

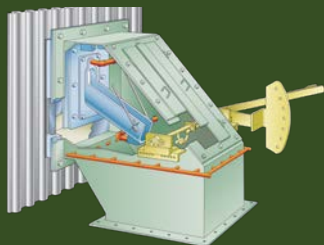
Pulp & Paper Industry Solutions



for more efficient, cleaner, safer, reliable mill operations

Meeting energy and environmental goals for maximized efficiency and reliability with minimized emissions requires a sourcing partner that understands the complex business and process requirements of the pulp and paper industry.

Babcock & Wilcox (B&W) developed the first Kraft recovery boiler with G.H. Tomlinson in 1929, and has continued to improve and deliver a best-in-class suite of products and services for the world's best-run mills. Providing the highest levels of quality, value, reliability and customer satisfaction is in our fiber.



Our innovations in design for 15- and 30-degree smelt spout assemblies offer safer, more optimum smelt shattering.

Technology Solutions

Boiler & Power Equipment

Recovery boilers	<ul style="list-style-type: none"> • Process: up to 10,000,000 lb/day (4500 t/day) dry solids • Reheat: Steam pressure up to 2600 psi (17.9 MPa)
Modular recovery boilers	<ul style="list-style-type: none"> • 300,000 to 800,000 lb/day (135 to 360 tons/day)
Fluid-bed boilers	<ul style="list-style-type: none"> • Circulating: up to 2,200,000 lb/h (277 kg/s) or greater • Bubbling: up to 1,000,000 lb/h (126 kg/s)
Industrial water-tube boilers	<ul style="list-style-type: none"> • 10,000 to 1,200,000 lb/hr (4.5 to 544.2 T/hr)
Other boilers	<ul style="list-style-type: none"> • Biomass, stoker, grate, pulverized coal or other boiler

Process Equipment

Cleaning systems	<ul style="list-style-type: none"> • Diamond Power® sootblowers and intelligent sootblowing control systems, SprayRod™ liquor gun cleaners, FlexRod and Rodding Robot™ port rodders
Combustion optimization	<ul style="list-style-type: none"> • FPS® gas or oil igniters, lighters and scanners • LM2100® auxiliary burners • Velocity Wing™ air flow dampers
Material handling	<ul style="list-style-type: none"> • Ash reinjection and handling systems • Dissolving tanks and tank vents
Equipment monitoring	<ul style="list-style-type: none"> • SmeltCam® infrared and visible range solid state cameras • GASTEMP® RB optical pyrometer

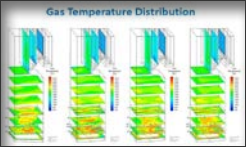
Environmental Equipment

Particulate	<ul style="list-style-type: none"> • Wet or dry electrostatic precipitators (ESPs) • Power/voltage controls including plates, wires, electrodes, rappers, doors, casings and hoppers • Pulse jet fabric filters • Multiclone® dust collectors
NO _x	<ul style="list-style-type: none"> • Selective catalytic reduction (SCR) systems • Selective non-catalytic reduction (SNCR) systems
SO ₂ and acid gases	<ul style="list-style-type: none"> • Circulating dry scrubbers (CDS) • Wet flue gas desulfurization systems / scrubbers • Spray dryer absorbers (SDA) • Dry sorbent injection (DSI) systems • Powdered activated carbon (PAC) injection systems

Services

Committed to the safe, successful and predictable execution of your project, we offer a wide range of expert services, including:

- Aftermarket services and parts
- Inspections, tuning, feasibility studies and engineering support
- Combustion Model for Process Recovery (COMO-PR™) boilers
- Code and standards applications
- Equipment installation, removal, modifications and repairs
- Operator training
- Project planning and management
- Construction and field service support



Proven Experience

Emergency Power Boiler Replacement

Louisiana, USA

After the mill's non-B&W power boiler caught fire and was destroyed, B&W was selected to rebuild a new steam generating unit on a tight schedule. Within a year, we engineered, supplied, constructed and commissioned the start-up of a 705,000 lbs/hr natural gas-fired industrial boiler.



Boiler and Environmental Upgrades

Quebec, Canada

We supplied a complete overhaul of the power and recovery boilers for the mill's restart. The project included replacing a portion of the recovery boiler's lower furnace, repairing and refurbishing the power boiler, and upgrading the precipitator, evaporators and tanks to improve operations and maintenance.



Furnace Bottom Replacement

New Brunswick, Canada

To address smelt leaks that forced downtime and unsafe conditions, we engineered, manufactured and constructed a replacement recovery semi-decanting-style floor, lowered to provide approximately 10 feet of frozen smelt coverage, and upgraded the evaporator for safer, energy-saving and more efficient operation.



Burners and Lighters Upgrade

Georgia, USA

To replace its recovery boiler's abandoned oil burners, B&W supplied a mill with three natural gas LM2100 load burners and Class 1 FPS gas lighters. The burners raise boiler pressure and supplement steam generation during the recovery process, eliminating the need for the mill's power boiler.





Service

Our processes and our technologies are proven. But it is the knowledge, passion and commitment of our people that set us apart. Our field service engineers are well-trained and sought after for their expertise in onsite support, including:

- Assessing the condition of and providing installation support for parts, including tubes, superheater loops, smelt spouts, black liquor guns, doors and openings, burners and lighters
- Optimizing equipment including superheaters, generating banks, economizers, upper and lower furnaces, and performing low odor conversions, capacity increases and more

Safety

The safety of our employees, teams, customers we serve and the customers they serve are always our highest priority. Personnel at every level participate in training through our "Target Zero" safety program, focused on creating and maintaining an environment that is incident- and injury-free.

Benefits of working with Babcock & Wilcox

OUR PEOPLE

You can count on our expert professionals who are committed to safety, integrity, communication and customer satisfaction.

OUR TECHNOLOGY

Our industry-leading power and environmental technologies for pulp and paper applications are tested and proven.

OUR TEAM APPROACH

We have a solid track record in successfully working with engineering, procurement and construction organizations on contracts from material supply to major capital projects.

OUR EXPERIENCE

We are experienced in delivering an integrated, customized solution to meet your needs against the most challenging turnaround requirements.

We are focused on earning your trust, meeting your goals and exceeding your expectations. We therefore embrace the highest standards to deliver on our commitments with innovative products and unparalleled service that add value to your operations.



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ENERGY | ENVIRONMENTAL

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For more information or to contact us, visit our website at www.babcock.com.