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Amec Foster Wheeler
offering a full line of
clean air technologies

connected
excellence
in all we do

amecfw.com

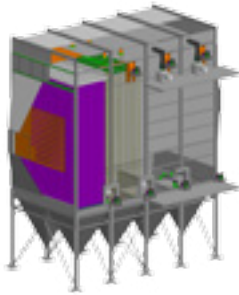
Innovative technologies for clean air

We offer a full line of air pollution control technologies for the utility power, iron and steel, pulp and paper, cement, mining, foundry, petroleum refinery, chemical, and refuse-to-energy plant sectors.

Particulate reduction

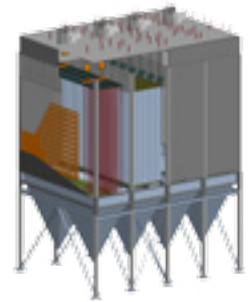
HaRDE™ Dry ESP

- ▶ High intensity tumbling hammer rapping for tenacious dust
- ▶ Durable rigid discharge electrodes
- ▶ Clean roof, no penetrations minimizes in-leakage/corrosion



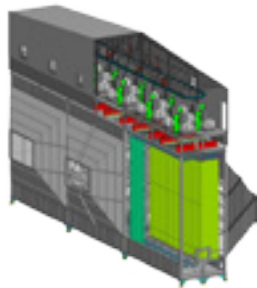
VIGR Dry ESP

- ▶ Variable intensity gravity rapping for optimized plate cleaning
- ▶ Durable rigid discharge electrodes
- ▶ Compact casing, no moving parts in air stream



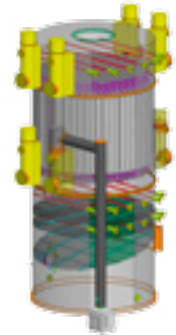
Horizontal Wet ESP

- ▶ Wide range of gas volumes
- ▶ Irrigated plates allow continuous cleaning
- ▶ Durable rigid discharge electrodes



Condensing Wet ESP

- ▶ Compact rectangular or round designs
- ▶ Irrigated tubes allow continuous cleaning
- ▶ Durable rigid discharge electrodes



Jet VIP FF

- ▶ Intermediate 35 psig (2.4 bar) pressure for low auxiliary load
- ▶ Cost-efficient long bag designs up to 10 m
- ▶ Split-gas baffle design to minimize can velocity and dust re-entrainment



Jet III FF

- ▶ Cost-efficient modular designs with bags up to 4.9 m
- ▶ Optimized high pressure, 90 psig (6.2 bar) cleaning
- ▶ High efficiency inlet "Sinto" baffle



RECENT PROJECTS



FPL Martin & Manatee

Product: VIGR ESP
 Capacity: 4 x 800 MWe
 Start-Up Year: 2015
 Fuel: No. 6 Fuel Oil
 Gas Flow: 4 x 2,958,000 ACFM
 PM Removal: 95.1%



Dynegy Baldwin Generating Station Units 1-3

Product: 6 SDAs and 6 Pulse Jet FFs
 Capacity: 1,800 MWe
 Start-Up Year: 2010, 2012
 Gas Flow: 2,500,000 ACFM
 SO₂ Removal: Up to 90%



LG&E Trimble County

Product: HIPWESP
 Capacity: 750 MWe
 Start-Up Year: 2010
 Fuel: Coal
 Gas Flow: 2,100,000 ACFM
 Outlet H₂SO₄: <1 ppmv

Acid gas and metal reduction

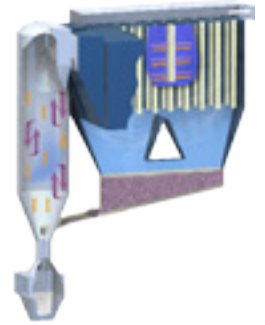
SDA

- ▶ Low maintenance two-fluid nozzles can operate for up to 3 weeks without cleaning
- ▶ Minimal water and power consumption
- ▶ Cost-effective solutions for both utility and industrial applications



