

DOCKETED

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Filer:	Robert Simpson
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Rob Simpson comments on PDOC and PSA for the Carlsbad Energy Center.

Please consider all of these comments to the California Energy Commission and San Diego Air Pollution Control District.

- 1) Please provide a copy of the PSD permit determination submitted to Region 9 for approval of the PSD permit.
- 2) If a request for a PSD applicability determination has not been submitted to the EPA please indicate why it has not and when the applicant intends to submit one.
- 3) Please provide the project owner's schedule for acquisition of the PSD applicability determination.
- 4) Please provide all past and future copies of correspondence between the EPA CEC or air district related to this particular PSD permit.
- 5) Please provide electronic copies or transcripts of any written or oral correspondence with the CEC staff, CEC Commissioners or air district related to the PSD permit.

Background: The applicant's agreement with the City of Carlsbad provides for a monetary payment if the existing Encina Project is required to operate at the same time the amended Carlsbad Peaker project is operating.¹

- 6) Please provide an air quality modeling analysis showing the impact of the 965 MW Encina Power Station operating at the same time as the amended 632 MW Carlsbad project.
- 7) Please provide a health risk assessment assuming that both the Encina Project and the 632 MW Amended Carlsbad project are operating simultaneously.
- 8) Please provide a nitrogen deposition analysis assuming both projects continue to operate.

Background: It is likely that the project may be operated continuously or intermittently on natural gas derived from imported liquefied natural gas ("LNG").

- 9) Please provide an air quality analysis based on the project utilizing imported LNG.

Background: SDG&E recently sold a forty-eight acre parcel at the Encina Parcel Site to Caruso Holdings. Caruso plans to erect an upscale mall at the site.

- 10) Please identify all projects that will be under construction at the same time as the amended CECP.
- 11) Please provide a construction air quality impact analysis of all projects that will be under construction during the construction and demolition of the amended CECP. Please include the Carlsbad desalination plant and any other reasonably foreseeable projects.
- 12) The amendment application states "Upon completion of demolition of EPS, portions of the western areas of the Cabrillo Parcel will be removed from CEC jurisdiction and made available for redevelopment." Please describe the impacts from reasonably foreseeable additional development in the analysis of this project.

Background: The petition to amend states that the amended CECP will be constructed in the footprint of several existing fuel oil tanks. Given the known existing contamination near the fuel oil tanks, please provide a schedule for:

- 13) Demolition of the fuel oil tanks.
- 14) Environmental investigation after removal of the tanks.
- 15) Remediation of contaminated soil found near the tanks to a level of insignificance.

¹ See Article 8.4 of the agreement: "(a) Liquidated damages provides that: in the event that CECP becomes commercially operable and the Encina Power Station continues to operate, NRG has agreed to make the liquidated damage payment as provided by section 3.1(A)(VI)."

Background: The CECP must comply with local, state, and federal laws.

- 16) Please explain how “public convenience and necessity” (as discussed in California Public Resources Code § 25525) requires the capacity and energy represented by the CECP and that there are not more prudent and feasible means of providing this perceived energy need.
- 17) Please explain how the CECP facility will comply with Carlsbad Local Ordinance CS-158, Ordinance CS-159, Ordinance CS-160, and Resolution 2011-230.
- 18) Please identify the project’s “extraordinary public purpose” as defined in Carlsbad Municipal Code 21.36.020.
- 19) Please describe how the project is coastal dependent as established by the California Coastal Act (Pub. Res. Code § 30101) or affirm that the project is not coastal dependent.
- 20) Please explain whether the project meets the requirement for a thirty-five foot height limitation (Agua Hedionda Land Use Plan Page p. 17, § 1.9; Exhibit 412).
- 21) Please explain whether the waters of Agua Hedionda are waters of the United States as defined in the Coastal Zone Management Act.
- 22) Please identify exactly what permits and government approvals – coastal development, air pollution permit, PSD permit, endangered species act take permit, Army Corps of Engineers, California Fish and Game, USFWS, NPDES, etc. – the CEC license would represent. Identify the public participation opportunities, including public notice requirements, for the subsumed approvals, and compare them to the public participation opportunities before the Commission.
- 23) Please identify all other government approvals not subsumed by the CEC license that would be required for the project to be developed and operated. Please include application status and expected dates of approval.
- 24) What state and federal regulations govern the project’s impacts on these waters?
- 25) Please identify potential air quality impacts on adjacent endangered species, flora, and sensitive habitats.
- 26) Please discuss whether a No Project Alternative, which is “a factually based forecast of the environmental impacts of preserving the status quo” has been examined (84 Cal.App.4th 315A, *Planning & Conservation League v. Dept. of Water Resources* (2000) at p. 917).

