PMI's Ash Recycling Solutions Using Proven Technology

The Problem:

When coal is burned in a power plant, it leaves behind ash – some of which is carried upward by the hot combustion gases of the furnace (fly ash). The highest volume and highest value use for this fly ash is in concrete as a partial Portland cement substitute. Regulations requiring coal-powered generators to reduce emissions (NOx, SO_2, Hg) have caused fly ash to become unsuitable for use in concrete. New regulations threaten to dramatically increase the cost of disposal. It's time for PMI's solutions!

The Carbon Burn-Out (CBO) process minimizes direct disposal costs by diverting fly ash from disposal in landfills to reuse by converting waste ash into a useful product.

"The CBO ash provides us with a consistent quality material that helps us to provide a superior quality product for our customers."

Michael Van Sickel
General Manager
Branscome Concrete, Inc.

PMI's Key Benefits

Successfully managing fly ash is an increasingly important requirement. PMI's proprietary technologies for ash recycling provide numerous benefits for power plants, including:

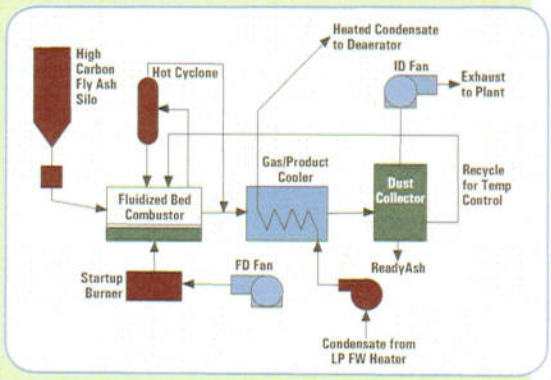
- Risk Management: Less ash in an on-site or off-site landfill or pond is key. 100% of CBO's ash is reused.
- Zero-Waste Process: Unlike other ash management solutions, CBO has no solid waste stream. Its only products are premium quality ReadyAsh™ and recovered heat.

- Efficiency Improvement/Green Heat: CBO recovers the residual carbon's valuable heat, measurably increasing the host power plant's generation efficiency by producing the equivalent of 2 to 3 megawatts of power.
- Minimized Overall Costs: CBO helps reduce costs of power plant operations by minimizing direct disposal costs and future landfill costs without requiring capital investment by our clients. We can build, own and operate our ash processing technology at the power plant site.
- Multiple Sourcing Options: Remote ash sources can be readily accommodated and processed through the CBO process, reducing direct disposal costs from a number of plants.
- Flexible Fuel Blending: CBO provides the opportunity for plants with scrubbers to blend fuels like petroleum coke with coal, providing additional fuel cost savings without forcing landfilling of the resulting ash.
- CO_2 Credits: CBO fly ash is being certified as a partial replacement for Portland cement. Unlike our competitors, we don't have ***any*** waste stream. PMI can help!

The Sustainable Solution: PMI's Proprietary Process

CBO is a patented technology designed to maximize ash reuse in concrete. The process is fueled solely by the residual carbon. Heat recovered from the CBO process is returned to the power plant.

The CBO process is summarized as follows:



- High-carbon, raw ash is pneumatically conveyed from the power plant's existing silo(s) to the CBO silo.
- An FD fan provides fluidization and combustion air to the CBO fluid bed combustor. An ID fan keeps the combustor freeboard pressure slightly sub-atmospheric.
- Feed ash is metered into the combustor.
- Carbon burns in the combustor on a continuous basis.
- Heat exchange occurs between the hot product ash plus flue gas and the condensate from the power plant. Other heat recovery methods are also available.
- ReadyAsh is separated from the flue gas by a cyclone and bag house.
- ReadyAsh is pneumatically conveyed to the storage and load-out area.

PMI

CBO ECONOMICS
SELL MORE. LANDFILL LESS. LOOK GOOD.

CBO is the superior choice for your ash management needs. For more information about PMI's solutions, please contact our team at 1.866.9FLYASH (935.9274) or visit our Web site at pmiash.com.