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BEFORE THE ENERGY RESOURCES CONSERVATION AND DEVELOPMENT
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*APPLICATION FOR CERTIFICATION FOR THE:
ALAMITOS ENERGY CENTER*

Docket No. 13-AFC-01

ENERGY COMMISSION STAFF OPENING BRIEF: EVIDENTIARY HEARING PART 2

At the conclusion of the Alamos Energy Center (AEC) evidentiary hearing covering the Final Staff Assessment, Part 2 (FSA2), the assigned Committee provided an opportunity for parties to file opening briefs. Staff offers the following discussion of key issues raised by the parties at the evidentiary hearing.

Introduction

FSA2 covered the topics of Air Quality/Greenhouse Gases and Public Health. This opening brief addresses the Los Cerritos Wetlands Trust's (Trust) argument that Greenhouse Gas (GHG) emissions from the operations of AEC would be inconsistent with state laws, ordinances, regulations or standards (LORS) and that the operation of AEC would serve as an impediment to achieving the state's GHG goals (Exh. 3076, pp. 2-3, 9-10).

While the AEC would emit GHGs, the facility would operate within the requirements of all LORS and support the state's objectives to reduce overall GHG emissions to 40% below 1990 levels by 2030 and eventually 80% below 1990 levels by 2050 (Exh. 2014,

pp. 4.1-178 to 4.1-179). The pertinent state LORS identified in the FSA include (Exh. 2014, p. 4.1-174):

- 1) California Global Warming Solutions Act of 2006, (Stats. 2006; Chapter 488; Health and Safety Code sections 38500 et seq.) and California Code of Regulations, Title 17, section 95100 et. seq. (Collectively AB 32)
- 2) Title 20, California Code of Regulations, Section 2900 et seq.; CPUC Decision D0701039 in proceeding R0604009 (Collectively SB 1368)

In addition, the Commission's Avenal decision (08-AFC-1), requires a finding that any new natural gas-fired power plant certified by the Energy Commission must: *not increase the overall system heat rate for natural gas plants; not interfere with generation from existing renewables or with the integration of new renewable generation; and taking into account the two preceding factors, reduce system-wide GHG emissions* (Exh. 2014, p. 4.1-181).

Discussion

Because GHG emissions from a power plant's operation have global rather than local effects, emissions are assessed not only at the plant level, but more importantly, in the context of operation of the entire electricity system of which the plant would be an integrated part (Exh 2014, p. 4.1-175). The Trust mistakenly treats permitted emissions as actual emissions, and the AEC project's emissions as additive to the state's GHG emissions profile, especially the generation above 640 MW.

The FSA Part 2 alleges that the operation of AEC combined cycle block will reduce the use of higher GHG---emitting resources somewhere in the WECC, as if this would excuse the emission of 1,211,313 tons per year of GHGs from the AEC combined cycle block. The FSA Part 2 provides no information to support this claim (Exh. 3076, p. 3).

There is no need for the proposed 1040 MW of gas fired generation now, and everything over 640 MW is purportedly being constructed for future needs. There is no "market incentive" to "innovate" in the future if this Commission allows development of the additional gas---fired generation now (Exh. 3076, p. 10).

An individual source of GHG needs to be considered within the entire system, which for the electricity grid, includes the Western US electricity sector (Exh. 2014, pp. 4.1-172 and 4.1-195). Due to market dispatch and the preference for utilizing renewable and more efficient resources, new fossil generation tends to displace older less efficient generation, but not renewable generation (Exh. 2014, p. 4.1-191, See also footnote 15). AEC will only operate when there is a specific need for its generation or integration services that cannot be met by a cheaper and more efficient resource. Thus, GHG emissions produced by AEC are not incremental additions to system-wide emissions, but are offset by reductions in GHG emissions from those generation resources that are displaced, including the existing and operating Alamos Generating Station (Exh. 2014, p. 4.1-191).

Empirical evidence supports this finding. From 2001-2010, there was a 22 percent reduction in GHG emissions from in-state generators despite a 3.5 percent increase in California fossil-fueled generation (Exh. 2014, p. 4.1-187 and 4.1-192).

Another important factor to consider when assessing systematic GHG emissions is operating flexibility. AEC would be capable of starting rapidly and often, operating over a broad range of output levels, ramping quickly, which allows it to be off-line until shortly before being needed for grid reliability, renewables integration or peak capacity. As a result, it would allow for more renewable generation, with the concomitant reduction in GHG emissions (Exh. 2014, p. 4.1-195).

