

## DOCKETED

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## **Comments of Robert Simpson on the Preliminary Staff Assessment (PSA) of the Amended Carlsbad Energy Center Project**

Robert Simpson submits the following comments on the Preliminary Staff Assessment of the Amended Carlsbad Energy Center Project.

### **Air Quality/Greenhouse Gases: Federal NSPS**

Mr. Simpson has serious concerns about the relationship of the Carlsbad Energy Center Project (CECP) and the proposed New Source Performance Standards (NSPS) for greenhouse gas emissions for new electric power plants from the Environmental Protection Agency (Federal Register, Volume 79, No. 5). As the CECP project is described in the PSA, it would appear as though it is designed specifically to skirt those rules even though, based on the data in the PSA, the CECP will emit carbon dioxide (CO<sub>2</sub>) in excess of NSPS standards.<sup>1</sup>

According to the new NSPS standards, “large natural gas-fired stationary combustion turbines” may emit no more than 1,000 lbs. of CO<sub>2</sub> per MWh and “small natural gas-fired stationary combustion turbines no more than 1,100 lbs. of CO<sub>2</sub> per MWh.” (PSA Air Quality Appendix, p. 9) A “large natural gas-fired stationary combustion turbine” is defined as one with heat input ratings greater than 850 MMBtu/h while a “small” one is less than that number. (PSA Air Quality Appendix, p. 9) Since the CECP turbines all have heat ratings of 984 MMBtu/h (PSA, page 4.1-70), the CECP would fit neatly into the “large” category, thereby limiting its CO<sub>2</sub> emissions to 1,000 lbs. CO<sub>2</sub>/MWh.

In order for the NSPS standards to apply to single-cycle turbines such as those contemplated at the CECP, the generating unit must supply “more than one-third of its potential electric output and more than 219,000 MWh net electric output to the grid per year.” (PSA Air Quality Appendix, p. 9) The CECP easily meets the minimum 219,000 MWh net electric output standard since it will produce more than *seven times* that amount with 1,763,159 MWh per year. (PSA Air Quality Appendix, Greenhouse Gas Table 3, p. 12) As currently described in the PSA, the CECP does not quite meet the “one-third of its potential electric output” standard as it is permitted by the San Diego Air Pollution Control District for a 30.8% output. (PSA Air Quality

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<sup>1</sup> The EPA anticipates that the proposed NSPS rules will be finalized during the summer of 2015, at which time those rules will go into effect. See <http://www2.epa.gov/carbon-pollution-standards/fact-sheet-clean-power-plan-carbon-pollution-standards-key-dates>.

Appendix, p. 10) Nevertheless, given that the 30.8% CECP output is so close to the 33% NSPS standard, it strains credulity to think that the 30.8% number was chosen as anything other than a way to avoid complying with federal regulations. This is even more apparent considering, as shown above, that the electric output is *seven times* the NSPS standard and, as will be shown below, the CECP is already expected to violate the new CO<sub>2</sub> emission standard even while operating slightly below the NSPS listed capacity.

As mentioned previously, given its 984 MMBtu/h heat rating, the CECP would be subject to an emissions limit of 1,000 lbs. CO<sub>2</sub>/MWh. The PSA lists the CECP's "Expected CO<sub>2</sub> Emissions Performance" as 0.5026 Metric Tonnes of CO<sub>2</sub>/MWh. (PSA Air Quality Appendix, Greenhouse Gas Table 3, p. 12) Converting metric tonnes to pounds, where one metric tonne equals 2,204.6 lbs., we find that the CECP's CO<sub>2</sub> emissions output is 1,108 lbs. CO<sub>2</sub>/MWh, a number that would violate the NSPS standard for the CECP's type of generating unit. Indeed, the PSA itself notes that the CECP would exceed the standard when it states "The estimated operating gross and net efficiency for the gas turbines, not including the other emissions sources at the site that are shown in the table above, *is expected to just be above these values* [of 0.500 MTCO<sub>2</sub>/MWh and 0.454 MTCO<sub>2</sub> per MWh gross] (approximately 0.503 MTCO<sub>2</sub>/MWh net, and 0.486 MTCO<sub>2</sub>/MWh gross – LL 2014nn)." (PSA Air Quality Appendix, p. 12) Therefore, the CECP will emit CO<sub>2</sub> at a rate that would violate the new NSPS standards.

Mr. Simpson understands that the 30.8% potential electric output rating placed on the CECP means it does not, technically speaking, need to comply with the NSPS standards for CO<sub>2</sub> emissions. However, Mr. Simpson urges the CEC to look at this from a more pragmatic perspective. That 30.8% output rating is a mere 2.2% below the 33% NSPS standard meaning that the CECP misses the federal threshold by the most miniscule of margins. Moreover, the CECP operates with a net electric output that is *seven times* the minimum contemplated by the NSPS standards. With the closeness of the output rating and the significantly higher net electric output, the CEC should view the CECP as a project that will, for all intents and purposes, operate at levels in violation of the NSPS standard. Moreover, it seems quite apparent that, with the CO<sub>2</sub> emissions already above the NSPS standard, the 30.8% number was chosen not for some technical reason, but as an easy way for the CECP to emit excessive CO<sub>2</sub> and not include any mitigation measures in the project.

The PSA repeatedly asserts that CECP will operate at lower rates, but it nevertheless notes that “real performance may be somewhat better *or worse* than this this depending on actual operating conditions.” (PSA Air Quality Appendix, p. 12) With the admitted possibility that performance, i.e. CO2 emissions, could be worse than projected, the CEC should see to it that this project includes measures that would reduce its CO2 output below federal CO2 standards (if not lower), regardless of that questionable 30.8% output rating. Considering that the CEC, the California Public Utilities Commission, the air districts, and the State of California are supposedly committed to reducing greenhouse gas emissions under the auspices of AB 32, and for the sake of the citizens of Carlsbad and California, reducing the CO2 emissions of the CECP should be a top priority. On principle alone, the CEC should require the CECP project to reduce its CO2 output below federal standards to ensure that this and other approved or future projects are not allowed to pollute California’s air by gaming the rules – the CECP should not be allowed to spew CO2 in violation of the federal rules simply because of a technicality.

### **Air Quality/Greenhouse Gases**

Mr. Simpson is concerned that even though the project may be operated continuously or intermittently on natural gas derived from imported liquefied natural gas (LNG), no air quality analysis based on the CECP utilizing imported LNG has been provided. Mr. Simpson requests that such an analysis be provided for study before approval of the CECP.

Mr. Simpson is concerned that the PSA only addressed the impact of nitrogen deposition on local flora and fauna (PSA, p. 4.3-20), but failed to discuss how any other air quality impacts from the CECP would affect flora and fauna. Mr. Simpson requests that such impacts be analyzed and provided for study before approval of the CECP.

In Mr. Simpson’s data request submitted on October 29, 2014, request No. 29 asked the applicant and the Commission to examine CECP’s potential air quality impacts while taking into account the enhancement of local air pollution by urban CO2 domes as discussed in two studies conducted by Mark Z. Jacobson. The CEC Staff stated it would “consider this comment in its analysis in the PSA,” however no such analysis was made. Mr. Simpson renews his request that urban CO2 domes be considered in any air quality impact analysis.

Mr. Simpson is concerned that the pollution and potential pollutant accumulation from air quality impacts in the lagoon have not been studied. The health of the lagoon is critical and these impacts should be examined and provided for study before approval of the CECP.

Respectfully Submitted,

/s/ Robert Simpson

February 2, 2015