Background: The Applicant should explain the environmental impacts of the CECP.

- 27) Please provide the most recent two years of on-site air quality monitoring.
- 28) Please provide the most recent two years of on-site meteorological data.
- 29) Based on the information in the two studies conducted by Mark Z. Jacobson, please identify CECP’s potential air quality impacts have taken into account the enhancement of local air pollution by urban CO₂ domes.²
- 30) Regarding the approved combined-cycle project compared to the proposed single-cycle project, please prepare a side by side comparison of air pollution and greenhouse gas emissions at varying operating loads and electrical outputs.

² Environmental Science and Technology 2010, 44, 2497-2502, *Enhancement of Local Pollution by Urban CO₂ Domes* by Mark Z. Jacobson (March 2010), and Geophysical Research Letters, Volume 35, L03809, *On the Causal Link Between Carbon Dioxide and Air Pollution Mortality* by Mark Z. Jacobson (February 12, 2008); available at Study the 2 reports by Mark Z. Jacobson, *Enhancement of Local Air Pollution by Urban CO₂ Domes and On the causal link between carbon dioxide and air pollution mortality. Model the localized impacts consistent with the reports methodology. The reports are available at; http://www.energy.ca.gov/sitingcases/piopico/documents/others/2012-09-11_Simpson_Supplemental_Comments_3_TN-67083.pdf.*

- 31) Consider underground carbon sequestration, including the value it might provide in offsetting the cost of participating in the state CO2 cap and trade scheme as well as the value of increased electricity sales from preferred position in queue.
- 32) Survey nearby farm owners and management to determine if they would accept heat or carbon dioxide for intensified farming methods? Survey nearby farm owners and management to determine under what terms they would participate in algae farming for bio-sequestration of greater amounts of, what would otherwise be, air pollutants.
- 33) Survey heat and cooling users within one mile of the project to determine who would accept hot water from the project? Provide a cost benefit analysis that considers increased electrical sales derived from a preferred position in the loading order because of the increased efficiency and environmental benefits?
- 34) Please describe how much on site solar could be developed in conjunction with the facility if all practicable surface area on buildings, in the parking areas, and elsewhere on-site are covered by solar panels. How would this lower emissions and effective heat rates?

Consider the effectiveness of varying amounts and types of energy storage- batteries compressed air etc. that can be used to reduce environmental impacts and improve grid stability through smoothing or other advantages in both the proposed configuration and the so called approved configuration. More specifically disclose what effect adding 92 MW of battery storage would achieve if added to the “approved” configuration. How would it affect emissions and the projects ability to serve the grid and reduce emissions. Also conduct the same analysis for adding batteries to the proposed configuration, with or without eliminating at least one of the turbines

[Eos Energy Storage](#) will be making its megawatt-scale Aurora system commercially available starting in 2016 at a price of \$160/kWh, according to a recent press release.

