

Gilberton Coal-to-Clean Fuels and Power Co-Production Project

Project Presentation



Clean Coal Power Initiative - Round 1 -

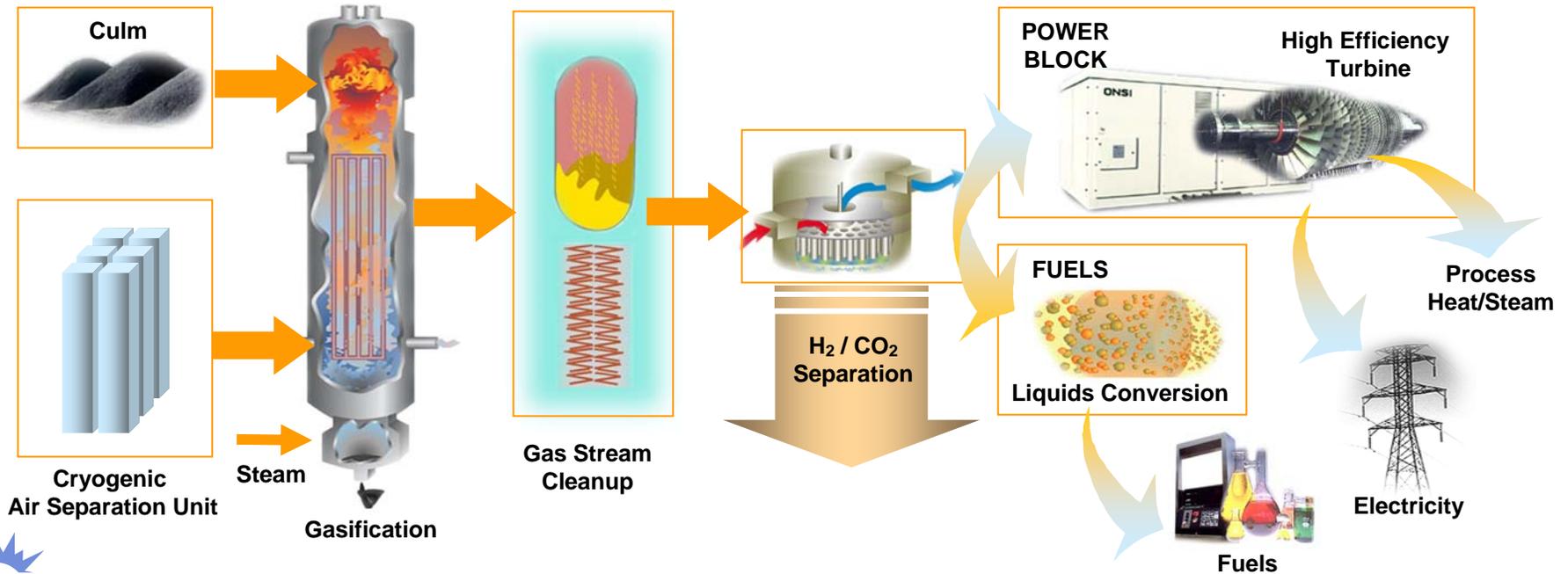
Demonstration of an Integrated
Gasification, Power, and Clean
Fuels System

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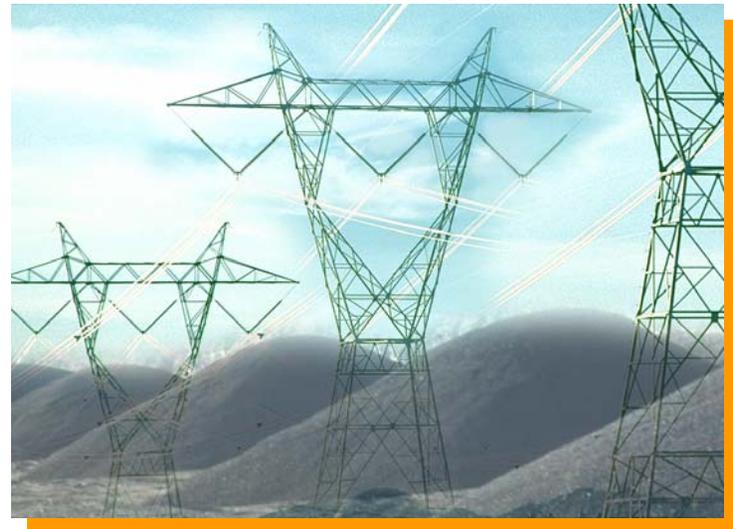
Waste Management and Processors Inc. (WMPI PTY., LLC)

