

Southern Ohio Diversification Initiative



COMBINED CYCLE GAS TURBINE (CCGT) FACILITY

PORTS REFERENCE CCGT

Capacity: 1,000 MW (1 GW)

Estimated Cost: \$900 million

Employment per IMPLAN Analysis:

Туре	Construction	Operation
Direct	500	25
Indirect	68	23
Induced	106	23
Total	673	71

Economic Indicator	Construction (Typically 30 Months)	Operations (Typically 30 years)
Total Annual Average Jobs	673	71
Total Value Paid to Workers	\$25,461,521	\$5,490,546
Gross Regional Product	\$37,314,487	\$26,923,439
Direct Industry Product	\$73,324,451	\$53,159,861

PORTS has the electrical grid capacity (4,860 MW) to support about 5 Referenced CCGT's, which excludes on-site electrical demand.

Cooling Water Requirement for Reference CCGT: ~8 MGPD during summer, assuming a closed loop cooling system employing a wet cooling tower.

NATURAL GAS (NG) SUPPLY AT PORTS

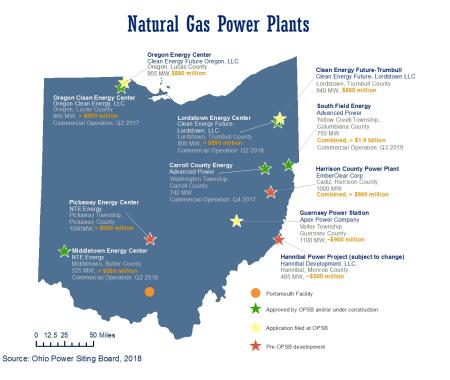
NG supplier: Purchased from Sage Energy and conveyed by Pike Natural Gas PORTS NG pipeline: 8 inch diameter underground line at 100 PSI, capacity 19,762 cfm. PORTS to main NG line: 110,890 Ft or ~21 miles. NG right-away info: width, max diameter pipe, lines sizes between PORTS and main line.

NATURAL GAS (NG)REQUIREMENTS FOR REFERENCED CCGT

PORTS has the electrical grid capacity (4,860 MW) to support about 5 Referenced CCGT's, which excludes on-site electrical demand.

- 90% duty cycle (capacity factor
- Net heat rate = 6500 kJ/kWh = 6500 MJ/MWh = 6 500 000 MJ/GWh
- Calorific value of natural gas = 9.8 kWh/m3 or 35.2 MJ/m3

Gas required per annum at 90% duty cycle = 1,455,872,273 m3 = 51,413,644,110 cf One trillion cubic feet of gas would thus provide 1,000 MW of power for approximately 20 years



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Our Mission for the Southern Ohio Diversification Initiative (SODI) is to improve the quality of life for Jackson, Pike, Ross, and Scioto Counties through economic diversification, development of underutilized land and facilities on the Department of Energy (DOE) Portsmouth Gaseous Diffusion Plant Site, and continued support of local industry.

References

Combined Cycle Power Plant Proposed for Eastern Ohio, Editors of Power Engineering, Power Engineering, Sep 24, 2016

Massive Expansion of Gas Power Set for Ohio, Barry Cassell, Energy Times, Jun 06, 2017

Economic Impact Analysis for Proposed Integrated Energy System (IES) Complex at PORTS, PORTS future, Ohio University, Voinovich School of Leadership and Public Affairs, 2017

Ohio Power Siting Board, www.opsb.ohio.gov

List of power stations in Ohio, Wikipedia, https://en.wikipedia.org/wiki/List_of_power_stations_in_Ohio Gas to electric power generation potential, Mike Rycroft, Energize, September 19, 20146

Piketon Ohio Pipeline Information, United Technologies International Corporation (UTI), April 14, 2017