- 1) <http://reneweconomy.com.au/2015/eos-energy-to-offer-mw-scale-battery-storage-system-at-160kwh-2016>
- 2) Please identify the height that the temperature or pollutant emissions from the stacks would result in bird mortality in a collision with the plume. Identify the height at which emissions from the facility would merely disrupt avian flight.
- 3) Please explain whether the rapid start turbines have the potential to startle local birds into flight into the intermittent inferno plumes?
- 4) Please identify the distance between proposed electrical wires, identify the wingspan of a typical adult brown pelican, and demonstrate how the distance between the wires prevents avian electrocution and the associated threat to public health.
- 5) Disclose deposition pollution and potential pollutant accumulation in the lagoon
- 6) Please identify the potential impacts to species and habitats including aquatic species by elevated noise and light levels including construction noise, pile driving, and vibrations and what evidence that wildlife has become accustomed to such impacts.
- 7) Model greenhouse gas emissions from construction.
- 8) Study the deposition impacts of criteria and toxic emissions on nearby critical habitats and species including the vernal pools.
- 9) Disclose the impacts of ammonia emissions and the millions of gallons of vaporized water per day on biological resources.
- 10) It appears that the CEC biologist has never even visited the site. Conduct a biological assessment which includes examining the biology present at and around the site.
- 11) Describe the effects of potential raptor perches in the planned tree canopy.

Background: The Applicant should explain the public health impacts of the CECP.

- 12) Study the cancer cluster disclosed during public comments in the initial proceeding adjacent leukemia/cancer cases and deaths potentially linked to the facility.
- 13) Study (pig) the gas pipeline intended to serve CECP in order to help ensure pipeline safety and help prevent another catastrophe like the one in San Bruno.

Background: data requests concerning the operation of the CECP.

- 14) Please compare the original approved combined-cycle facility with the amended proposal and disclose any requirements from SDG&E that that the original facility could not satisfy.
- 15) If the operating parameters of the approved facility do not satisfy SDG&E requirements, please identify energy storage or other options that would cause the original plan to satisfy SDG&E requirements. Quantify the cost effectiveness and benefits to the developer of the improved position in the loading order.
- 16) Please describe how much renewable capacity the plant would support compared to the current system capacity. Include presently dispatched renewable resources, other proposed gas plants that propose to support renewables, and compare to the original plant's ability to support renewable energy. Explain whether the project is in the best the location to support renewable energy.
- 17) If the amendment is denied, does the Applicant have full authority to develop the previously approved project? If not, identify any other approvals or permits required to allow that project to proceed and the status of applications.
- 18) If the amendment is denied, would the Applicant develop the approved project?
- 19) Please disclose all ongoing communication with regulators/government agencies regarding the approval of the amended project.
- 20) Is the project considered a Public Utility?
- 21) Please describe whether this project will displace less efficient gas plants or renewable energy.
- 22) If grid stability requires the facility to operate more than the permitted amount, what will happen? Explicitly identify what constitutes an emergency under which the plant could operate outside of the permitted range
- 23) Please explain whether the project requires an override of LORs.
- 24) Is the Administrative record from the original proceeding subsumed into this proceeding?
- 25) The Amendment application states "Construction activities for the Amended CECP will involve similar activities as those described for the Licensed CECP in the Final Decision." Please describe the impacts associated with the amended CECP noise, light, runoff, and air emissions.

The PSA states; Like the licensed CECP, the amended CECP would be constructed within the recessed, 25-foot below-grade location where the EPS east tank farm currently resides.

Model the air quality impacts of emissions from this recessed position. Demonstrate on a map the maximum deposition points from each pollutant and their potential impacts on wildlife and the public.

The PSA states; The 632-MW amended CECP would be located at the same, slightly larger northeastern parcel of the 95-acre EPS power plant complex.

Provide a parcel map and disclose if the project is on the same parcel as the prior project.

The PSA states; However, because this is an amendment to an existing Energy Commission license, staff's analysis focuses on the modifications proposed by the amended CECP.

At what point would the project qualify as a new project as it would appear to do at any other agency. Would it be a distance from the original plan, time period, different configuration or can any project be

modified without restriction? Disclose the effect of the project being called a modification instead of a new project. Include a discussion of how the new project hiding in a location identified as compliance on the commission website creates a chilling effect on public participation. It appearing as if it is a forgone conclusion that this is an approved project.

