

Environmental Products and Services

Quality products and services to reduce environmental impact







Reliable power generation can be accomplished with minimal impact on the environment.



Babcock & Wilcox (B&W) is an innovator and industry leader in providing advanced emissions control equipment and technologies for the power generation industry. As an original equipment manufacturer, we have the expertise to efficiently integrate emissions control equipment into the entire steam generating system.

Since 1968, our research into the control of nitrogen oxides (NO_x), sulfur dioxide (SO_2), fine particulate ($\text{PM}_{2.5}$), mercury, acid gases and other air pollutants have led to many advancements in control technologies. These technologies are implemented on many installations worldwide, resulting in some of the lowest measured emissions.

Combustion and post-combustion systems are available for new boiler installations as well as for retrofit applications into existing power plants.



Spray Dryer Absorber Systems are licensed by B&W from GEA Process Engineering A/S for the GEA Niro spray dry absorption (SDA) process. Our customers benefit from high SO₂ removal efficiencies, high system availability, low capital costs, and low operation and maintenance costs, as well as the inherent capture of oxidized mercury.

Circulating Dry Scrubber Systems Through an exclusive North American license with Hamon Enviroserv GmbH, B&W provides a circulating dry gas desulfurization technology (also known as a circulating dry scrubber or CDS). CDS technology, designed to reduce SO₂ and other emissions, is ideal for smaller units firing medium to high sulfur coals or for units with site specific needs.

Wet Flue Gas Desulfurization Systems are

B&W's solution to achieving high SO₂ removal and system availability on utility boilers burning high sulfur fuels. Our results speak volumes about the efficiency, reliability and performance of our wet flue gas desulfurization (FGD) designs.

As a full-scope supplier we provide the absorbers, along with the reagent storage and preparation, dewatering, and other auxiliary equipment on a supply and erect, or engineer-procure-construct basis.



B&W's proven and advanced environmental equipment technologies have resulted in some of the lowest measured emissions in the industry.



Fabric Filters B&W provides cost-effective control of particulate emissions and opacity with our proven pulse jet and reverse air fabric filter technologies. Integrating fabric filters with our sorbent injection and FGD technologies provides high removal efficiencies of air pollutants in a variety of applications.

We have provided some of the largest fabric filters in the world. Innovative design features such as long bag technology, integral gas and dust distribution devices, as well as on-line maintenance capability provide benefits of increased reliability while achieving lower emissions.

Dust Collectors for Smaller Applications B&W's Multiclone® dust collector is the simplest and most efficient multiple tube cyclonic collector available, and can be applied to a variety of particulate sources or used as a pre-cleaner to lighten the dust load on a secondary collector.





Dry Electrostatic Precipitators B&W's particulate control experience began with the first electrostatic precipitator (ESP) installation in the U.S. in 1907. Our dry ESP combines the advantages of maximum collection efficiency and low operating and maintenance costs with extensive application experience. We also provide engineered upgrades, quality components and services to help keep your ESP operating at peak performance levels.

Wet Electrostatic Precipitators As a final filter, B&W's wet ESP provides the lowest overall emissions of fine particulate and acid mist. Our wet ESP system utilizes both intermittent and continuous washing for efficient cleaning. We provide a robust all-alloy wet ESP design and possess comprehensive knowledge to select the right materials.

Our wet ESP is based on a proven design approach and established market leadership in particulate control. System features include low operating and maintenance costs, and a flexible, stand-alone design that can be integrated with other pollution control devices.

Dry Sorbent Injection B&W's dry sorbent injection technology provides a low-cost solution to address acid gas (SO_2 , SO_3 , HCl) emissions. Systems are designed to inject hydrated lime, sodium bicarbonate or trona into the flue gas leaving the boiler. The technology is flexible and can be applied to utility, industrial or biomass boilers.



B&W has an unwavering commitment to developing new emissions control technologies through extensive research.

Mercury Control B&W has been actively involved in research and development, demonstration programs, and implementation of mercury control systems since the early 1990s. We have multiple solutions focused on integrating a variety of low cost technologies with other air quality control systems that may already exist at a power plant.

Our MercPlus™ fuel additive system is designed to enhance mercury emissions reduction and minimize the use of powdered activated carbon (PAC) at power plants using low chlorine coals. Our Absorption Plus (Hg)™ system is designed to inhibit mercury re-emission and to increase the total mercury captured and retained in a wet FGD system. By understanding the interrelationship between various technologies, as well as the co-benefits achieved with other air quality control systems, our solutions can save significant cost throughout the life of the plant.



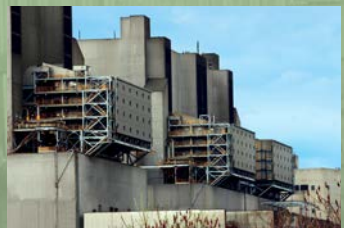


Low NO_x Burners and Combustion Systems Since 1971, B&W has provided more than 157,000 MW of low NO_x combustion systems (more than 10,600 burners) in both new and retrofit boiler applications. Our low NO_x burner technology has been successfully applied to units with varying fuel characteristics and boiler arrangements.

Our latest and most advanced designs, the DRB-4Z® burner and the AireJet® burner, offer significant NO_x reduction capabilities across the full range of boiler configurations and combustion firing patterns. All of our burners offer rugged construction for superior mechanical reliability and operation.

Selective Catalytic Reduction Systems B&W possesses extensive experience providing post-combustion NO_x control systems, both stand-alone and in combination with combustion modifications. We have completed or have contracted to design and supply more than 33,000 MW of selective catalytic reduction (SCR) systems, including both new boiler installations and retrofit applications.

Customized designs provide a comprehensive and integrated SCR package that considers reactor design, flue work, catalyst type and cleaning, ash management, temperature control, ammonia injection, mixer design, control systems, and balance of plant equipment.



B&W can provide an integrated package of emissions control solutions for single-point accountability and reduced risk.



Environmental equipment upgrade services and replacement parts from B&W can help you reduce operating and maintenance costs, improve reliability and safety, and enhance overall performance and efficiency.

Aftermarket Services Working with B&W means that you'll have a single-source supplier that provides quality products, performance upgrades with guarantees, and support services for all your environmental equipment, regardless of manufacturer.

B&W provides a total package of aftermarket services, including:

- Engineered equipment upgrades
- Start-up and commissioning
- Performance testing and monitoring
- Equipment tuning and optimization
- Field engineering specialists
- Inspection and laboratory testing services
- Aftermarket parts

Construction Through B&W's subsidiary, Babcock & Wilcox Construction Co., LLC (BWCC), specialized construction services are also available. Working closely with BWCC, B&W engineers design for constructability – an advanced construction concept that minimizes on-site labor requirements, increases safety, reduces construction costs and downtime, and assures that product design features are properly applied for optimal performance.



BWCC has extensive experience with large and complex environmental construction projects.



Aftermarket Parts We provide replacement parts for equipment originally provided by B&W and other manufacturers. Parts are available for wet and dry FGD systems, wet and dry ESPs, fabric filters, and Multiclone dust collectors. Our quality ESP parts include internal mechanical components, and electrical and electronic control systems. As the exclusive North American licensee of GEA Process Engineering A/S for the GEA Niro SDA process, B&W provides original Niro replacement parts. A dedicated warehouse is located near a major airport in the central U.S. so parts can be shipped almost immediately – minimizing your downtime.

Our original parts are designed specifically for your equipment. Sizes and tolerances offer the right fit and best wear life for long-term reliability and safe operation.

B&W applies its experience, innovation and responsiveness to provide a complete package of advanced integrated emissions control solutions.



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LITERATURE

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