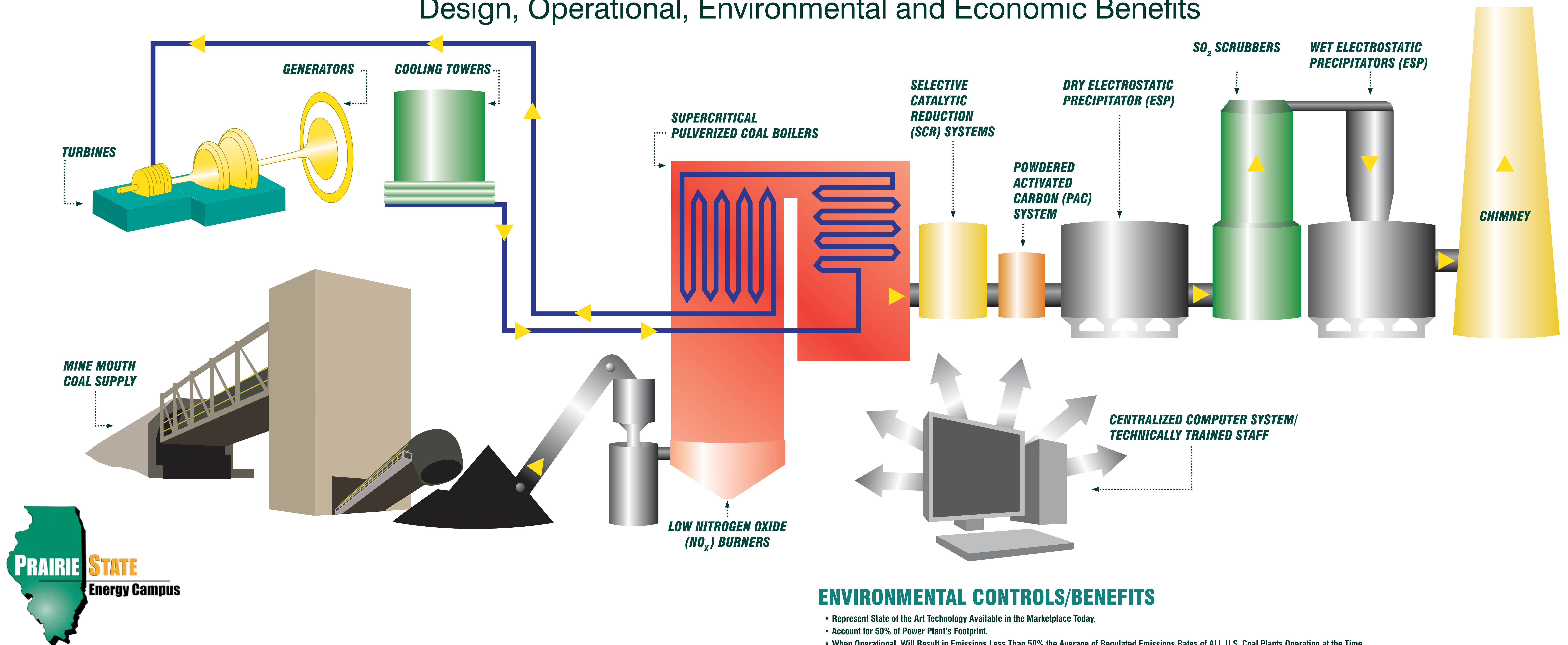


Prairie State Energy Campus

21st Century Technologies

Design, Operational, Environmental and Economic Benefits



FUEL SUPPLY

MINE MOUTH COAL SUPPLY

- On-Site Coal Supply Adequate to Operate the PSEC for Over 30 Years.
- Significantly Reduced Labor & Transportation Costs Associated With Delivery of Coal From On-Site Mining Facilities.
- Estimated CO₂ Emission Reductions of 200,000 Tons/Year Associated With Transportation and Delivery of Coal From On-Site Facilities.

POWER PRODUCTION

CENTRALIZED COMPUTER SYSTEM/TECHNICALLY TRAINED STAFF

- The PSEC Will Utilize a Centralized Computer System to Control the Operation of All Facilities and Equipment at the Plant.
- Plant Operators Are Trained and Certified in the Operation of ALL Aspects of the Plant's Facilities, Equipment and Processes.

SUPERCritical PULVERIZED COAL BOILERS

- Most Efficient Boilers on the Market Today Resulting in Fewer Emissions per kWh.
- Modern Technology Grinds Coal to Powder-Like Consistency, Used as Fuel for the Boilers to Heat Water and Produce High Pressure Steam.
- Boilers Run at Higher Temperatures Decreasing the Amount of Coal Required by 15%, Associated Carbon Dioxide (CO₂) Emissions/kWh by 15% and Coal Combustion Byproducts by 15%.