The PSA states; In this amendment proceeding, the purpose of the proposed amended CECP changes are to ensure regional electrical reliability and provide for fast-response peaking generation that best responds to the unanticipated retirement of the San Onofre Nuclear Generating Station (SONGS) in June of 2013.

Are the changes actually because the original project was deemed illegal by federal authorities and could not obtain a PSD permit? What would the effect on air quality and the grid be if the original project was developed with an additional 92 MW of battery storage?

The PSA states; The purpose of this PSA is to provide clarification of the modifications to the licensed CECP, and analyze whether these proposed changes would result in any new impacts or any increase in the severity of impacts addressed in the licensed CECP proceeding, and that the amended CECP would continue to conform to local, state, and federal LORS.

Is it true that the existing project does not conform to Federal PSD law?

The PSA states; Development of a new 44,180 sq. ft. floral trade distribution center and marketplace, 9,900 sq. ft. micro-brewery and winery building, 1984 sq. ft. culinary center, and 896 sq. ft. farm shed with the remaining land dedicated to farm plots, orchard, hops farm, vineyard and parking on 17.22 acres of land within a 45.60 acre site.

Disclose which of these projects would accept heat or CO2 from the project.

The PSA states; The removal of the EPS units would create environmental benefits, including the elimination of 857-million gallons per day of seawater OTC permitted for the existing EPS units. This would enable compliance with the state water board's existing December 31, 2017 deadline for cessation of seawater OTC by the EPS, and result in the decrease in impingement and entrainment of marine organisms per EPA 316 (B) Clean Water Act regulations.

Will this happen even if the project is not approved?

The PSA states; The SCR process would use 19 percent aqueous ammonia. Ammonia slip, or the concentration of un-reacted ammonia in the stack exhaust, would be limited to 5.0 ppmvd, corrected to 15 percent O2.

The project should use urea for safety

The PSA states; Where possible, staff prefers that the recommended background concentrations come from nearby monitoring stations with similar characteristics. For this project, the Camp Pendleton monitoring station (ozone and NO2) is located reasonably close to the project site, in the Camp Pendleton Marine Base approximately 6.3 miles north northwest of the project site. The Escondido (CO, PM10, and PM2.5) and San Diego (SO2) monitoring stations are located further from the site, but considering the inland valley location of Escondido and the more industrialized area of San Diego, these two locations should provide conservatively high background concentrations for Carlsbad.

Provide data for all pollutants from each station to demonstrate that the background was not cherry picked and provide one year of onsite monitoring.

The PSA states; The pollutant modelling analysis was limited to the pollutants listed above in **Air Quality Table 10**; therefore, recommended background concentrations were not determined for the other criteria pollutants (ozone, lead, visibility, etc.).

Determine the background concentrations for the other criteria pollutants

The PSA states; The maximum normal pollutant emission rates are higher for the amended CECP than the licensed CECP for all pollutants.

Disclose on a MW basis a comparison of the emissions from both projects

The PSA states; a The project owner has taken a reduced facility-wide NO_x emission limit, a very small reduction of less than 0.3 tons/year, to ensure that emissions were limited below PSD permitting thresholds. b This represents normal operating years. For the initial commissioning year the annual CO emissions would be permitted to 102.1 tons, which for that one year of initial commissioning would result in an emission decrease of 20.0 tons.

This would appear to fit the definition of a sham permit as defined by the EPA. The project requires a PSD applicability determination from the EPA

The PSA states; This baseline represents the average annual values determined by SDAPCD using their approved 2012 and 2013 annual emissions estimates for the EPS. This does not represent the maximum sequential two-year average from 2009 to 2013, which would be the average of the 2011 and 2012 EPS emissions.

Present the information using the maximum baseline.

The PSA states; This is based on the EPS emissions baseline in effect at the time of the licensed CECP approval. Except for CO,

This baseline was deemed illegal by the EPA and should not be relied upon

The PSA states; The District's modeling results indicate that the project's maximum startup/shutdown emission impacts would not cause any new significant ambient impacts associated with maximum short-term NO_x and CO concentrations that could occur near the project site.

