

# From Black Liquor to Sludge: Converting a Recovery Boiler to a Bubbling Fluid Bed

Project Case History

**Boiler conversion extends asset life to meet plant's renewable energy needs.**

## Background

Conversion of the plant's unneeded recovery boiler as a bubbling fluidized-bed (BFB) power boiler provides an economic and environmentally sound solution to:

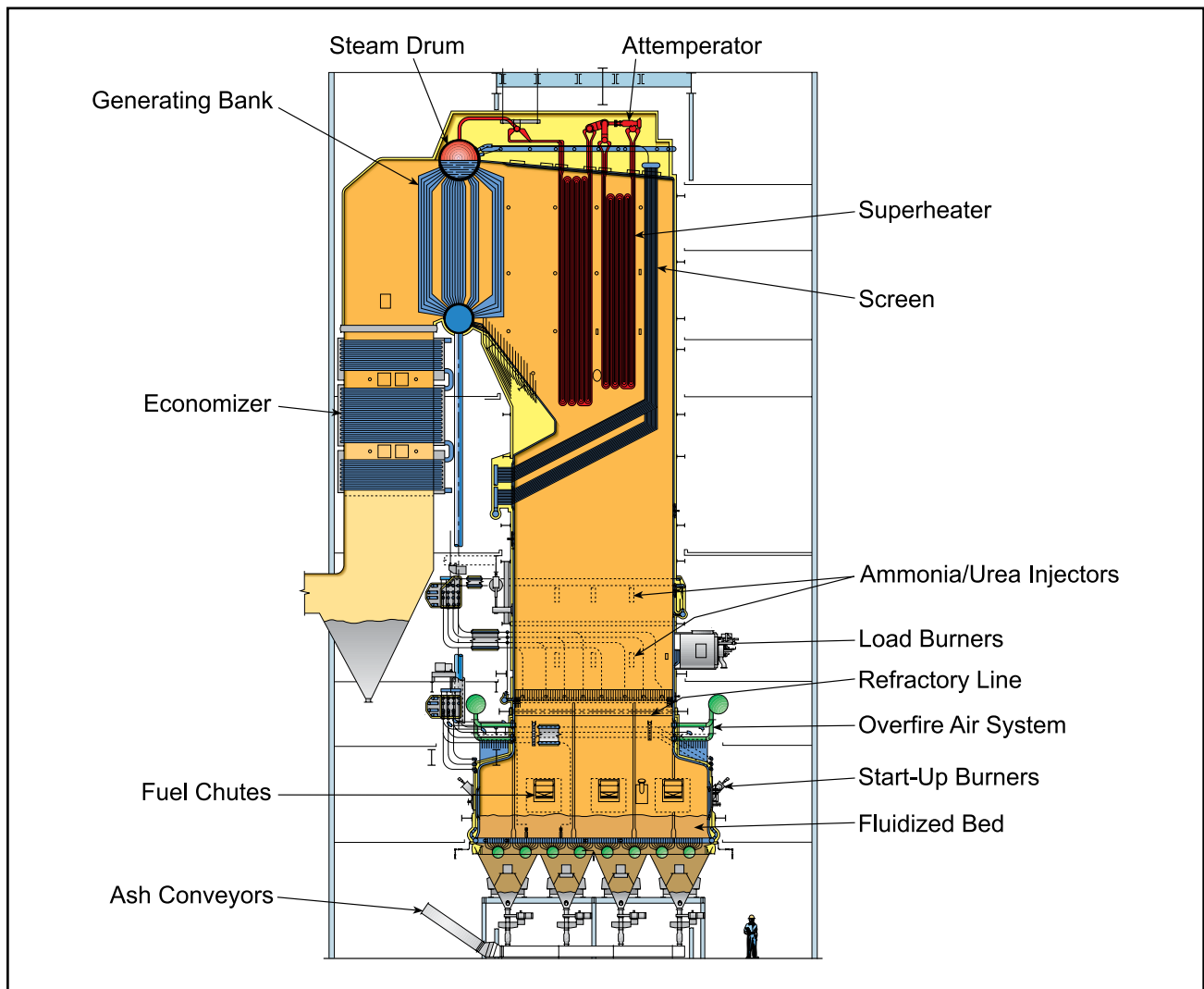
- Burn paper mill sludge, wood waste and tires to displace

other more expensive fossil fuels

- Enable existing boiler assets to be fully utilized, such as the upper furnace, superheater, boiler bank and precipitator
- Reduce landfill costs by utilizing mill sludge as a fuel source

