



RELIABLE

ECONOMIC

CLEAN COAL

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Longview Power Overview



- 778 MW gross (700 MW net) coal fired plant located near Morgantown, WV
- New plant started operations in December 2011 while PJM coal fleet averages >45 years
- Total project cost was approximately \$2.1B
- Additional \$120 million invested in 2015 to make the plant highly reliable
- Coal supplied by conveyor from affiliated mines
- Lowest cost coal-fired generator in PJM
- Highly efficient with lowest heat rate of any coal plant in North America
- Exceptionally low emissions with minimal wastewater discharge (zero to surface water)

Longview- Advanced Combustion Technology

Amec Foster Wheeler- Advanced Supercritical Boiler

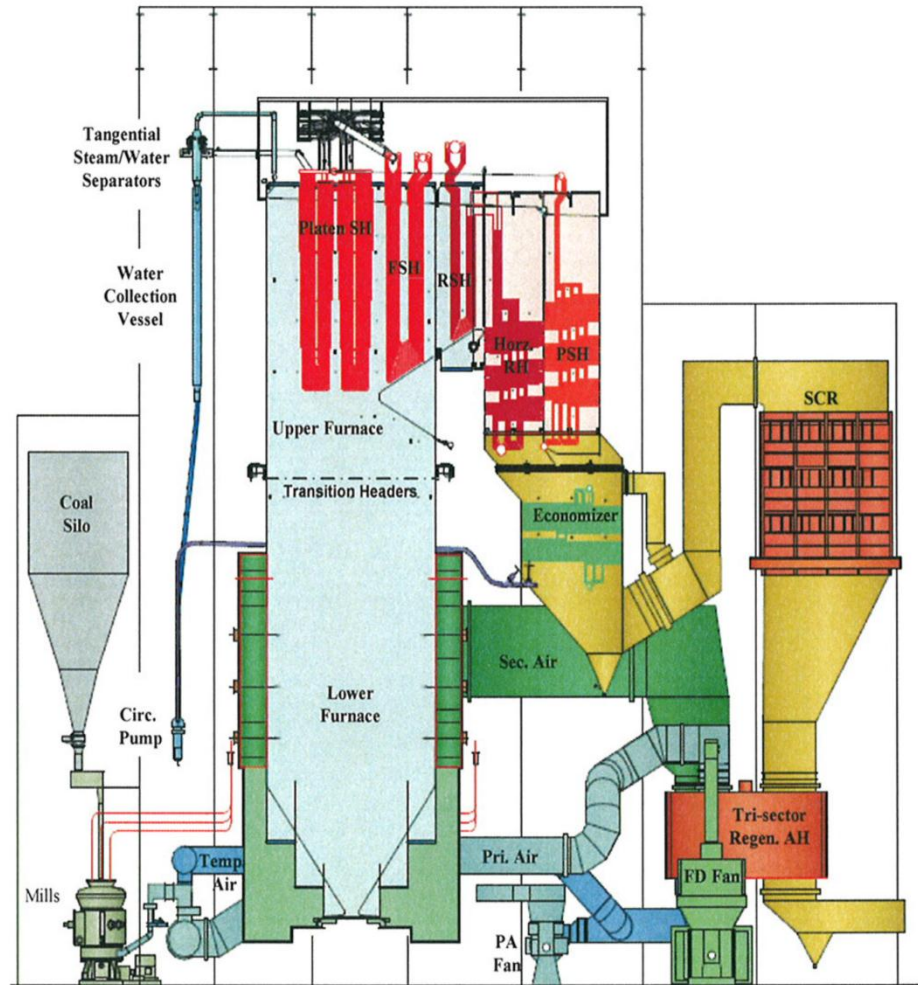
Steam Generator - First of a kind once thru, low mass flux vertical tube supercritical boiler

- Design for high efficiency
- Modified for reliability

Efficient Combustion System

- 36 low NOx burners
- Best in class combustion control of fuel and air
- Catalyst and low NOx burners assure clean reliable combustion
- Excellent control of slagging over wide load range

In 2015 replaced over 1000 boiler tubes in nose arch and upper furnace- no more leaks