The CEC should conduct its own modeling

The PSA states; Maximum inversion breakup fumigation impacts for the turbines are lower than normal operating impacts predicted by AERMOD. The impacts under shoreline inversion fumigation conditions were found to be above the maximum concentrations calculated under normal gas turbine operations (see **Air Quality Table 23**). All fumigation impact concentration levels were found to be below the CAAQS and NAAQS

Determine the fumigation impacts on endangered species and their habitats

The PSA states;

The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of greenhouse gas emissions. Such requirements must be adopted by the relevant public agency through a public review process and must reduce or mitigate the project's incremental contribution of greenhouse gas emissions. If there is substantial evidence that the possible effects of a particular project are still cumulatively considerable notwithstanding compliance with the adopted regulations or requirements, an EIR must be prepared for the project. (emphasis added)

Explain how relying on the Avenal precedent comports with this LOR. Also disclose the CEC authority to rely on the precedent.

The PSA states; Energy Commission certification of fossil generation without a long-term PPA does not result in the development of more fossil generation than that needed to reliably operate the system. It is not expected that developers of new capacity, such as the developer of the amended CECP facility, would bring a project to completion without a long-term PPA with a utility that would guarantee recovery of the investment of several hundred million dollars. Only one so-called “merchant plant” has been developed since the energy crisis (2000 – 2001) without a PPA

The statement first indicates that certification does not result in development without a PPA then gives an example that it does. Which one is it? What percentage of developed projects does that one plant represent? Has the CECP developer indicated that they would not develop the project without a PPA

The PSA states; The unwillingness of developers (and lenders) to commit capital to new facilities without a long-term contract follows from the size of the necessary investment and risk that it will prove uneconomic. While some plants built ten plus years ago that no longer have contracts are generating adequate revenue, others are not.

Disclose exactly which plants are generating adequate revenue and which are not. Is there excess capacity already developed?

The PSA states; If a plant’s variable O&M costs are so low as to offset the costs associated with its greater fuel combustion, a less efficient (higher GHG emission) plant may be dispatched first. There is no indication that the amended CECP’s’ variable O&M costs are unusually low and that they would be dispatched before a more efficient facility. If a natural gas-fired plant’s per-mmBtu fuel costs are very low, it may be less efficient (higher GHG emitting) but still be dispatched first. Natural gas costs in California, however, are higher than elsewhere in the WECC and thus this scenario is unlikely to occur.

Does this undermine the Avenal precedent? Is there an indication that the proposed plants O&M costs are high ? How much are they compared to other facilities?

The PSA states; The large “belly” (Number 2 in the figure) represents solar generation on a typical nonsummer day; this gets larger over time as more solar is added to the system. The gray area represents necessary thermal generation, which is increasingly natural gas over time as California portfolios are divested of coal pursuant to the state’s Emission Performance Standard...(b) a large amount of gas-fired generation will be needed four to eight hours later when solar energy is unavailable, and thus must be on line and generating at minimum output at mid-day.

How would battery or flywheel storage smooth capacity issues?

The PSA states; The long-term solution for overgeneration is expected to be the development of cost effective, multi-hour storage, allowing the surplus to be stored until it can be used in evening hours. In the interim, however, overgeneration can only be dealt with by curtailing renewable generation or reducing the amount of gas-fired generation that is needed during midday and early afternoon hours. The latter is facilitated by developing gas-fired resources such as LMS100s that can cycle on and off at least twice a day.

Would the project better serve future needs and preserve the environment by incorporating storage?

The PSA states; The proposed Pio Pico Power Plant, which also proposes the use of newer model LMS100 gas turbines, would have a nearly identical expected heat rate as the amended CECP.

Will the development of Pio Pico reduce the “need” for this project?

The PSA states; The Energy Commission in the recent Final Decision for the Huntington Beach Energy Project³⁰ noted that the Avenal decision has been augmented by two recent developments. The first is the adoption of CEQA guidelines for the analysis of GHG emissions impacts (CEQA Guidelines, tit. 14, §15064.4). The second development is the enactment of the AB 32 Cap-and-Trade system that implements the state's approach to reducing GHG emissions from the electricity sector. Staff is continuing to analyze this project against that precedent, while also taking into consideration the CEQA guidelines.