- First power plant in the United States gasifying waste-coal to produce clean electrical power, thermal energy, and liquid fuels
- Project enhances Nation's energy security by producing liquid transportation fuels



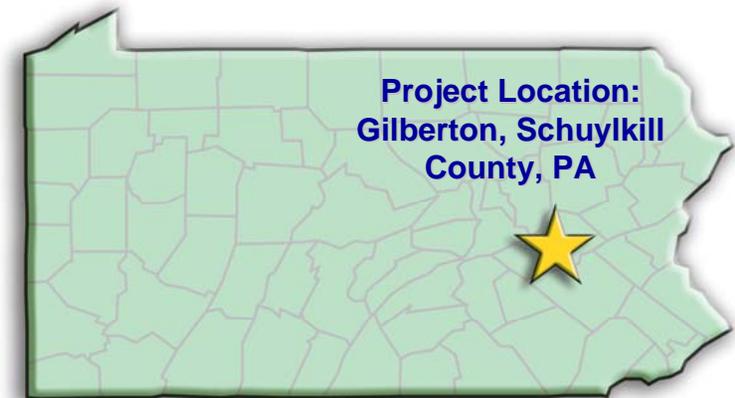
Waste Management and Processors Inc. (WMPI PTY., LLC)

- Fischer-Tropsch (FT) technology converts 4,700 tons/day of coal waste into 41 MWe and 5,000 barrels/day of ultra-clean fuel
- Total project cost: \$612 million;
DOE share: \$100 million



Background

- **WMPI PTY., LLC has assembled a leading technology and engineering team to demonstrate economical conversion of domestic waste coal into high value products Including**
 - Diesel
 - Naphtha
 - Jet fuel
 - Steam & power
- **Project Location: Gilberton, Schuylkill County, PA**



Background (continued)

- **Team Members**

- WMPI PTY., LLC
- Nexant Inc., an affiliate of Bechtel Corporation
- Shell Global Solutions B.V., U.S., an international energy company with a major presence in coal gasification technology
- Uhde GmbH., a global engineering company and authorized Shell gasification supplier and contractor
- SASOL Technology Ltd., a world leader in FT liquefaction technology



Technology Advantages

- **Integration of IGCC and FT technologies using coal wastes**
 - Produce a synthesis gas (syngas) of hydrogen and carbon monoxide
 - Produce electric power and steam
 - Produce hydrocarbon liquids via FT synthesis
- **Combining Shell gasifier and Rectisol™ process removes contaminants from plant's effluent to very low levels**
- **Will produce ultra-clean (sulfur free) transportation fuels**
- **Demonstrates potential for future CO₂ capture and sequestration**
- **Near-term product marketability**



Project Schedule

- **NEPA Process**
 - EIS in progress
- **Design**
 - To be determined
- **Construction**
 - To be determined
- **Commission and Startup**
 - To be determined



Conclusions

- Long-standing reclamation problem of existing coal waste piles will be solved and operating mine waste disposal activities will be significantly reduced
- A unique integration of technologies will convert 4,700 tons/day of coal waste into 41 MWe of clean power and 5,000 barrels/day of ultra-clean transportation fuels
- Approximately 1.4 million tons per year of waste coal (clum) will be processed at Gilberton
- Technology could be applied across the United States enabling land reclamation on a broad scale



Conclusions (continued)

- **FT process will produce ultra-clean transportation fuels containing no sulfur or aromatics**
 - High-cetane diesel fuel to be used in Pennsylvania state vehicles
 - Naphtha can be upgraded to clean-burning reformulated gasoline and is an excellent feedstock for olefin production or reforming feed for fuel cells
 - Jet fuel
- **Process flexibility allows use of coal, coal wastes, petroleum coke, or biomass, alone or as blends**
- **This project brings our Nation one step closer to energy independence**