## Solution: Reduce Capital Costs of a New Power Boiler Island

The Babcock & Wilcox Company (B&W) has extensive experience with boiler conversions and modifications, including extensive refurbishments of older recovery boilers to BFB



Converting a recovery boiler to B&W's open-bottom BFB design enabled the customer to continue operating a valued asset at a lower cost.

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conversion while reusing existing buildings and ancillary equipment.

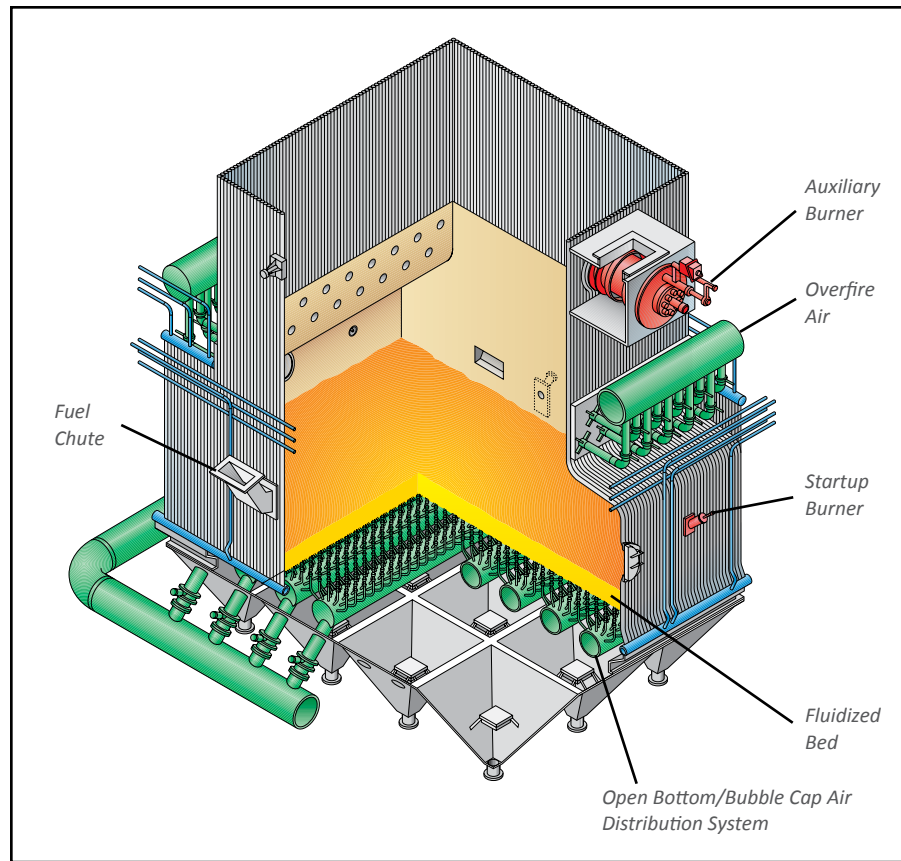
B&W's renewable solution – an open-bottom, BFB unit – addresses the project's special concerns and is helping the customer achieve its goals of increased steam flow, fuel conversions and reduced emissions.

### Unique Project Features and Challenges

- Utilizing bottom-supported BFB hoppers reduced boiler weight to top steel through use of B&W's innovative bed seal design
- Auxiliary equipment and construction activities required insightful planning and procedures to accommodate demolition, installation of new equipment and start-up

### Successful Outcomes

B&W's expert design was successful at converting the customer's boiler to a BFB with an increased



*B&W's open-bottom BFB furnace design provides complete debris removal with lower capital costs and maintenance expenses.*

steam flow of more than 65 % and meeting emissions requirements while utilizing waste and opportunity fuels available at lower costs than traditional fossil fuels at the plant.

This renewable project resulted in converting a once stranded asset into a valued asset at lower capital costs. The plant continues to serve as a model conversion facility.

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