

Regulatory Hurdles and How to Assess and Partner to Succeed

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Our shared goal is to promote the re-use of coal combustion products. The collective efforts by many reading this paper have yielded considerable progress toward achieving this goal. As we look at the future regulatory landscape, we believe that forward progress toward this goal will require focus upon a broader array of regulatory issues and stakeholders not traditionally discussed within the ash world. Casting our net more broadly, what this encompasses and what the results can yield, will be discussed below.

One caveat, we are a technology company owned by a utility. We work closely with ash marketers in a variety of arrangements. We ardently admit that our perspective may be skewed. Please forgive us for this in advance if it doesn't match how you see the world. We welcome your comments.

As part of our discussion today, we will try and set the stage on how environmental regulations in the various media, waste, water and air, have and will continue to have a profound impact on ash. We will examine each in turn.

The waste area is a very common area of focus for ash re-use. The regulations contain an exemption for coal combustion products (CCPs) that allows CCPs to be exempt from federal regulation as a hazardous waste. This exemption is known as the Bevill Amendment and is an attachment to the Resource Conservation and Recovery Act (RCRA). The Bevill Amendment required the Environmental Protection Agency (EPA) to "conduct a detailed and comprehensive study and submit a report on the adverse effects on human health and the environment, if any, of the disposal and utilization of fly ash waste, bottom ash waste, slag waste, flue gas emission control waste, and other byproduct materials generated primarily from the combustion of coal or other fossil fuels." Eight years after passage of the Bevill Amendment, EPA issued a Report to Congress. The Report tentatively concluded that fly ash, bottom ash, boiler slag, and flue gas desulfurization, the four high-volume coal combustion wastes from electric utility generation, generally do not exhibit hazardous characteristics. In the Report the agency encouraged "the utilization of coal combustion wastes as one method for reducing the amount of these wastes that need to be disposed to the extent such utilization can be done in an environmentally safe manner." The early 1990s brought a final regulatory determination from EPA on the four high-volume coal combustion wastes. The agency concluded that these wastes should not be regulated as hazardous waste under RCRA Subtitle C. No re-examination by EPA of their determination on regulating the four high-volume coal combustion wastes as a solid waste and not a hazardous waste is expected in the next few years. The continued regulation of fly ash

and bottom ash as a solid waste and not a hazardous waste remains one of the most important and positive impacts to encourage the reuse of ash.

There is a recent and interesting item to note regarding ash and its regulation by the EPA. On February 9, 2004 nearly 130 environmental groups filed a joint Petition, called the Hoosier Petition, with the Environmental Protection Agency calling for the EPA to “immediately” prohibit the placement of coal ash from coal-fueled power plants into unlined pits, ponds and other man-made structures. The petition alleges that a number of sites across the United States have been “damaged” by such placement causing contamination of surface water and/or groundwater. The petitioners asked for the prohibition to begin immediately and continue until the EPA adopts regulations to prevent the alleged contamination. To date EPA has not responded to the petition and we do not expect a response any time soon. In fact, we believe if EPA does respond it will be in support of the re-use of ash based on their previous determinations. The support of the beneficial use of CCPs is the fundamental purpose of the Coal Combustion Products Partnership (C²P²).

Moving our attention to water regulations, there are several items in play that could impact ash and the electric utilities.

The first item deals with selenium, a heavy metal, and how it is measured by industries that discharge a wastewater that contains selenium into the ponds, streams, and rivers of the country. Routinely, EPA examines various pollutants, how they are measured and what concentration levels that have been identified as safe for the environment. EPA has recently published a Draft Aquatic Life Criteria Document for Selenium. The draft criterion proposes a chronic fish tissue concentration for selenium. Those most likely impacted by the draft criterion are coal-fired utilities and western mining interests. If the criterion is finalized, the coal fired utilities could have their ash pond discharge limitations modified by permitting authorities aiming to achieve compliance with a fish tissue-based standard. To meet such standards, utilities may have to modify their current process on how ash is handled and disposed. In lieu of ash ponds or even landfills, the utilities will need to seek new and innovative ways to use ash. This criterion could be in play for the regulated community within the next five years.