AB 32

AB 32 was the state's initial effort to develop systems-based framework for addressing GHG emissions from various sectors of the California economy, including energy generation. As discussed below, the proposed AEC project complies with this legislation and will participate in related programs (Exh. 2014, pp. 4.1-178, 4.1-183).

Under AB 32, and implementation programs developed by the Air Resources Board (ARB), AEC would be required to participate in California's GHG cap-and-trade program. Participants such as AEC are required to report their GHG emissions and to obtain GHG emissions allowances (and offsets) for those reported emissions by purchasing allowances from the capped market and offsets from outside the AB 32 program. As new participants enter the market and as the market cap is ratcheted down over time, offset prices will increase, encouraging innovation by market participants to reduce their GHG emissions. Thus, AEC, as a GHG cap-and-trade participant, would be consistent with California's AB 32 program (Exh. 2014, pp. 4.1-178, 4.1-183).

Conditions of Certification **AQ-E6**, **AQ-E7**, **AQ-E8**, **AQ-E9**, and **AQ-E10** ensure the project owner tracks GHG emissions from project operations to meet AB 32 and federal reporting requirements (Exh. 2014, p. 4.1-186).

SB 1368

SB 1368, enacted in 2006, and regulations adopted by the Energy Commission and the CPUC pursuant to that bill, prohibits California utilities from entering into long-term commitments with any base load facilities that exceed the Emission Performance Standard (EPS) of 0.5 metric tonnes CO₂ per megawatt-hour (1,100 pounds CO₂/MWh) (Exh. 2014, p. 4.1-178). *Base load* units are defined as units that are expected to operate at a capacity factor of 60 percent or higher (Exh. 2014 p. 4.1-178).

For the AEC, the plant capacity factor for both the combined-cycle and simple-cycle turbines are each expected to be below 60 percent. Therefore, the AEC would not be subject to SB 1368 Greenhouse Gas Emission Performance Standard of 0.500 MTCO₂/MWh (Exh. 2014, p. 4.1-180, See Table 3).

The combined-cycle portion of AEC could potentially approach a 60 percent capacity factor, but that portion of the facility would easily comply with SB 1368 as the combined-cycle portion would have a performance standard of 0.44 MTCO₂/MWh (Exh. 2014, p. 4.1-180, See Table 3).

Avenal decision (08-AFC-1)

Besides consideration of the AB 32 and SB 1368 requirements, staff included in its sector-wide GHG emission analysis a determination of whether operations of AEC are consistent with the Avenal precedent decision, which requires a finding that any new natural gas-fired power plant certified by the Energy Commission must:

- 1) *not increase the overall system heat rate for natural gas plants;*
- 2) *not interfere with generation from existing renewables or with the integration of new renewable generation; and*
- 3) *taking into account the two preceding factors, reduce system-wide GHG emissions* (Exh. 2014, p. 4.1-181).

AEC's operation is expected to result in a reduction in the system heat rate for natural gas plants due to its displacing energy from less-efficient natural gas-fired generation (Exh. 2014, p. 4.1-196).

AEC would not interfere with generation from existing renewable facilities or with the integration of new renewable generation. The flexible nature of AEC would in fact serve to facilitate the integration of additional variable renewable resources (Exh. 2014, p. 4.1-196).

The AEC project meets the Avenal decision because, as noted above, the energy provided by any new generation resource simultaneously displaces exactly the same amount of energy, but not the same amounts of fuel use and GHG emissions, from an

existing resource or resources. The GHG emissions produced by AEC are thus not incremental additions to system-wide emissions, but are offset by reductions in GHG emissions from those generation resources that are displaced. The operation of the system, so as to meet the demand for electricity at the lowest cost and best reliability, leads to a reduction in system-wide GHG emissions if AEC is added (Exh. 2014, pp. 4.1-191, 4.1-194).

Conclusion

Contrary to the claims by the Trust, the proposed AEC project is compliant with GHG related LORS and supports California's efforts to reduce GHG emissions on a statewide and worldwide basis. In addition to displacing less efficient fossil fuel generation, AEC's relatively efficient fast-start, fast-ramping capabilities, further contribute to GHG emission reductions by increasing the amount of renewable energy that can be integrated into the electricity system.

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Respectfully submitted,

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