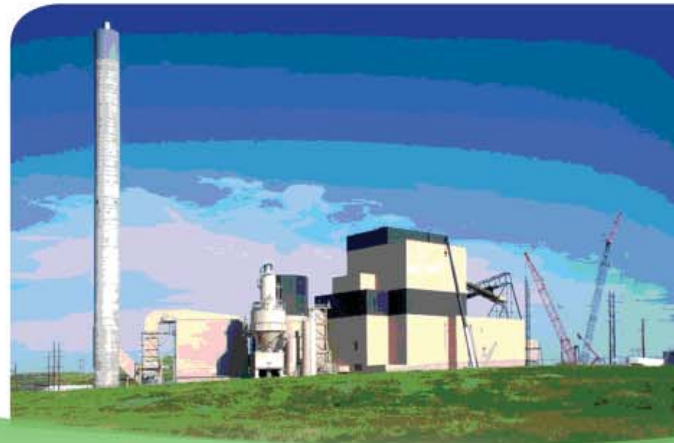


power generation  
**for the future**



**generating powerful solutions ...**

with clean energy  
technologies

**T**he challenge to generate power more efficiently, while reducing the environmental impact, requires experience, creativity, perseverance and ingenuity. Based on a solid foundation that began in 1867, Babcock & Wilcox Power Generation Group, Inc. (B&W PGG) is leading the way in providing solutions to this global challenge.





Coal-fired power plant and environmental equipment

In today's environment, power suppliers must consider a diverse portfolio of fuel and technology alternatives. Building upon our successful experience, B&W PGG continues to provide the industry's most advanced, clean and diverse range of steam generating equipment, emissions control equipment and services for existing and future power plants.

### B&W PGG Facts

Installed capacity of more than 300,000 megawatts (MW) worldwide

Technology leadership – more than 5,200 U.S. patents

*Steam/its generation and use*, entirely written and published by B&W and now in its 41st edition, is the longest continuously published engineering text in the world

Advanced technologies to utilize virtually any fossil, renewable or waste fuel

Strong, stable and experienced technical workforce

**generating powerful solutions ...**

for reliable steam generation

**H**igher efficiency. Lower emissions. High availability and dependability. These are the driving forces for B&W PGG's relentless pursuit of providing the best proven technology for the reliable and clean generation of steam.

B&W PGG designs, manufactures and constructs steam generating systems to accommodate any fuel requirements and to meet the power needs of utilities and industry. Our extensive operating and engineering experience with diverse combustion technologies enables us to optimize fuel efficiency while meeting strict emissions requirements.



*Biomass-fired BFB boiler*

### B&W PGG Boilers and Steam Generating Equipment

Advanced supercritical boilers

Subcritical boilers

Fluidized-bed boilers

Biomass-fired boilers

Waste-to-energy boilers

Chemical recovery boilers

Industrial power boilers

Package boilers

Solar thermal power

Auxiliary plant equipment





*Solar thermal receiver*



*Energy-from-waste plant*

With a worldwide installed capacity of more than 300,000 MW, and having supplied some of the world's largest and most efficient steam generating systems, B&W PGG has the experience and technical capability to reliably convert the energy in a wide range of fuels to energy in steam.



*500 MW supercritical boiler and air quality control systems*

generating powerful solutions ...

for the environment

**E**nvironmental protection is a key requirement in modern steam-producing systems. B&W PGG is a technological leader in providing cost-effective and efficient air pollution control solutions.

We have successfully developed advanced technologies to control nitrogen oxides (NO<sub>x</sub>), sulfur dioxide (SO<sub>2</sub>), fine particulate, mercury, acid gases and other hazardous air emissions. Combustion and post-combustion systems can be integrated to meet specific environmental strategies. Systems are available for new boiler installations as well as for retrofit and upgrade applications into existing power plants.



*Dry flue gas desulfurization system and fabric filter particulate collection*



*Wet flue gas desulfurization system*



*Multi-pollutant control systems*

B&W PGG has an unwavering commitment to environmental research including air toxic emissions characterization, efficient removal of mercury, multi-pollutant emissions control, sulfur trioxide (SO<sub>3</sub>) capture, and carbon dioxide (CO<sub>2</sub>) reduction and capture, among others.

## B&W PGG Environmental Equipment and Solutions

CO<sub>2</sub> combustion and post-combustion technologies

Wet and dry flue gas desulfurization systems

Selective catalytic and non-catalytic reduction systems

Low NO<sub>x</sub> burners and overfire air systems

Fabric filter baghouses

Wet and dry electrostatic precipitators

Mercury control systems

Dry sorbent injection for acid gas mitigation

Complete multi-pollutant control systems

System upgrades and replacement parts

**generating powerful solutions ...**

for optimum performance and

**T**o keep steam generating equipment operating at peak efficiency and availability, B&W PGG offers the boiler industry's most comprehensive mix of services and customer-based programs.