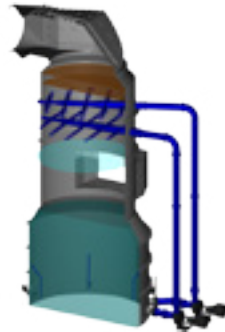
CFB Scrubber

- ▶ High multi-pollutant removal due to high solid-to-gas interactions
- ▶ High capture performance for wide fuel range
- ▶ Solid circulation keeps reactor surfaces clean
- ▶ Fully dry sorbent injection



WFGD

- ▶ Open tower and Dual Flow Tray (DFT) for design flexibility
- ▶ Cost-effective DFTs provide high removal efficiency
- ▶ Broad reagent and by-product experience



DSI

- ▶ Most economical acid gas and heavy metal control
- ▶ Broad sorbent experience
- ▶ Pre-packaged systems for reduced installation costs



NOx reduction



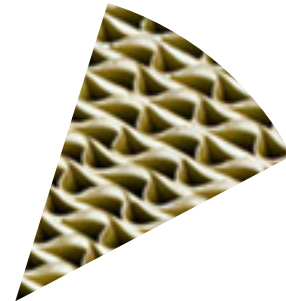
Wall-Fired Low NOx Burners

- ▶ Minimal moving parts for reliable operation
- ▶ Individual burner air measurement and control
- ▶ Innovative nozzle tip design minimizes NOx formation



T-Fired Low NOx Burners

- ▶ Long life DS coal and air nozzles
- ▶ Boundary air to control fireball shape
- ▶ Damper upgrades for improved air flow control



SCR

- ▶ Patented in-duct ammonia vaporizer
- ▶ Simplified catalyst loading/unloading system
- ▶ Integrated ammonia injection grid and mixer
- ▶ Multiple catalyst formulations and designs

RECENT PROJECTS



EVN O Mon 1 Thermal Power Plant, Unit 1

Product: WFGD
 Capacity: 300 MWe
 Start-Up Year: 2009
 Fuel: Fuel Oil
 Gas Flow: 817,000 ACFM
 SO₂ Removal: Up to 91.5%



Basin Electric Dry Fork Station

Product: CFB Scrubber
 Capacity: 420 MWe
 Start-Up Year: 2011
 Fuel: PRB Coal
 Gas Flow: 1,792,000 ACFM
 SO₂ /SO₃ Removal: Up to 96%/Up to 99%



AES Deepwater

Product: SCR
 Capacity: 210 MWe
 Start-Up Year: 2006
 Fuel: Petcoke
 NOx Reduction: 90%



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Amec Foster Wheeler's Global Power Group offers a full range of steam generator equipment, clean air technologies, aftermarket products and services to the power, industrial, and waste-to-energy sectors. GPG's global engineering, manufacturing, and procurement network delivers high-quality, cutting-edge products and services cost competitively, no matter where the project is located.

PRODUCTS AND SERVICES

Steam Generators

- ▶ Circulating Fluid Bed
- ▶ Pulverized Coal
- ▶ Oil & Gas
- ▶ Solar
- ▶ Bubbling Fluid Bed
- ▶ Package
- ▶ Grate and MSW
- ▶ Waste Heat
- ▶ HRSG

Environmental Products

- ▶ Wet FGD systems
- ▶ CFB scrubbers
- ▶ Dry Sorbent Injection
- ▶ Spray Dry Absorbers
- ▶ Wet and dry ESPs
- ▶ Fabric filters
- ▶ Cartridge collectors
- ▶ Low NOx combustion and SCR retrofits

Aftermarket Services

- ▶ Engineered pressure parts
- ▶ Replacement parts
- ▶ Weld overlays
- ▶ Refractory upgrades
- ▶ Coal mill service and upgrades
- ▶ Construction Services
- ▶ Performance upgrades
- ▶ Boiler retrofits

Auxiliary Equipment

- ▶ Condensers
- ▶ Feedwater heaters
- ▶ Biomass gasifiers

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