Longview- Advanced Emissions Technology

Amec Foster Wheeler – Air Quality Control System (AQCS)

Acid Mist Reduction

- Hydrated lime injection system

Particulate Matter (PM) Removal

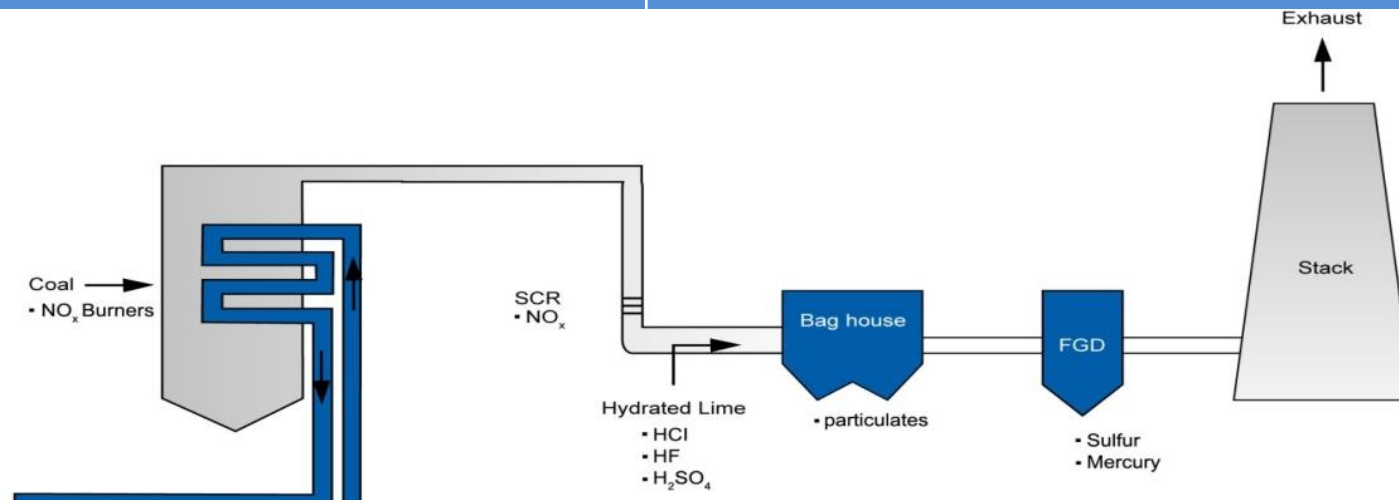
- > 99% Particulate Removal at Baghouse
- In 2015 added 30% greater capacity
- Ash System Capacity Improved

SO₂ Removal

- Wet Flue Gas Desulfurization System (FGD)
- Added Tray/Upgraded dewatering/Improved fines removal / Corrosion Inhibit system installed
- Up to 99.5% removal – Best in Class