Modifying and improving existing equipment allows our customers to take advantage of the latest design technologies for new units. B&W PGG's full-scope boiler, environmental and auxiliary equipment retrofits, upgrades and services improve plant performance and efficiency and extend the life of vital steam generating assets. We offer customer-based alliance programs to enhance inventory management, and maximize the availability and service life of power plant equipment. Expert field engineers, service specialists and resident service engineers are available to provide on-site recommendations to help optimize plant performance.

*Start-up and commissioning services*





# availability



*Field service engineering*

Delta Power Services, LLC (DPS), a subsidiary of B&W PGG, provides management, and operation and maintenance (O&M) services for fossil fuel-fired, biomass, waste-to-energy and renewable energy power plants. DPS possesses the experience and capabilities to deliver measurable plant improvements, such as plant heat rate efficiency, availability and safety.

Diamond Power International, Inc., a B&W PGG subsidiary established in 1903, is a recognized leader in sootblowing equipment and technologies for boiler cleaning and ash handling systems. These

solutions, combined with intelligent controls, diagnostics and performance engineering services, provide a key component for boiler efficiency.

B&W PGG provides and continues to develop new technologies focused on plant optimization. These include products that improve unit capacity, combustion, heat rate and emissions reduction, while remotely monitoring equipment performance with high-speed connectivity and specialized performance software.

## B&W PGG Services

Boiler, environmental and auxiliary equipment upgrades

Plant operations and maintenance

Repowering/fuel switching

Engineering studies

Field engineering services

Asset performance products

Replacement parts

Boiler cleaning and ash handling

Customer value-added programs

Start-up, commissioning and training programs



*Plant operations and maintenance*



*Boiler header manufacturing*

**generating powerful solutions ...**

for manufacturing quality



*Wall panel membrane fabrication*

**T**he power generation industry has achieved unprecedented levels of availability and reliability in modern steam generating equipment. Plant optimization programs, efforts to maximize system efficiency, state-of-the-art design and manufacturing techniques, as well as the use of advanced materials, are major reasons for these gains.

B&W PGG is committed to our manufacturing operations, as they play a critical role in serving our customers. We own and operate manufacturing facilities throughout the world and utilize a global network of qualified fabricators to provide the quality products and on-time delivery our customers demand. B&W PGG maintains complete control over the manufacture and quality of all our products, meeting and exceeding the American Society of Mechanical Engineers (ASME) Code. Ongoing upgrades to our facilities, equipment and processes improve productivity, safety and delivery schedules.

To maintain our leadership position in the industry, B&W PGG utilizes the concept of value engineering, a structured approach that enhances the manufacturing process. Manufacturing personnel are involved early in design discussions so the resultant design-for-manufacturability and constructability improvements add value to the product and result in cost savings.



*Package boiler design and manufacturing*

## B&W PGG Manufacturing Technology

All facilities ISO 9001 certified

Facilities throughout North America and the world

Foundry operations

Full-scope boiler manufacturing joint venture in Beijing, People's Republic of China

Design-for-manufacturability and constructability

Nondestructive testing to ensure quality

Latest equipment, systems and automation technology

Ongoing investment in facilities and process improvements



*Foundry operations*

**generating powerful solutions ...**

for construction project certainty

**C**onstruction plays a major role in the success of power generation projects. B&W PGG’s subsidiary, Babcock & Wilcox Construction Co., Inc. (BWCC), takes an integrated approach to all construction projects. Our construction technology team is active in the very early stages of a project providing technical direction in the preparation of proposals as well as project execution. BWCC endorses the philosophy of designing for constructability. The ultimate goal is to reduce the installed cost and schedule while providing a quality product and safe work environment.



*On-site project management*

- BWCC Construction Technology**
- Engineering, procurement and construction integration
- Balance-of-plant capabilities
- Extensive large project field construction experience and expertise
- Component modularization
- Design for constructability
- Heavy lift engineering
- Proven safety programs
- Plant maintenance programs
- Teaming and alliance contract arrangements



*Design for constructability*



*Component modularization*

Servicing a wide range of industries, BWCC provides total construction services for the entire balance of plant, from large steam generation or environmental equipment projects, to cogeneration and combined cycle installations. Unique customized programs are available, including plant maintenance services and contract arrangements through teaming and alliances. BWCC has also developed and adheres to a comprehensive safety program to promote safety awareness.

