed Characterization of CCP Storage Areas
  - Planning and Scoping of CCP Storage Areas
  - Detailed Design and Approval (if required) of CCP Storage Areas
  - Implementation of CCP Storage Areas
Thank You!

AMERICAN COAL ASH ASSOCIATION

Thomas H. Adams

(720) 870-7897

info@acaa-usa.org