Mercury Removal

- Mercury removal with combined AQCS equipment
- Fully MATS compliant

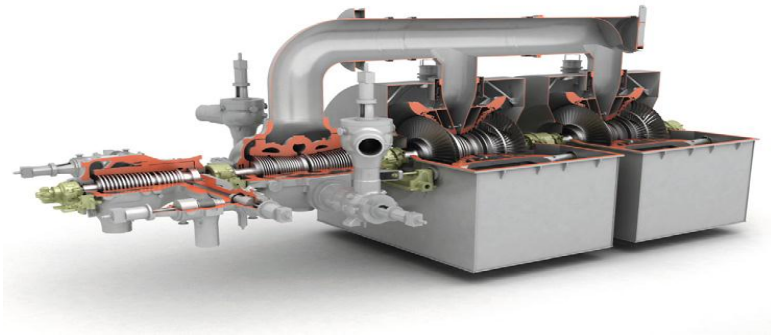


Longview is best in class in controlling pollutants and HAPS

Longview- Advanced Generation Technology

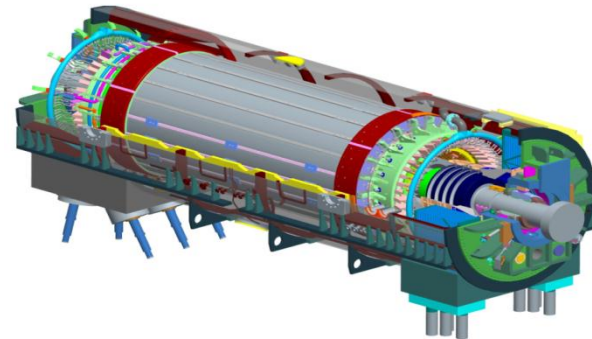
Steam Turbine & Generator

Thermal Energy → Mechanical Energy → Electrical Energy
(Boiler) (Steam Turbine) (Generator)



Siemens HMNN 770 MW Turbine System

- Tandem Compound Design: 1x single flow HP, 1 x double flow IP, 2 x double flow LP Sections
- Modern design that allows fast ramping



Siemens Model # SGen6-3000W Generator

- Rated for 807MW/hr
- Hydrogen inner cooling and water-cooled stator winding
- Up to 99% operating efficiency
- Repaired to “like new” condition in 2015

High efficiency with reliable cycling capability

Longview- Gas Supply and Advanced Start Up Capability

Startup Capability- Pipeline and LNG to assure start-ups



LNG

- Worlds largest mobile LNG facility
- Capacity for 2 full starts
- Ideal for winter peak or pipeline outage coverage and for new PJM CP requirements

Natural Gas Pipeline

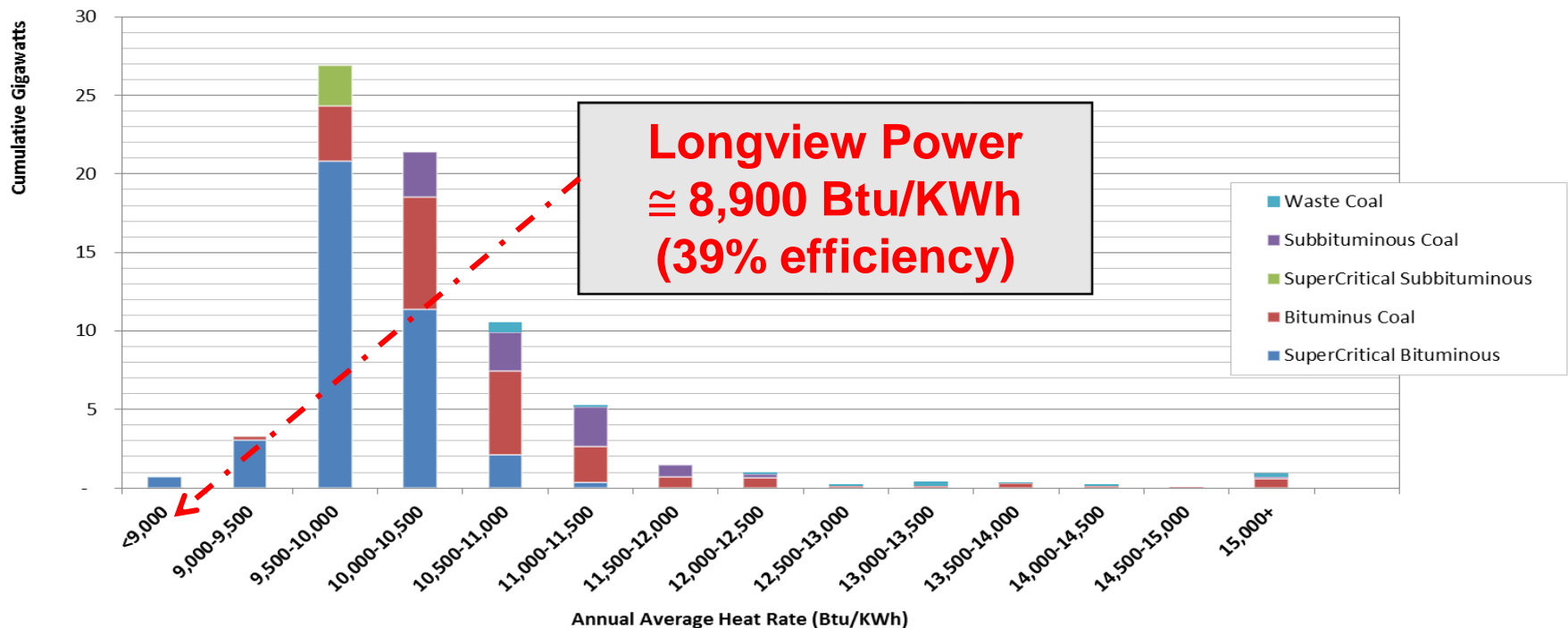
- Supplied by local gas utility (Dominion)
- Winter peak curtailments occur frequently
- 20% natural gas co-firing capability without additional cost

