Company Overview

Ron Pulliam,
Director, Group Quality

May 24, 2016

Core Values

B&W

the babcock & wilcox company

VISION

The preferred global leader excelling in the delivery of advanced energy and operational solutions.

MISSION

We are B&W. Count on us to:

- Deliver innovative technologies and solutions to fulfill the needs of our customers.
- Provide a challenging, rewarding and safe work environment for our employees.
- Generate increasing value for our stakeholders.

CORE VALUES

People:	We will treat each other with dignity and respect while embracing diversity, cooperation, open dialogue and teamwork.
Safety:	We strive to finish each and every day incident- and injury-free.
Excellence:	We are committed to the relentless pursuit of quality, service and integrity in everything we do.
Technology:	We are passionate about innovation and technology leadership.
Stewardship:	We are dedicated to the long-term well-being of the environment and to preserving the value of our customers' and shareholders' assets.

Safety is fundamental to B&W

Safe conduct of operations is expected and demanded as we successfully operate in and manage high consequence, high risk work

B&W

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Creating a Target Zero Culture

TARGET
EACH AND EVERY DAY
ZERO

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Company Profile

Headquarters: Charlotte, NC

Incorporation: Delaware

Ownership: Public (NYSE:BW)

Revenue: ~$1.7B

Chairman & CEO: E. James Ferland

Employees: Approximately 6,000 employees, in addition to 2,500 joint venture employees worldwide

Strong balance sheet with no debt and backlog of over $2 billion

- Global leader in energy and environmental technologies and services for the power and industrial markets
- Installed electricity generation capacity of more than 300,000 megawatts in more than 90 countries
- Pioneered environmental equipment in the 1970s with most comprehensive suite of products available
- Ability to service B&W and competitor products
- Employees in 25 countries

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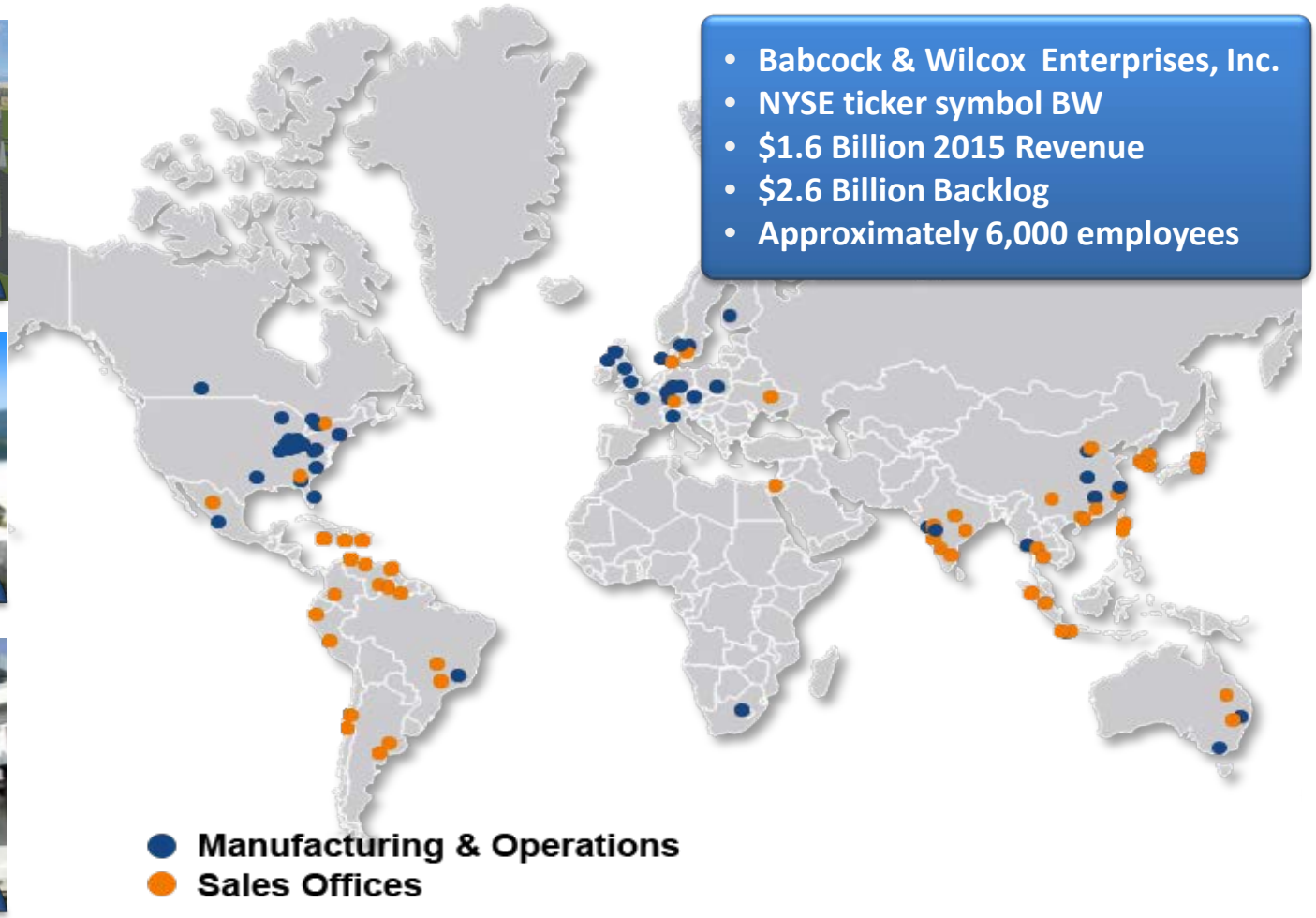
The Babcock & Wilcox Company



- Babcock & Wilcox Enterprises, Inc.
- NYSE ticker symbol BW
- $1.6 Billion 2015 Revenue
- $2.6 Billion Backlog
- Approximately 6,000 employees

B&W

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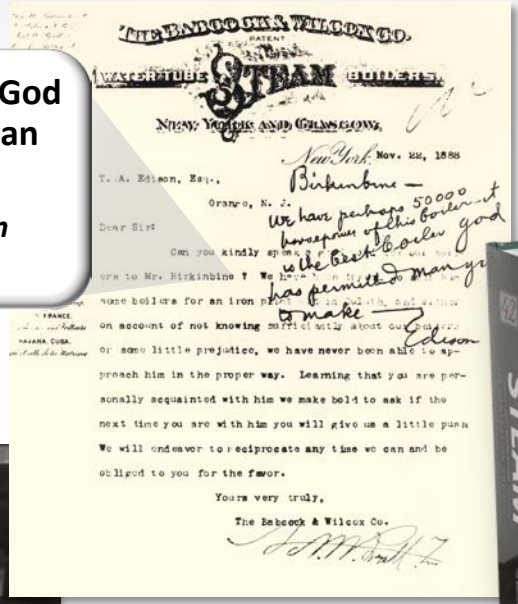
149 Years of Success in Power Generation

"…the best boiler God has permitted man yet to make."

Thomas A. Edison (1888)


THE BABCOCK & WILCOX CO.
PATENT
LOCOMOTIVE STEAM BOILERS.
NEW YORK AND GLASGOW.

