

## Coal Preparation to Add Biomass to the Fuel Supply

Pre-combustion onsite treatment to prepare biomass can help coal fired boilers:

- Utilize available local biomass as an additional fuel
- Avoid reduced mill capacity and down-rating associated with burning untreated biomass
- Reduce maintenance costs from corrosion by significant reduction of hydrochloric acid gas creation
- Avoid slagging with proper selection and pretreatment of biomass

## The MacArthur Solution

MacArthur Energy engineers have developed a range of technologies to upgrade coal by adding biomass and removing moisture, Mercury, Chlorine while creating a homogeneous high value solid fuel. These techniques can be used to help commercial, industrial, and utility boilers operators to meet current and emerging EPA and state standards without the loss of mill capacity and other issues often associated with biomass co-firing.

MacArthur Energy has worked with a wide range of biomass sources including woody biomass, bagasse, straw, grasses and algae. Working with a number of purpose grown biomass cultivators, MacArthur Energy has learned how to prevent the production of slag causing alkaloids.

MacArthur Energy has invented and documented a number of advances in pre-combustion technology including significantly reduced complexity in

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off-gas management, reduced operating costs in moisture removal from algae harvests, cost effective treatment of biomass to remove Chlorine, which causes acid gases, before combustion. As such, MacArthur Energy has significant expertise and new IP in preparing and upgrading coal/biomass fuels to enhance efficiency and lower emissions.