TURBINES

- Most Efficient Turbines in the Market Today.
- The Plant's Turbines Will Consist of Fan-Type Blades Attached to a Shaft That is Rotated by Steam From the Boiler, Converting the Kinetic Energy of the Steam Into Mechanical Energy.

GENERATORS

- Prairie State Will Utilize Two 800 Megawatt Generating Units Enhancing System Reliability.
- Facility Will Operate at an Average 90% Capacity Factor.
- These Generators Will Transform the Mechanical Energy Into Electrical Energy That Will be Distributed Over the Nation's Electric Transmission System, ...Providing Electricity to Over 1.5 Million Households in Eight States.

COOLING TOWERS

- Condensed Steam From the Generators is Cooled Through a High Efficiency Water Evaporation System and Recycled Back Into the Plant for Reuse.
- Water Vapor is Emitted From the Cooling Towers During This Process.

CHIMNEY

- Dissipates Heat and Air Emissions From the Generation Process.

ENVIRONMENTAL CONTROLS/BENEFITS

- Represent State of the Art Technology Available in the Marketplace Today.
- Account for 50% of Power Plant's Footprint.
- When Operational, Will Result in Emissions Less Than 50% the Average of Regulated Emissions Rates of ALL U.S. Coal Plants Operating at the Time.
- CO₂ Emissions Approximately 15% Lower Than Typical US Coal Plants.
- Mercury Emissions Within Regulated Requirements.
- Sulfur Dioxide (SO₂) Removal Rates the Highest of Any Permitted Plant in the United States Due to its Supercritical Technology.

LOW NITROGEN OXIDE (NO_x) BURNERS

- Impede the Formation on Nitrogen Oxides by Controlling the Way Coal Combusts.
- Lower Temperatures of the Burners Flames' Control the Way the Coal Combusts.

SELECTIVE CATALYTIC REDUCTION (SCR) SYSTEMS

- Will Further Control PSEC Nitrogen Oxide (NO_x) Emissions
- SCR Systems Will Inject Ammonia into Air Stream as it Passes Over a Catalyst Causing Nitrogen Oxides (NO_x) to be Converted to Nitrogen and Water, Reducing NO_x Emissions.
- PSEC NO_x Emissions Will be Less Than One Half the Average Annual Emission Rates of Illinois Electric Generators and Less Than One-Third the Average Annual Emission Rates of All U.S. Electric Power Generators.

POWDERED ACTIVATED CARBON (PAC) SYSTEM

- A Powdered Activated Carbon (PAC) System Will Also Reduce PSEC Mercury Emissions and Other Air Toxics.
- PSEC Mercury Emissions Will Meet Illinois Regulatory Requirements, One of the Strictest in the Nation.

DRY ELECTROSTATIC PRECIPITATOR (ESP)

- The Dry Electrostatic Precipitator (ESP) Removes 99.9% of Particulates From the Air Stream in Addition to Some Mercury.
- The Dry ESP Uses Electrodes to Place an Electric Charge on the Particulates, Which Are Captured on an Oppositely Charged Plate. The Particles Are Then Shaken From the Plates for Final Collection.

SO₂ SCRUBBERS

- Sulfur Dioxide (SO₂) is Minimized by an Advanced System Known as a "Scrubber". This System Injects a Limestone and Water Mixture Into the Air Stream, Where it Reacts to Capture or "Scrub" 98% of the SO₂ from Emissions. Scrubbing Also Controls Mercury.

WET ELECTROSTATIC PRECIPITATORS (ESP)

- The Air Stream Passes Through the Wet Scrubber Into a Wet Electrostatic Precipitator (ESP), Which Removes Fine Particulates and Other Constituents. Wet ESPs Use Multiple High Voltage Fields to Attract the Particulates to an Electrode, Which is Washed With Water to Capture the Constituents, Including Some Mercury.

ECONOMIC BENEFITS

\$4 Billion Investment

- Largest Power Plant Under Construction in the United States Today.
- Second Largest Capital Project in Illinois in the Past 10 Years.
- 500 Permanent, High-Paying, Skilled Jobs.
- Stimulating the Creation of Another Estimated 860 Jobs in Illinois.
- Contributes More Than \$785 Million Annually in Economic Activity in Illinois and is Projected to Stimulate an Estimated \$23.6 Billion Over 30 Years.