New York Nov. 22, 1888

T. A. Edison, Esq.,
Orange, N. J.

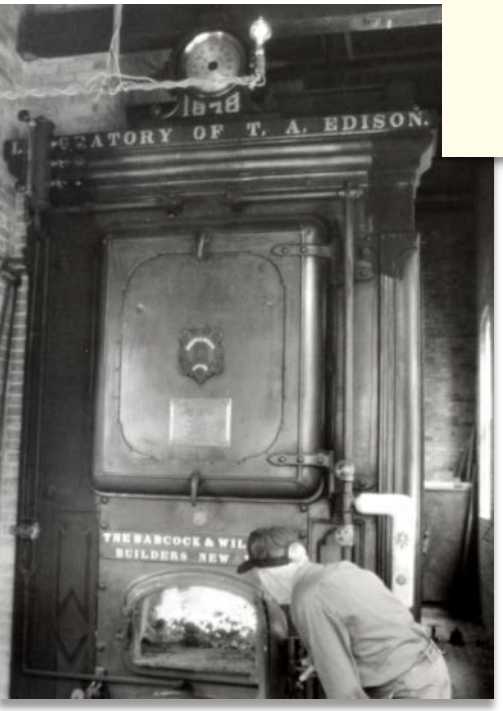
Birkinbine —
We have perhaps 50000 horse power of this boiler — it is the best boiler God has permitted man yet to make — Edison

Dear Sir:

Can you kindly speak a word for us to Mr. Birkinbine? We have in the shop now some boilers for an iron plant in Cuba, which, however, on account of not knowing sufficiently about our boilers or some little prejudice, we have never been able to approach him in the proper way. Learning that you are personally acquainted with him we make bold to ask if the next time you are with him you will give us a little push. We will endeavor to reciprocate any time we can and be obliged to you for the favor.

Yours very truly,

The Babcock & Wilcox Co.



Leading technology base

- Combustion systems
- Fluid flow systems
- Heat transfer systems
- Emissions control systems

Steam/its generation and use

- Longest continuously published engineering text of its kind in the world
- Published by B&W since 1875
- Used by power engineers worldwide
- New 42nd edition published in 2015

B&W

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B&W – A Legacy of Innovation

1867 – Building a power boiler reputation

- Original Babcock & Wilcox
- First water-tube power boiler
- Marine boilers for Teddy Roosevelt's *Great White Fleet*

1947 – Leading the development of nuclear power

- Nuclear components for the *Manhattan Project*
- Reactors for first nuclear-powered submarine, *USS Nautilus*
- First generation U.S. commercial nuclear power plants

1957 – First Supercritical boiler

- 1957 – first initial operation of 306,175 kg/hr; 313.7 bar (675,000 lb/hr; 4550 psig) (AEP Philo)
- 72,200 MW total installed capacity of supercritical boilers
- 107 total SC boilers, base loaded and full-cycling designs, largest in the world

1968 – Addressing the environment

- Fossil fuel emission controls for particulate, SO_x, NO_x, Hg
- Development of supercritical coal plants
- Research in fuels, materials, combustion, and post-combustion systems

2005 – Minimizing climate change

- Carbon capture and storage demonstration
- Biomass and solar thermal technologies
- Next-generation commercial nuclear power

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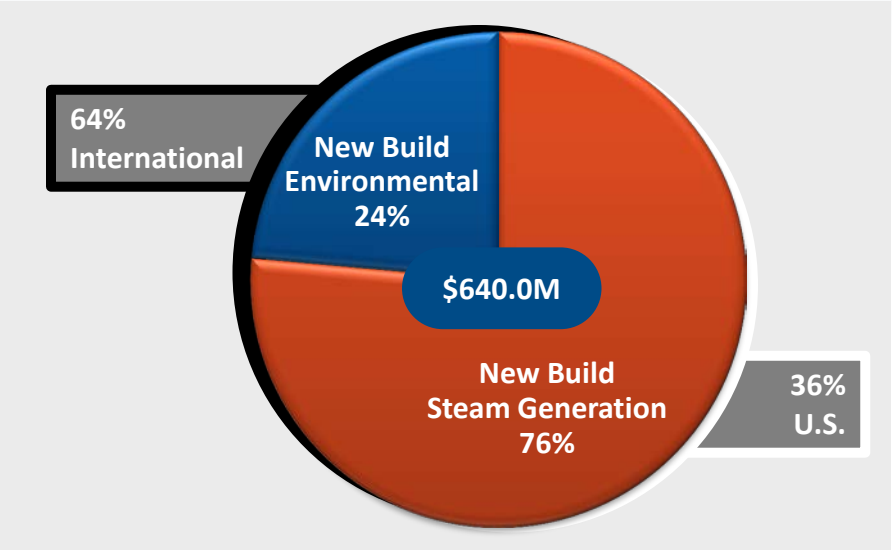
Global Power Overview

- Steam generating systems for fossil fuels and renewable energy conversion for power generation and industrial uses
- Environmental solutions include emissions control products and related equipment
- Complex project execution from design through commissioning, offering predictable installation of reliable equipment

2015 Revenue by Segment



Utility Steam Generation

Renewable Power

Industrial Power

Environmental Solutions

Pursue Core Growth in International Markets

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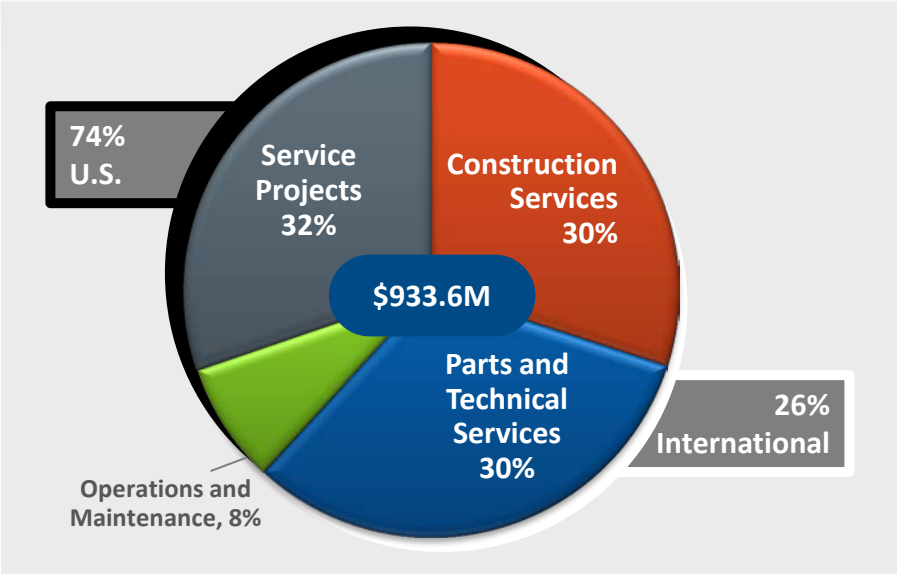
Global Services Overview

2015 Revenue by Segment



- Aftermarket products and services for steam generating equipment and associated environmental and auxiliary equipment
- Servicing B&W installed electricity generation capacity of approximately 300,000 MW in more than 90 countries plus competitor equipment
- Supports general industry and renewable boilers, including waste-to-energy and pulp & paper
- Extensive network of regionally located service centers, technical support personnel and global sourcing capabilities

Parts and Technical Services

Service Projects

Construction Services

Operations and Maintenance

Optimize Our Business and Improve Efficiency

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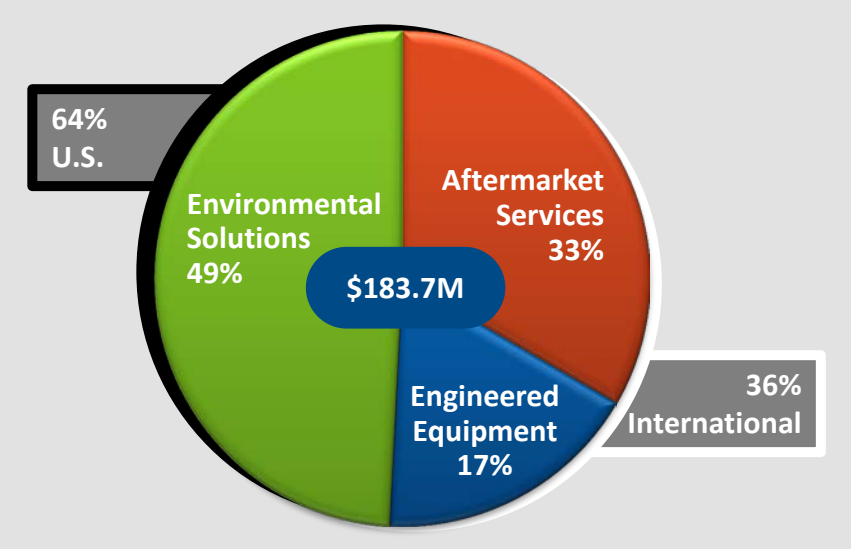
Industrial Environmental Overview