Longview has co-firing and “inside-the-fence” startup reliability

Longview- Best in Class Efficiency

Longview is the most efficient coal-fired unit in North America.

Heat Rate, Fuel Type & Technology Class
of Coal-Fired Generating Units in PJM

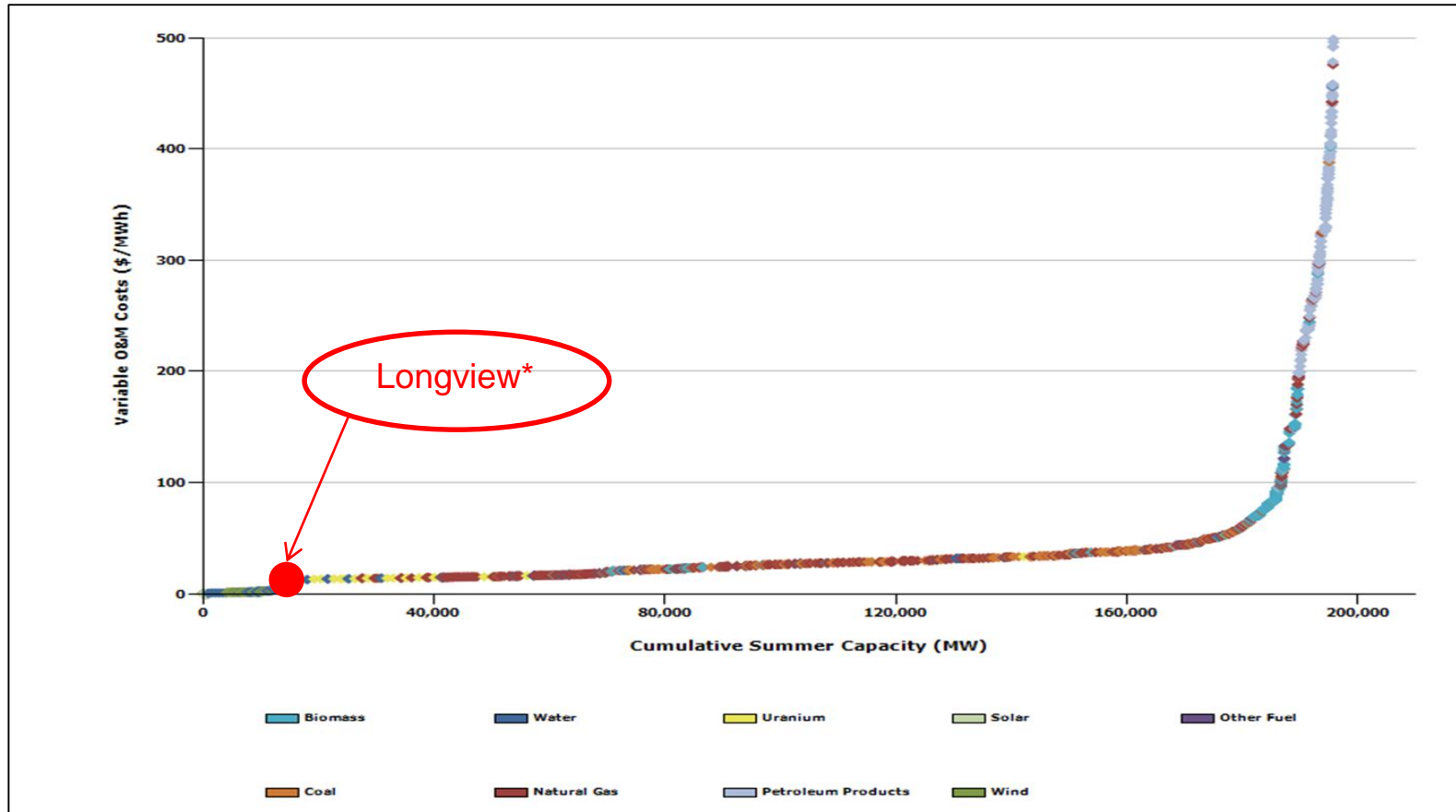


Source: Velocity Suite Nov-2012

Coal plants have not achieved this level of performance until now

Longview- Lowest Cost in PJM

PJM Dispatch Curve (Marginal Cost of Dispatch by Unit)

