Customizing Beneficiation for Flyash Physical Characteristics and Market Drivers

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ABSTRACT

The need to reutilize coal flyash is well established. Historically, some flyash has been beneficiated to remove unwanted characteristics and meet product or buyer specifications. Landfill costs, liability concerns, environmental regulations, and revenue opportunities increasingly pressure most flyash producers to recycle the maximum amount of flyash. In addition, power producers have experienced deterioration in flyash quality due to low NOx burners and ammonia based NOx controls, as well as the use of supplemental fuels. Flyash can no longer be viewed as merely a static byproduct of coal combustion. It must be intentionally improved, "manufactured", to meet buyer specifications. Several factors demand that beneficiation methods be customized for different flyash characteristics and markets. Physical and chemical characteristics enhance certain processing technologies and limit others. Market drivers, such as fuel costs, landfill costs, and revenue opportunities, also point toward some beneficiation methods and away from others. Today's dilemma is that few processing technologies are fully commercial and those tend to be cost effective in specific, rather than general situations. Customizing beneficiation methods to address flyash characteristics and market drivers yields solutions that might otherwise be neglected. Customizing allows a comprehensive integration of processing technologies, specific flyash properties, and local market drivers to "manufacture" the desired products.