- B&W acquired MEGTEC Holdings, Inc. on June 20, 2014
  - 40+ year history with ~600 employees across 12 offices globally
  - Asset-light flexible manufacturing platform
  - Significantly expanded B&W's industrial environmental capabilities and provides additional channels to market
- Design, engineer, manufacture and service industrial equipment for process industries worldwide
  - Specific technologies for industrial air pollution abatement and recovery
  - Coating and drying equipment for various end markets (including energy storage)
  - Recurring aftermarket business

2015 Revenue by Segment



Air Pollution Control Systems

Coating and Drying Equipment

Replacement Parts

Preventive Maintenance

Execute a Disciplined Acquisition Program to Drive Growth and Diversification

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Environmental Solutions for Industrial Plants

- Wet Electrostatic Precipitator (WESPs)
- Dry Electrostatic Precipitator (DESPs)
- Baghouse/Fabric Filter
- Multicyclone
- Selective Catalytic Reduction (SCR)
- Semi-dry and Wet Scrubbers
- SNCR $DeNO_X$ Systems
- Solvent Recovery Systems
- Distillation & Purification Systems
- Ventilation Air Methane (VAM) to Energy
- Regenerative Thermal Oxidizers (RTOs)
- Catalytic Oxidizers
- Bioscrubbers/Bioreactors
- Greenhouse Gas (GHG) Abatement Technologies
- Heat Recovery Systems

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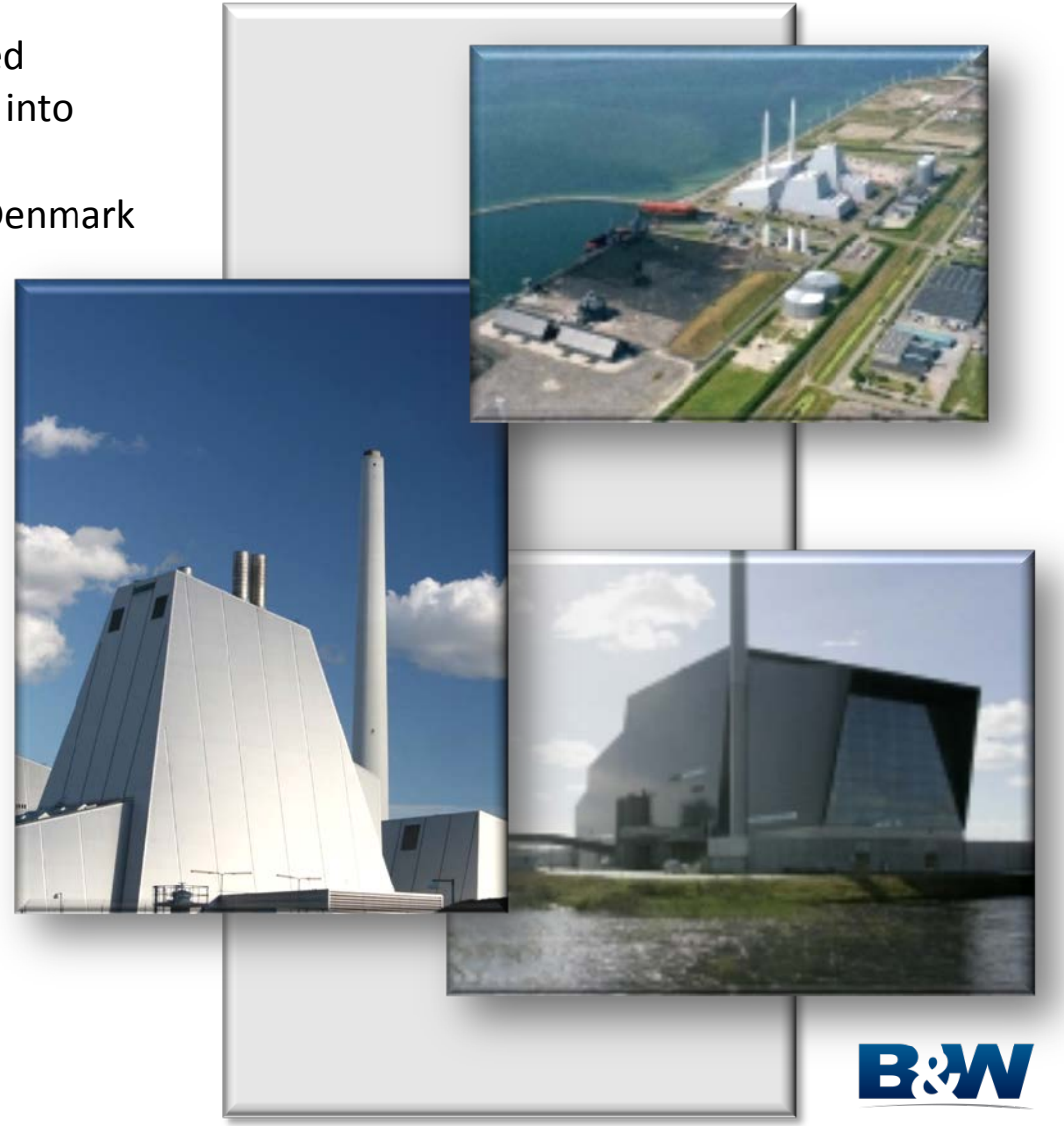
Waste-to-Energy and Biomass

- Leading supplier of energy plants designed to convert household waste and biomass into thermal energy
- Headquarters and workshop in Esbjerg, Denmark
- Branch offices in Copenhagen, Denmark and Gothenburg, Sweden
- Founded in 1898
- 430 employees worldwide

Main business areas include:

- Waste-to-energy plants
- Biomass energy plants
- After sales service
- Refurbishing/rebuilding



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Boiler Cleaning and Ash Handling Solutions

Integrated solutions

- Turnkey equipment installation and maintenance
- Diagnostic and Intelligent Control Systems
- Convection Pass, Furnace and Air Heater Cleaning
- Bottom Ash and Fly Ash Handling Systems

Global manufacturing

- Lancaster, Ohio
- Diamond Power Machine Hubei (China)
- Diamond Power Specialty Ltd. (Dumbarton, Scotland)
- Straubing, Bavaria, Germany

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Material Handling

Overview

- Allen-Sherman-Hoff in material handling business since 1917
- Over 2,000 ash removal systems installed in U.S
- Over 130 ash removal systems installed in 21 countries outside the U.S.
- Manufacturing and assembly facility in Lancaster, OH, USA
- Manufacturing and assembly facility in Wuhan, PRC
- Engineering and operation offices in Exton, PA

Types of Material Conveyed

Coal ash – bottom and fly ash, oil soot, fluidized-bed ash, petroleum coke, pet coke ash, FGD product, lime/limestone, Municipal Solid Waste, Refuse Derived Fuel

Market

Power plant boilers, fluidized-bed boilers, cogeneration, municipal, incineration, refineries, biomass, bulk materials handling

Systems Experience

Hydraulic ash handling, pneumatic ash handling, mechanical ash handling, mill rejects handling, oil soot handling, petroleum coke handling, bulk materials handling

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Mechanical Conveying and Material Handling

- Loibl Allen-Sherman-Hoff GmbH is located in Straubing, Bavaria (Southern Germany)
- Mechanical conveying and material handling equipment
- Capacity:
  - Company plot 15.000 m²
  - Production area 11.500 m²
  - Open area 3.900 m²