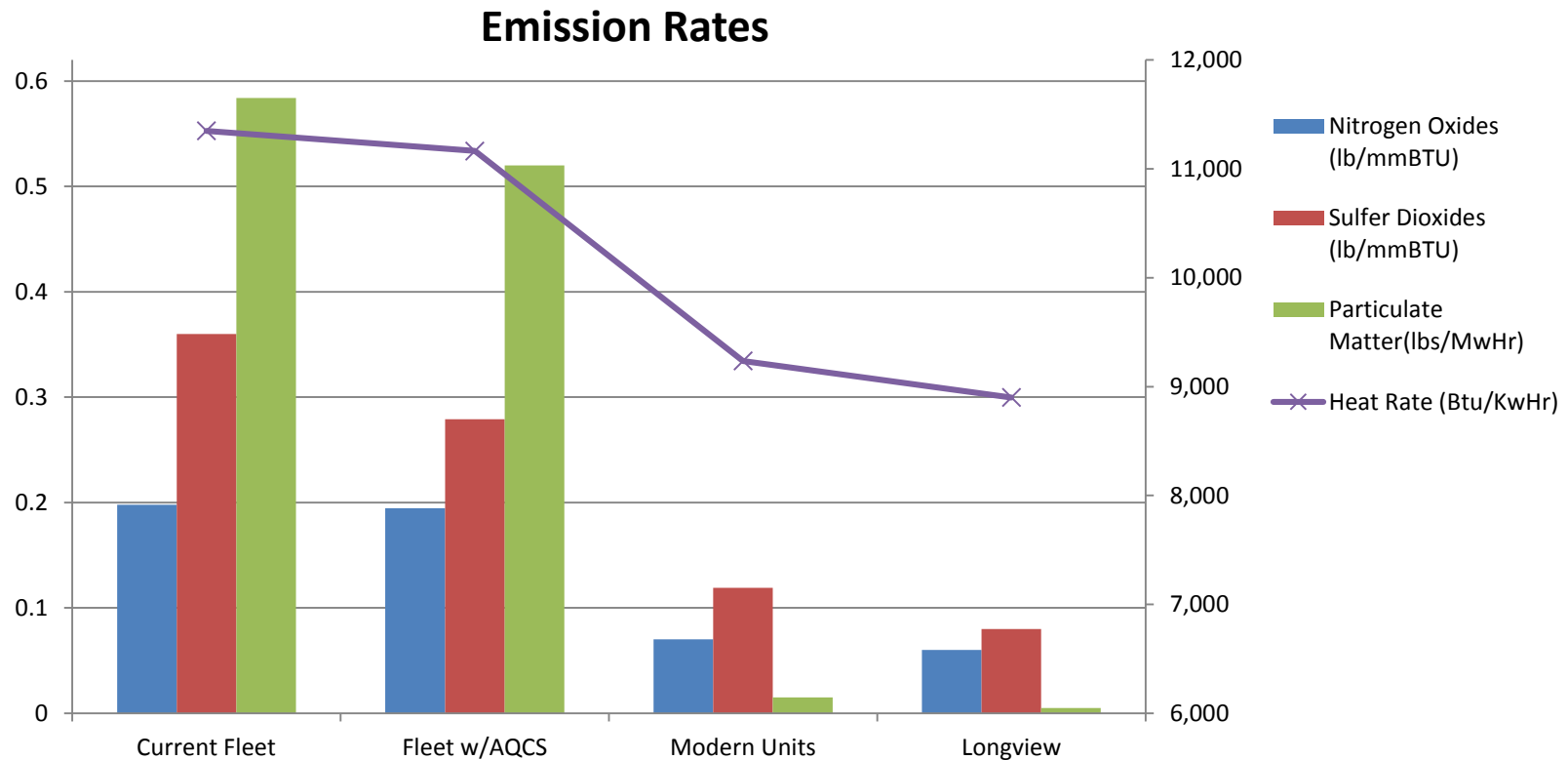


Longview data based on consolidated marginal cost of production of Longview and Mepco (Utility Plant data from SNL)
Longview marginal cost close to the cost of non-dispatchable, subsidized renewables

Longview reliably provides low-cost clean coal electricity

Longview- Clean Coal with Very Low Emissions

Modern Highly Efficient Plants have very low emissions.



Permit Limits for Modern Units. Actuals likely lower by 10 to 20%
Source: SNL and EPA

Longview's actual emissions are well below its permitted limits

Strategic Fuel and Byproducts Disposal

- » Longview's competitive position is driven by low-cost fuel supplied by Mepco, its affiliate coal company, from mine mouth to the plant by a 4.5 mile conveyor, minimizing environmental and community impacts
- » Longview minimizes water requirements to less than 5,700 gpm on average and reuses water in plant processes so that it only discharges about 30 gpm for treatment through an AMD treatment facility operated by Mepco
- » Mepco owns and operates two underground and one surface mine
- » Mepco produces 3.6 million tons of coal per year for both Longview and Fort Martin
- » Longview recycles its ash and Mepco's environmentally compliant beneficial reuse facility provides a long term solution for ash and gypsum byproducts disposal for two power plants



Low cost fuel supplied by conveyor minimizes environmental and community impacts

Longview- Economic Impacts/Community Benefits

- » Longview and Mepco together employ over 600 workers providing high-paying jobs with combined annual payroll and benefits of approximately \$72 million
- » Longview uses locally sourced coal and limestone
- » Longview and Mepco purchase over \$105 million per year of goods and services from local and regional vendors
