

Ares EIF Management affiliate pursues 1,060-MW gas project in Virginia

This will be a two-on-one combined-cycle station

10/18/2016 by Barry Cassell

The Virginia State Corporation Commission is in the early stages of processing a Sept. 14 application from **C4GT LLC** for a certificate of public convenience and necessity to construct and operate a combined-cycle station, with a net nominal generating capacity of 1,060 MW, in Charles City County, Virginia.

The facility will operate as an independent merchant power plant to supply electricity on a wholesale basis to the electricity markets in Virginia and surrounding regions. It will qualify as an exempt wholesale generator (EWG) under the Public Utility Holding Company Act of 1935, as amended.

C4GT was formed for the purpose of developing, constructing, owning, and operating the facility. C4GT has retained **NOVI Energy LLC** to support and manage all development actions for this project. NOVI Energy provides a broad range of services in energy management and energy infrastructure development for industrial, institutional, commercial and utility companies located throughout the world.

Development of the C4GT Facility will be funded by **Ares Charles City LLC**, which was established to invest in C4GT. Ares Charles City LLC is an affiliate of **Ares EIF Management LLC**. Ares EIF has a 29-year track record of investing in power and energy infrastructure assets. Since inception, Ares EIP-managed funds have made approximately 70 equity investments in nearly 130 different power and energy infrastructure assets with a combined underlying enterprise value exceeding \$20 billion. Ares EIF-managed funds are experienced investors in new-build generation and transmission in the United States.

C4GT intends to construct, operate, and maintain the facility in Charles City County at 3001 Roxbury Road. The site is located along Roxbury Road (State Route 106), approximately 2,000 feet north and west of its intersection with Chambers Road (State Route 685). The site is located approximately one half mile from the Roxbury Industrial Park and less than one mile from the existing Chickahominy substation owned by **Virginia Electric and Power d/b/a Dominion Virginia Power**. The site is comprised of approximately 88 undeveloped acres.

The facility intends to interconnect to Virginia Electric's transmission grid at either the 230 kV or 500 kV voltage levels at the Chickahominy substation via new lines from the power plant site. The facility will procure natural gas from a 16-inch **Virginia Natural Gas** intrastate natural gas transmission line located along the eastern edge of the site.

This will be a two-on-one combined-cycle station, with a net nominal generating capacity of 1,060 MW at 95 degrees F ambient temperature, consisting of two natural gas-fired combustion turbine generators with downstream natural gas supplementally-fired heat recovery steam generators (HRSGs). The steam that is generated in the HRSGs is to be used in a steam turbine generator for additional power output and increased thermal cycle efficiency.

Developer would use either GE or Siemens gas turbines

C4GT is seeking the option to install either of these H-class combustion turbines: the **General Electric** 7HA.02 or the **Siemens** SGT6-8000H (1.4+). Regardless of the manufacturer that ultimately is selected for the turbines, the power island would consist of combustion turbines, a steam turbine, and HRSGs. The combustion turbines will be fired with natural gas and will be furnished with low NOx burners. The combustion turbines will be furnished with evaporative inlet air cooling to lower the inlet air temperature during periods of high ambient temperature.

Each HRSG will include a natural gas-fired duct burner to increase steaming capacity. Each HRSG will be furnished with superheating, reheating, and economizer sections required to achieve a highly efficient removal of heat from the combustion turbine gas stream, and achieve a low stack gas temperature.

Nitrogen oxide (NOx) emissions from each of the combined cycle combustion turbine generators (CTGs) and associated duct-fired HRSGs will be controlled by dry low-NOx burners in the CTGs, with selective catalytic reduction (SCR) in the HRSG. An oxidation catalyst section located within each HRSG will reduce the quantity of carbon monoxide (CO) and volatile organic compounds (VOC) exiting the stack. Particulate matter and sulfuric acid emissions are minimized by the use of pipeline quality natural gas as fuel.