Production Equipment

- NC Lathes
- Plasma flame cutting machine
- Laser cutting machine
- Continuous sand blasting system

Refuse-Derived Fuel (RDF) Handling

FGD Gypsum Conveying Systems

Quarry Transport of Lime/Sandstone

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Joint Venture Operations

Thermax Babcock & Wilcox Energy Solutions (TBWES)

Established in 2010

- Thermax and B&W ongoing relationship since 1988

Products:

- Sub- and supercritical utility boilers
- Pulverizers

Manufacturing Capacity - 3,000 MW per year

- Facility near Pune, India

Market – India and Export

Babcock & Wilcox Beijing Company (BWBC)

Established in 1986

Licensed Products:

- Sub- and supercritical utility boilers
- Industrial and CFB Boilers
- Some environmental equipment (SCR and Low NO_x burners)

Manufacturing Capacity – 5,000 MW per year

Markets – China and Export

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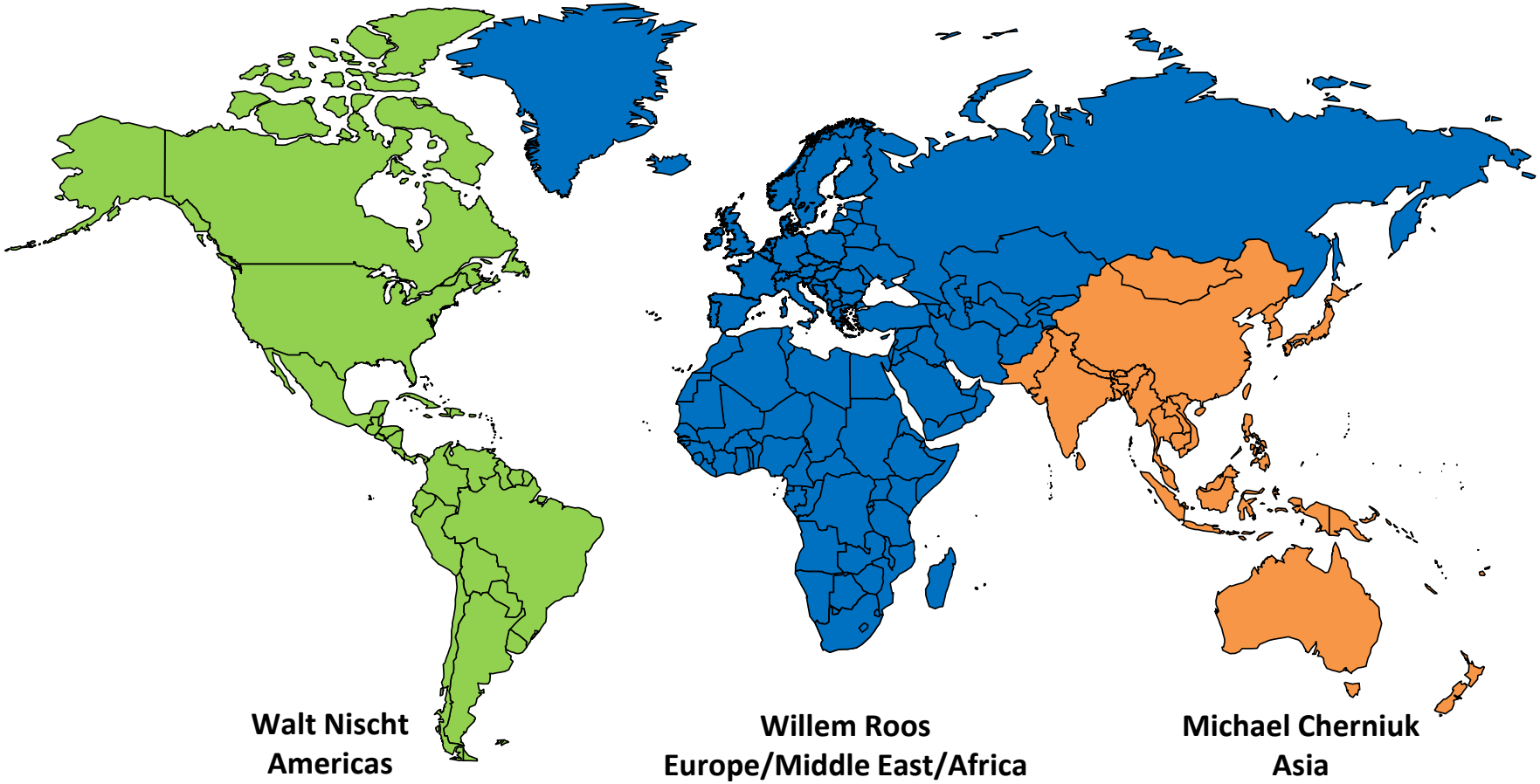
Business Development/Sales Regions



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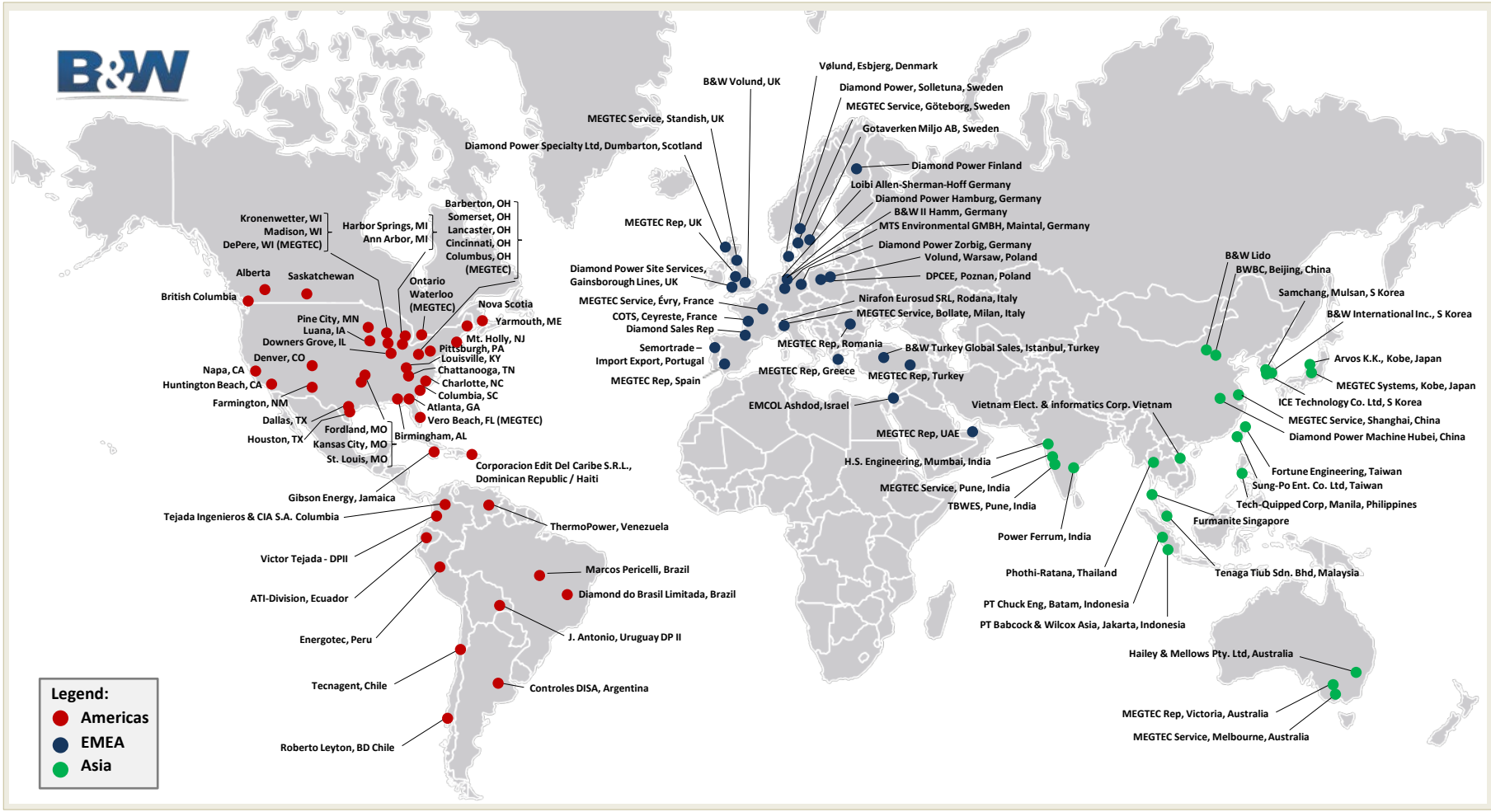
Global Business Development and Sales Footprint