- » Longview and Mepco collectively contribute almost \$8 million in annual PILOT and local tax payments
- » Longview and Mepco support a number of local and regional initiatives to enhance the environment and support our communities

Longview is a major economic driver in northern West Virginia and southwestern Pennsylvania

Longview- Best in Class Results

» High Equivalent Availability Factor (EAF) and Reliability

- Plant is continuing highly reliable service – 98% average EAF and 92% CF since rehab completed
- 2015 “sister units” (new supercritical units) Capacity Factors = 66.9%

» Efficiency

- Heat rate since rehabilitation completion is averaging < 8,900 btu / kWhr
- 2015 annual (all-in) heat rate including all outages and start-ups was 9,019 btu / kWhr better than #1 ultra critical plant (Turk) reported heat rate of 9,038 btu / kWhr

» Output and Dual Fuel Capability

- Rated output is 700 MW but unit can operate at 710+ MW for durations that demonstrate full unit capability
- Unit co-fires natural gas for up to 20% of heat input without additional upgrades or costs

» Emissions Performance

- Conventional pollutants are well below permit limits (PM @ 3.1% of limit, SO₂ @ 84%, Hg @ 23%)
- Current CO₂ net output is approx. 1900 lbs/MwHr (coal fleet average ~ 20% higher)
- The WV 2030 CPP limit (1305) could come close to being achieved with 50% co-firing (plant modifications would be required)



Clean Coal = High availability and reliability with very low emissions

Longview- The Model for the Future of Coal

- Longview demonstrates what modern clean coal-fired plant design and operation can be with full environmental compliance
- Longview should be the future of coal – low cost, very clean and highly reliable



High Efficiency/Very Low Emissions Coal Plant