The steam turbine will have a nominal generating capacity of 356 MW-473 MW, depending on the manufacturer selected, and will be a single shaft turbine with high pressure/intermediate pressure (HP/IP) turbines and a low pressure (LP) turbine discharging to the condenser. Main steam will enter the HP turbine, and will exit back to the cold reheat section of each HRSG.

Although C4GT does not have a power purchase agreement with Virginia Electric for the output of the facility, the utility's forecasted capacity gap demonstrates the need for Virginia-based capacity resources, the application said. Moreover, another utility serving Virginia, **Appalachian Power**, has recently forecasted that its total internal energy requirements to increase at a compound average growth rate (CAGR) of 0.3% through 2030. In 2020 Appalachian Power is anticipated to experience a capacity shortfall based upon its own assumptions regarding the tuning and parameters of PJM's Capacity Performance rule. Although C4GT said it does not have a power purchase agreement with Appalachian Power for the output of the facility, Appalachian Power's forecast also supports the assertion that additional capacity resources are required in the Commonwealth.

One initial step for the project in the commission's review process came on Oct. 18, when the Virginia Department of Environmental Quality filed a wetlands impact report. According to an onsite wetland and stream preliminary jurisdictional determination by the U.S. Army Corps of Engineers on Aug. 18, wetland areas and stream corridors were identified within the project area. The preliminary jurisdictional determination located approximately 10.65 acres of wetlands and 700 linear feet of waters within the project area. The presence of these resources was derived from review of on-site conditions by **Environmental Consulting & Technology Inc.** Appropriate state and federal permits must be obtained if unavoidable impacts to jurisdictional waters are required for project construction. The DEQ Piedmont Regional Office will make the final permitting decisions, the report noted.

Also, on Oct. 5, the Virginia DEQ advised the commission about its air impact review for the project. As is customary in power project reviews, and in keeping with a prior agreement, the DEQ requires 60 days, following receipt of sufficient copies of a complete application document, to initiate the coordinated review of the application and prepare its report to the SCC staff. The review period began on Oct. 4 and final review comments will be submitted to the SCC on or before Dec. 2, barring an unforeseen suspension of the review for additional information.

A project contact is: C4GT LLC, 23955 Novi Road, Novi, Michigan 48375, Attn: Anand Gangadharan, Tel: (248) 735-6684, agangadh@novienergy.com.

Notable is that **PJM Interconnection** has posted to its website an August 2016 Feasibility Study. This preliminary study, as per PJM custom, does not name the project company. But the details of the project match the C4GT project. The intent of the Feasibility Study is to determine a plan, with high level estimated cost and construction time estimates, to connect the subject generation to the PJM network at a location specified by the unnamed project developer.

The developer has proposed a natural gas-fired combined-cycle facility located in Charles City, Va. The installed facilities will have a total capability of 1,060 MW with 1,060 MW of this output being recognized by PJM as capacity. The proposed in-service date for this project is March 31, 2020. This study does not imply a Virginia Electric commitment to this in-service date. This project, under PJM queue #AB2-068, will interconnect with the Virginia Electric system at one of the following points of interconnection: Option 1 will connect via a new three breaker ring bus switching station that connects at the Chickahominy 500-kV substation. Option 2 will connect via a new three breaker ring bus switching station that connects at the Chickahominy 230-kV substation open bay.

ABOUT THE AUTHOR

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Barry Cassell is Chief Analyst for *GenerationHub* covering coal and emission controls issues, projects and policy. He has covered the coal and power generation industry for more than 26 years, beginning in November 2011 at *GenerationHub* and prior to that as editor of SNL Energy's *Coal Report*. He was formerly with *Coal Outlook* for 15 years as the publication's editor and contributing writer, and prior to that he was editor of *Coal & Synfuels Technology* and associate editor of *The Energy Report*. He has a bachelor's degree from Central Michigan University.

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