B&W

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Babcock & Wilcox Locations

Key Office & Manufacturing
- Esbjerg/Copenhagen, Denmark
- Dumbarton, Scotland
- Straubing, Germany
- Gothenburg, Sweden
- Maintal, Germany

Key Office & Manufacturing
- Charlotte, NC
- Barberton, OH
- Copley, OH
- Lancaster, OH
- Exton, PA
- De Pere, WI
- Cambridge, Ontario
- Folkston, GA
- Monterrey, Mexico
- Hatfield, PA
- Newport News, VA
- Salt Lake City, UT
- Kansas City, MO

Key Office & Manufacturing
- Beijing, China
- Jingshan, China
- Shanghai, China
- Pune, India
- Jakarta, Indonesia
- Australia, Multiple Locations

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Worldwide Manufacturing Facilities

Manufacturing Plant	Square Meters	Main Products
PTBWA-Jakarta, Indonesia	1,755	Power plant maint/services, Trading business (import/export): boilers, machineries, spare parts
Beijing, China, (Joint Venture)	109,161	Boilers, burners, SCRs
Cambridge, Ontario	25,362	Boilers, nuclear, pulp & paper
Pune, India (Joint Venture)	64,939	Boilers, burners, pulverizers
Monterrey, Mexico	8,919	Pressure parts, Package boilers
Esbjerg, Denmark	12,449	CHP/WTE boilers
DPII, Lancaster, OH	42,085	Boiler cleaning equipment
Copley, OH (Service Center)	12,077	Wear parts, pulverizer rebuilds
Exton, PA		Material handling equipment
Kansas City, MO		Wear parts, tubes, pulverizer rebuilds

Manufacturing Plant	Square Meters	Main Products
DPII, Dumbarton, Scotland	9,476	Boiler cleaning equipment
DPII, Hubei, China	23,133	Boiler cleaning equipment
Loibl A-S-H, Straubing, Germany	3,502	Material handling equipment
KVB-Enertec, Hatfield, PA	279	Emissions monitoring
Folkston, GA	10,219	Precipitator components, mechanical
Newport News, VA	464	Precipitator components, electrical
De Pere, WI (MEGTEC)	23,225	Industrial emissions control equipment
Shanghai, China (MEGTEC)	4,255	Industrial emissions control equipment
Pune, India (MEGTEC)	836	Industrial emissions control equipment
Salt Lake City, UT	4,571	Wear parts, tubes, pulverizer rebuilds

B&W

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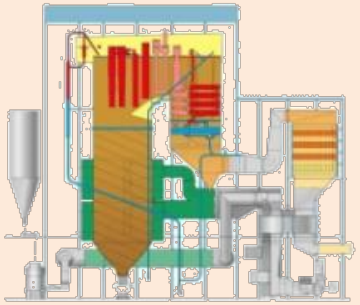
Advanced Technology Portfolio
Enhancing and Adapting for Global Markets

Steam Generators

- Highest efficiency coal-fired design
- Base-loaded, full-cycling
- Largest supercritical boilers in world
- Spiral & vertical tube PC & CFB boilers
- State-of-art metallurgy & beyond



Ultra-Supercritical Boiler

Environmental

- NO_X reduction
- SO_2 control
- Particulate control
- Acid gas reduction
- Mercury removal
- Ash management

Total Environmental Solutions for Utility & Industrial

Renewables

- Biomass
- Waste-to-Energy for RDF & MSW
- Grate, BFB & CFB boilers

Copenhill – Amager Bakke Waste-to-Energy plant in Denmark

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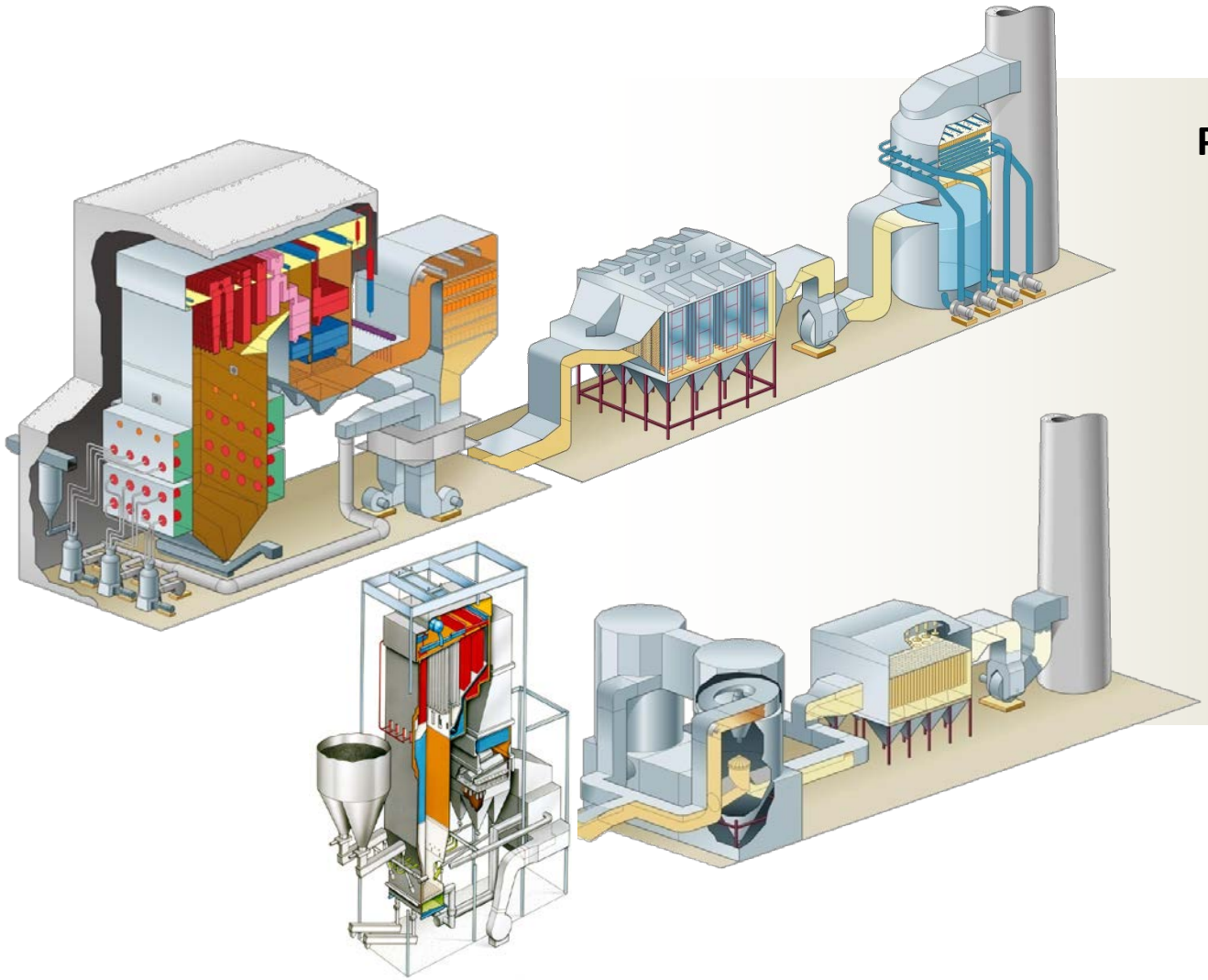
Steam Generator and Environmental Technology Solutions – New & Retrofit