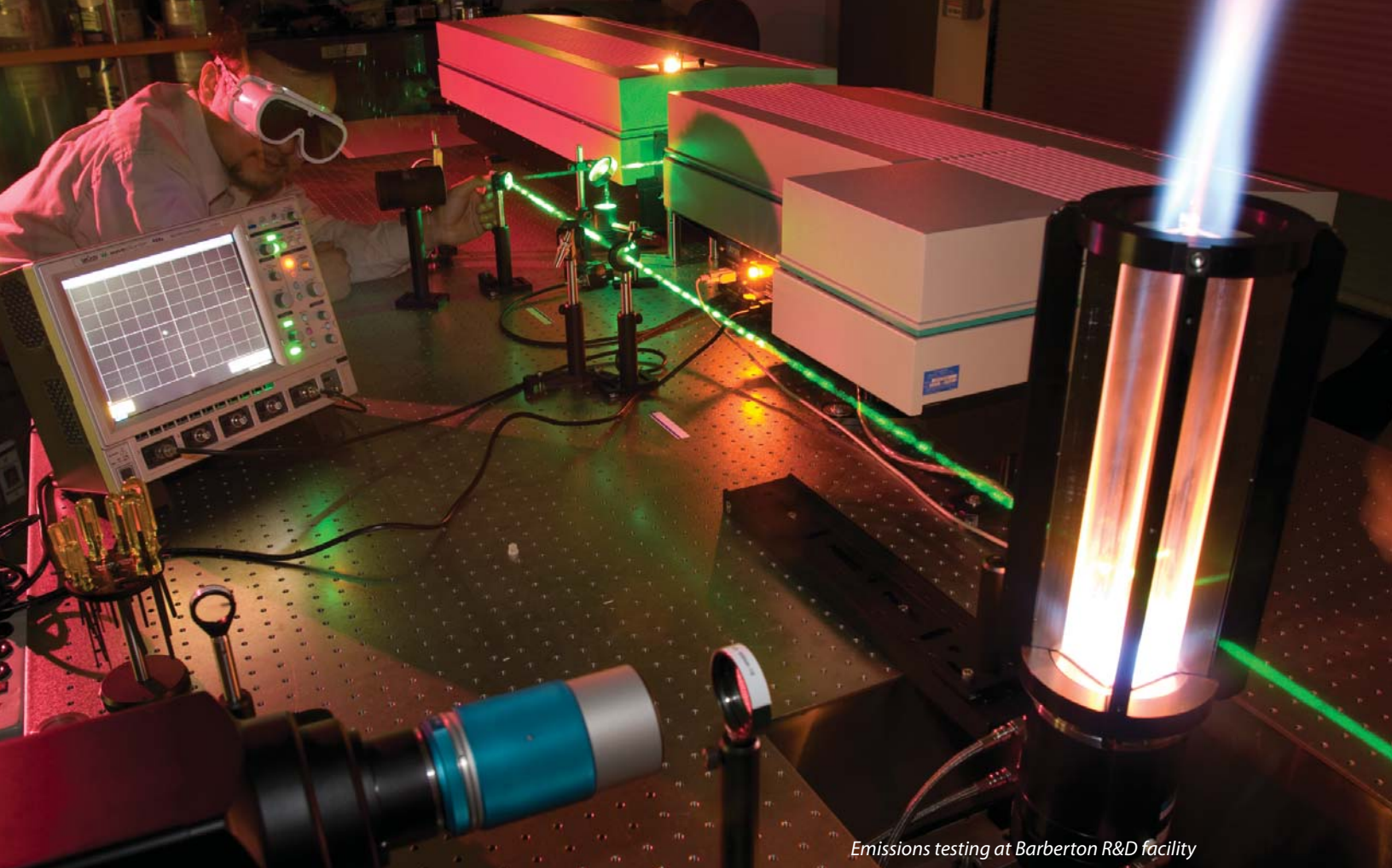
BWCC is an experienced single-source supplier for both new plant installations and plant modifications. Retrofit projects present a unique set of challenges because

equipment must be constructed into existing, and often limited, spaces in operating plants that require precise scheduling during plant outages. BWCC's extensive planning and coordination efforts between owners, engineers, manufacturers and field labor are vital to keep projects on time and within budget.

BWCC's extensive experience with large, complex projects gives us the depth of knowledge necessary to safely deliver a successful project of any size at any plant site.

*Boiler and environmental equipment construction services*





*Emissions testing at Barberton R&D facility*

**generating powerful solutions ...**

for the future

**S**

Since the founding partnership of George Babcock and Stephen Wilcox in 1867, research and development have played important roles in B&W's service to the power industry. Today, these activities remain an integral part of our focus on tomorrow's product and technology requirements.

Key areas of research include environmental protection, carbon mitigation, advanced supercritical boilers, fuels and combustion technologies, heat transfer and fluid mechanics, material and manufacturing technologies, structural analysis and design, fuel and water chemistry, alternative steam cycles, and measurement and monitoring technologies. Internal process improvements are implemented to enhance customer and supplier communication, knowledge transfer and technical information access.



*Advanced computational numerical modeling*

By harnessing the knowledge and experience of our employees and using our vast technical resources, we will continue to improve methods of utilizing coal and other fuels as sources for efficient and clean power generation.

## B&W PGG for the future

Research and development for technology improvements

Internal process initiatives to optimize customer service and communication

Advanced technology development group

Improved manufacturing processes, equipment and materials

Modern research facility and small boiler simulator

Active participation in site testing



*Carbon dioxide research and technology development*

# delivering proven results

To request more detailed information about any of our products or services discussed in this brochure, contact your regional sales or service office, call us at 1-800-BABCOCK, or visit our web site at [www.babcock.com](http://www.babcock.com).

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