The second water item deals with what are called categorical guidelines for industries. The guidelines, known as Effluent Guidelines, set forth discharge limitations on pollutants that various industries should be able to achieve based on the technology they use to treat wastewater prior to discharging it to a pond, stream, or river. EPA intends to undertake a detailed analysis of the steam electric industry as part of its development work on the 2005-2006 Effluent Guidelines Plan. The detailed analysis, however, means that the Agency will be seriously considering whether the steam electric effluent guidelines, should be revised. These guidelines are how permitting authorities determine ash pond limitations for steam electric utilities (coal-fired utilities). The Agency is considering whether the steam electric effluent guidelines should be revised for several reasons. First, the steam electric guidelines are more than 20 years old. EPA says that guidelines that are seven years old or less normally should not be a

high priority for revision. But the steam electric effluent guidelines are well beyond that window, and only a few industries have guidelines that are as old as steam electric effluent guidelines. Second, EPA continues to rank the steam electric industry very high for estimated loadings of toxic pollutants, based on both Permit Compliance System and Toxics Release Inventory data. Third, in EPA's latest Effluent Guidelines Plan, released in early September, EPA listed the steam electric industry as one of a handful of industries that should be subject to further study and evaluation for possible revision. Fourth, since development of the current steam electric guidelines, there have been significant technological advances in wastewater treatment. If the steam electric effluent guidelines are revised, the discharge limitations for ash ponds will be more stringent. The EPA will never relax a limitation. These more stringent limitations will also force the utilities to modify their current process on how ash is handled and disposed. Again, in lieu of ash ponds or even landfills, the utilities will need to seek new and innovative ways to use ash.

Finally, environmental regulations in the air quality arena are affecting ash re-use just as they're affecting all other aspects of coal-fired power plant operation. The most widespread air quality regulations already affecting ash re-use are the NO_x rules – acid rain phase 2 and the NO_x SIP call – and consent decrees reached under EPA's New Source Review enforcement initiative. All of these require combustion controls retrofitted on many units and the installation of either Selective Catalytic Reduction (SCR) or Selective Non-Catalytic Reduction (SNCR) systems on a smaller population of existing units. The combustion control systems increase the carbon content also known as Loss on Ignition (LOI), frequently to levels that make the ash unmarketable. The SCR and SNCR systems add ammonia to the ash, which also could impact the marketability of ash. Both of these issues are only going to get worse as additional NO_x rules take effect. These additional rules include the federal Best Available Retrofit Technology (BART) program which requires certain plants emitting pollutants that contribute to visibility degradation to install BART as part of state strategies for meeting the regional haze rule. BART applies to facilities, including utility boilers, built between 1962 and 1977 that have the potential to emit more than 250 tons a year of visibility-impairing pollution. There are also other air rules which include state programs to address visibility issues, state rulemakings to address new ozone non-attainment problems, and finally the Clean Air Interstate Rule (CAIR) or Clear Skies legislation. The Clean Air Interstate Rule, proposed in January, 2004, focuses on 29 states in the Eastern US and the District of Columbia whose SO₂ and NO_x emissions are significantly contributing to fine particle and ozone pollution problems in other downwind states. Once fully implemented, the proposed CAIR would reduce SO₂ and NO_x emissions by 70 percent and 65 percent respectively (from 2002 levels).

Looking at the air rules on the horizon – no pun intended – the CAIR rule or Clear Skies legislation and a number of state initiatives are likely to force utilities to start thinking seriously about mercury emission controls. For some, this will simply be another reason to implement SCR as a NO_x control technology, due to the co-benefits that the CAIR rule anticipates. For others, more innovative technologies such as activated carbon

injection may be necessary. Use of these technologies will lead to previously unknown issues with ash re-use and will necessitate similarly innovative solutions.

As we have now painted the future landscape of the ever changing regulatory environment, a changing environment that can and or will have an impact on how ash is used, disposed of and viewed, we will need to look to how we can continue promote the re-use of ash as well as increase its re-use through the ever changing landscape. To do so we need to expand our focus and efforts at promoting ash-re-use to a broader array of stakeholders not traditionally discussed within the ash world. By expanding our focus, we should hopefully achieve an increased desire by end-users to re-use ash. A grassroots type of effort that could positively impact the continued regulatory support of ash re-use.