Product & Services

- Boilers
- Environmental (FGT)
- Field Services
- Construction (N.A.)
- O&M Services
- Boiler Cleaning
- Ash Handling
- O&M Enhancements

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Environmental Technology Portfolio

Spray Dryer Absorber

Wet FGD

Circulating Dry Scrubber

Industrial and WtE Scrubbers

Fabric Filter

Dry ESP

Wet ESP / SO_3 Control

Multiclone® Dust Collector

Providing Customized Environmental Solutions

Mercury Control

Acid Gas Dry Sorbent Injection

CO_2 Control

SCR / Low NO_X Burner

Emissions Monitoring

Parts, Upgrades and Rebuilds

Ash Management

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Steam Generation Technology Portfolio

Ultra-Supercritical Utility Boilers

Subcritical Utility Boilers

CFB Boilers and WtE

BFB Boilers and WtE

Recovery Boilers

An Extensive Array of Technologies

Grate-Fired Refuse Boilers

HRSG Boilers

Package Boilers

Multi-Fuel Industrial Boilers

Sootblowers Ash & Material Handling

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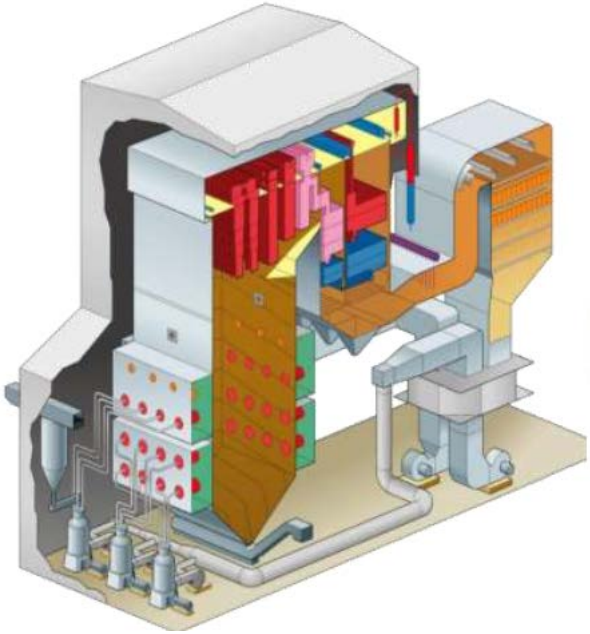
Utility Power Steam Generators Subcritical & Supercritical Pressure

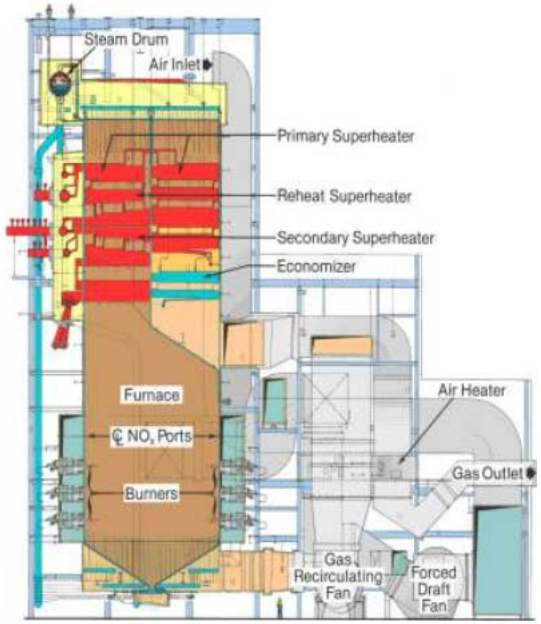


Pulverized Coal

~100 MW to 1300 MW

Circulating Fluidized-Bed

~50 MW to 660 MW



Heavy Fuel Oil

~100 MW to 800 MW

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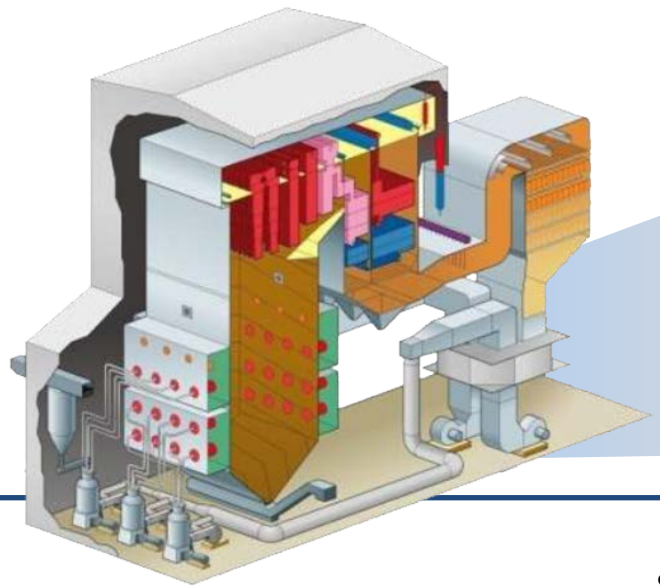
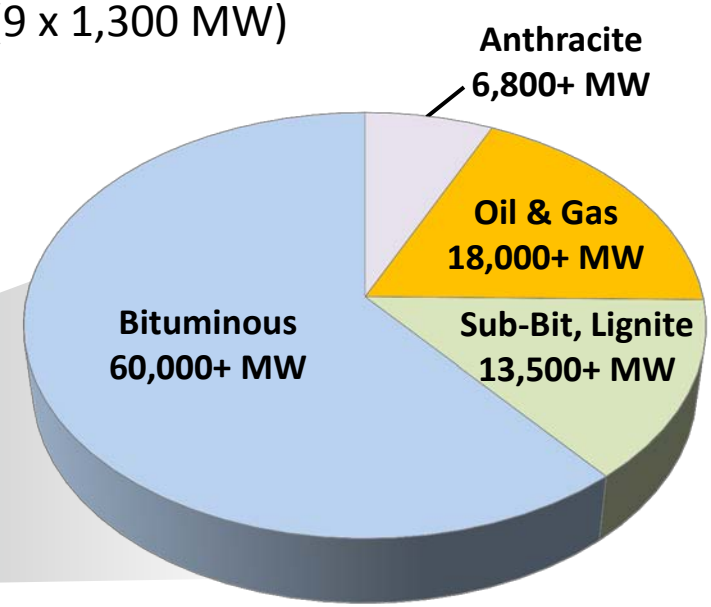
B&W Supercritical Boiler Technology

- 99,000+ MW Total Capacity
- 1st Ultra-supercritical (314 bar) unit, 1957
- Largest supercritical boilers in the world (9 x 1,300 MW)





- **Total Supercritical Boilers – 148**
- **Base-loaded and Full-cycling designs**
- **Variable Pressure Designs – 40% of units**

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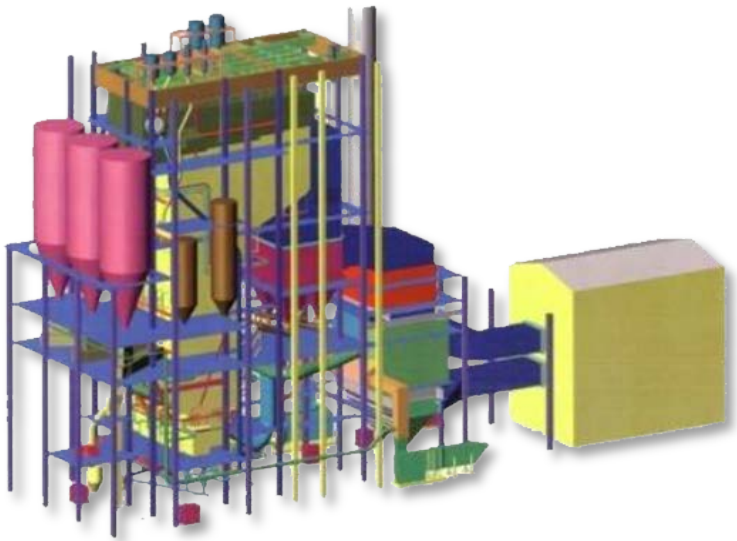
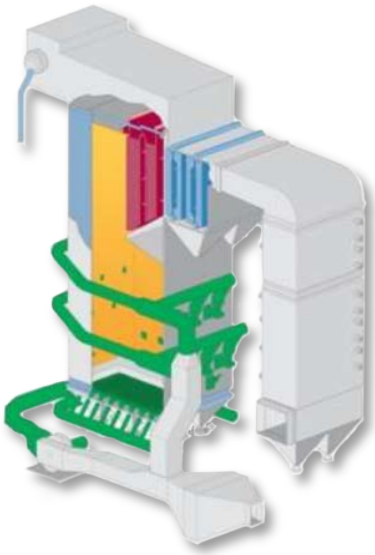
Biomass Technology Portfolio

Circulating Fluidized-Bed (CFB)





Bubbling Fluidized-Bed (BFB)

Stoker/Grate-Fired Boilers

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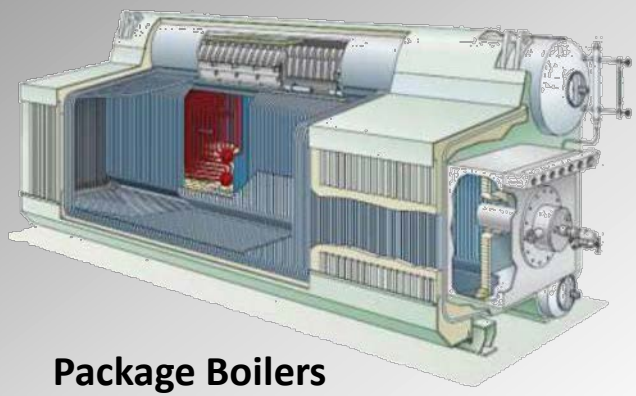
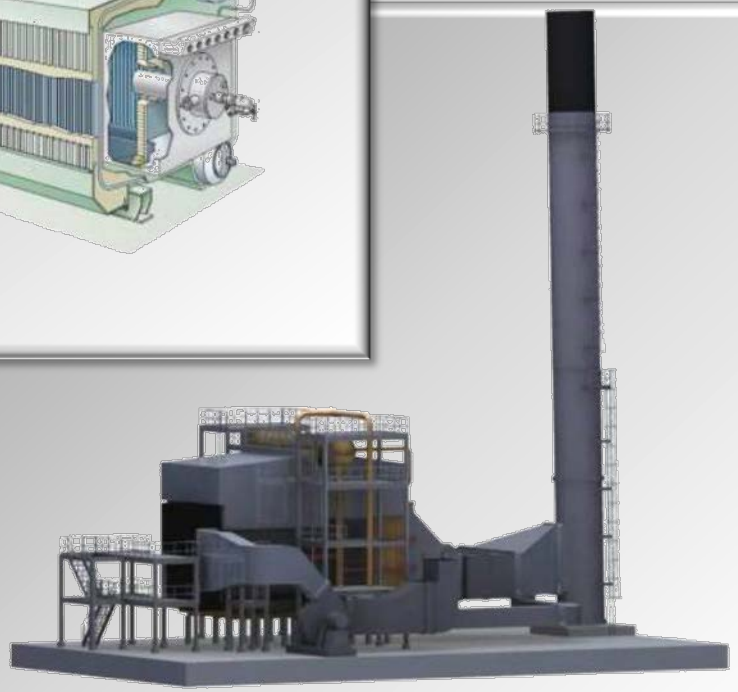
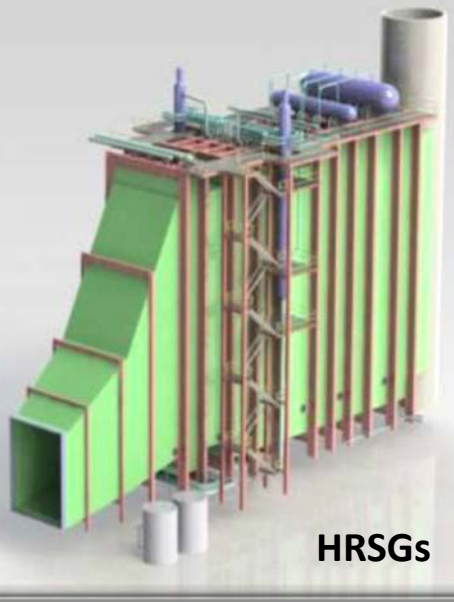
Industrial Gas/Oil-Fired Boilers and HRSGs New and Retrofit



Package Boilers



Industrial Multi-Fuel Boilers



HRSGs

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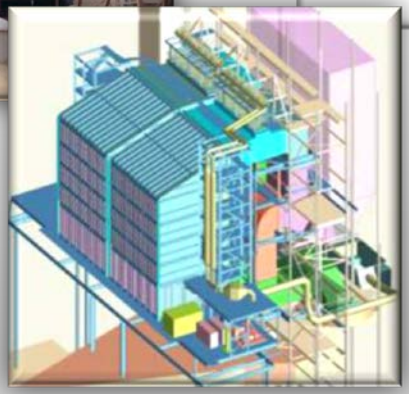
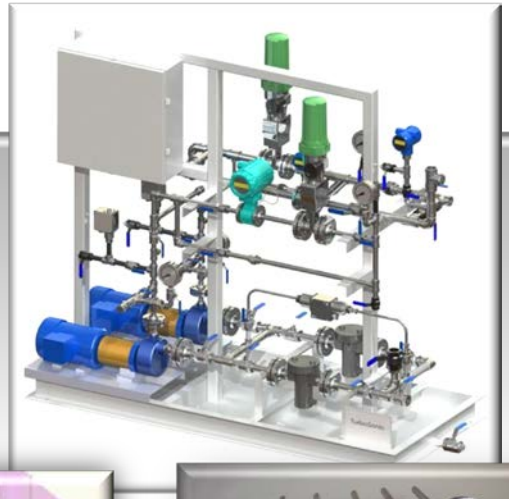
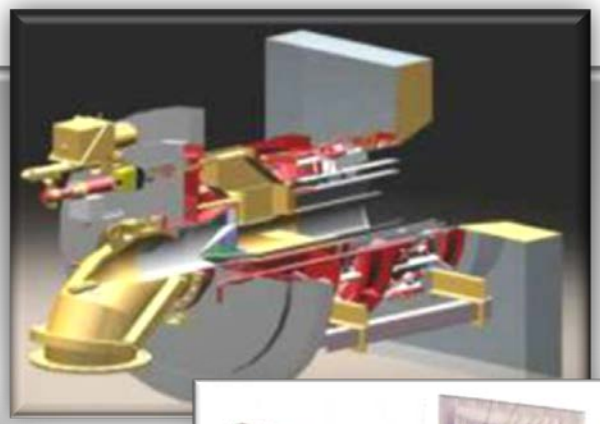
DeNO$_X$ Systems

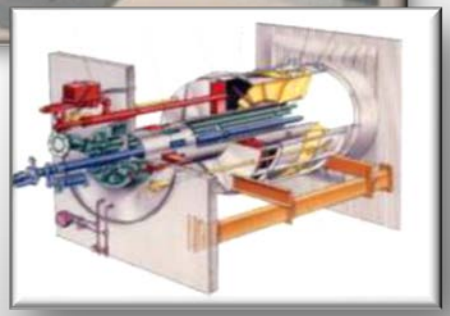


Selective Catalytic Reduction



Selective Non-Catalytic Reduction





Low NO$_X$ Burners – PC & HFO

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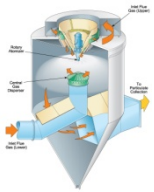
Flue Gas Treatment Systems – $DeSO_X$



Spray Dry FGD System

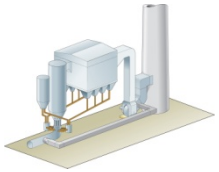
- Up to 98% SO_2 removal
- Lower sulfur fuels
- Traditionally <1.5% sulfur coal, but with hydrated lime, virtually unlimited
- Dry product for landfill, Uses lime

Wet FGD

- Up to 98+% SO_2 removal
- High sulfur fuels (>1.5%)
- More fuel flexibility
- Marketable byproduct
- Typically uses limestone

Dry Sorbent Injection

- Usually lime or sodium based
- Injected before particulate control device
- Used for SO_2, SO_3, HCl control



Circulating Dry Scrubber

- Up to 98+% SO_2 removal
- Higher sulfur fuels (>1.5%)
- More fuel flexibility
- Dry product for landfill
- Uses lime which is hydrated on-site

Seawater Scrubber

- International applications
- Uses warm seawater
- No byproduct

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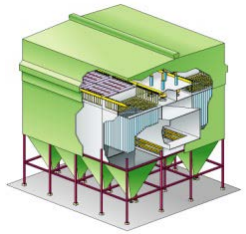
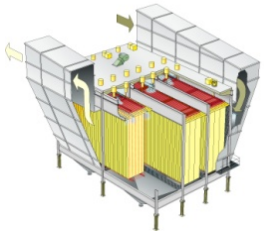
Particulate Control



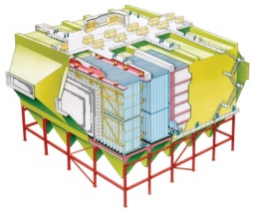
Pulse Jet Fabric Filter

- Emissions <10mg/Nm^3
- Acts as secondary scrubber with sorbent injection
- Installed >99% after SDA or CDS
- Can be used in series with ESP for Hg control



Wet ESP

- Final filter after Wet FGD
- Collects residual solids carryover, SO_3/H_2SO_4
- One solution to blue plume
- Usually for high sulfur fuel
- Minimizes condensable emissions



Dry ESP

- Workhorse of utility industry
- Low O&M cost
- Can provide >99.5% collection efficiency

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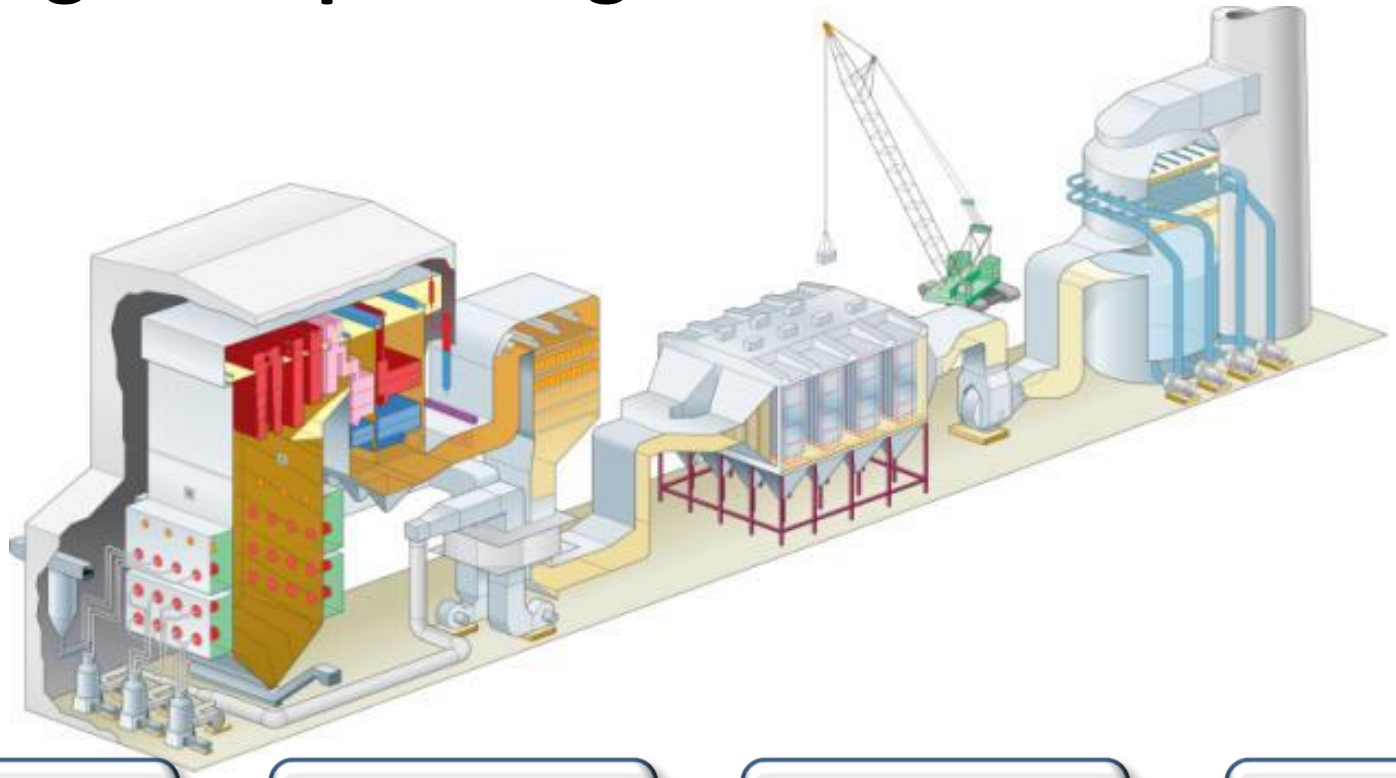
Serving the Operating Fleet from Chute to Stack



Service Projects

Maximizing the Capability of Your Equipment

Field Service

Trusted Advisors for Reliable Operation

Replacement Parts

Delivering Quality Parts, Programs & Services

Boiler Cleaning Solutions

Intelligent Control Solutions

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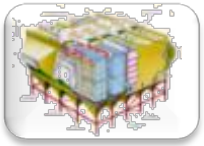
B&W Environmental Aftermarket Services

Product and Service Offerings

Wet FGD

Upgrades, rebuilds of existing 85,000 MW, replacement parts



Dry ESPs

Rebuilds, service, inspections and parts

SO_2 or SO_3 Control

Trona and lime injection systems

SCR and SNCR

Tuning services, catalyst management and regeneration, $DeNO_X$ systems

Field Specialists

Support and train O&M personnel, inspections, troubleshooting

Resident Service Engineers

RSE programs together with B&W FES

Dry FGD

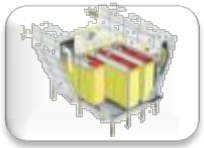
Upgrades, rebuilds (of existing 12,000 MW), Niro atomizer and system parts

Fabric Filters

ESP to FF conversions; replacement bags and parts

Mercury Control

Wet FGD re-emission additive, Fuel additive for PRB units and PAC



Wet ESPs

Parts and upgrades for existing units

Remote Consulting

Support for troubleshooting, O&M, process performance, “over the phone”

Emissions Monitoring

CEMS including field service/support and replacement parts, DAHS software and remote monitoring and diagnostic services

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