When will staff complete their analysis of these developments that appear to undermine the lack of rational in the Avenal Decision? Is this a separate proceeding or will it be determined in this proceeding?

The PSA states; However, as California moves to a high renewable/low-GHG system, efficient resources like the amended CECP may operate more than a traditional, less flexible peaker unit. As noted above, the addition of the amended CECP would not interfere with generation from existing renewable facilities or with the integration of new renewable generation. The flexible nature of the amended CECP would in fact serve to facilitate the integration of additional variable renewable resources.

The statement that this project will not interfere with.. integration of new renewable generation.. does not make it true. This type of project could certainly interfere with the development of battery storage and other preferred generation.

The PSA states; The EPS is characterized as having existing expansion opportunities for various plant sizes and fuel types. "Available land and endangered animal habitat impacts are all severe, but not prohibitive, constraints." *And* "Available land constraints limit lateral expansion opportunities. Expansion opportunities exist on agricultural land owned by SDG&E inland of I-5.

The CEC seems to have failed to examine the severe impacts to endangered animal habitats. This project requires a biological opinion from the USFWS and take permit.

The PSA states; If the amended CECP is not approved and built, the region would not benefit from the relatively efficient source of 92 MW of new generation that the amended CECP (632-MW) would provide over the licensed CECP (540-MW)

Would batteries added to the licensed project be an environmentally superior method of achieving these extra MW? Is there a demonstrated need for the extra MW?

The PSA states; The Energy Commission found that if the CECP was not constructed, the CAISO indicated that EPS Units 4 and 5 would be required to stay on line indefinitely, thereby delaying compliance with the state's OTC policy directed at reducing impacts to the marine environment (CEC 2012a, pg. 3-22).

The units will be retired regardless of this project. NRG informed the State Water Board that it still plans to replace Units 1-3 with the Carlsbad Energy Center but it no longer intends to pursue Track 2 compliance options and will retire Units 4 and 5 no later than the final compliance date for Encina of December 31, 2017.

http://www.swrcb.ca.gov/water_issues/programs/ocean/cwa316/saccwis/docs/saccwis_report_2014_approved.pdf

The PSA states; Staff notes that the **TRAFFIC & TRANSPORTATION** section identified greater potential thermal plume impacts from the simple-cycle turbine exhaust stacks (due to increased plume velocities and heat), but the impacts remain less than significant with the implementation of the applicable existing conditions of certification from the licensed CECP.

What will be the impact on birds?

The PSA states; The Energy Commission also found that even if the licensed CECP was constructed,

the CAISO could mandate the continued operation of EPS Units 4 and 5 for electric reliability purposes until further generation or transmission upgrades allowed for their decommissioning. If the amended CECP is not approved and built, the region would not benefit from the relatively efficient source of 92 MW of new generation that the amended CECP (632-MW) would provide over the licensed CECP (540-MW) alternative. Moreover, the amended CECP generation would increase the supply of faststart, rapid-response energy, better serve load demands in the San Diego Region, and better respond to the retirement of the San Onofre Nuclear Generating Station.

Is there any present contention from CAISO that it would mandate the continuing operation of the other units? Does CAISO have the authority to override the mandate to discontinue use of ocean waters and the project owners determination to shut the aging facility?

;

The PSA states; Although collision may occur, it is not likely that bird mortality due to collision with CECP transmission lines and facilities would significantly reduce the population numbers of any bird species or that the reduction in numbers within any population would impair its function within the local ecosystem. Because the amended CECP exhaust stacks are significantly shorter than 350 feet (the height above which is considered dangerous to migrating birds), and shorter than the existing built environment (e.g., EPS exhaust stack), and with implementation of Condition of Certification **VIS-4**, impacts resulting from bird collisions with CECP structures would be less than significant.

The above statement appears without basis in the present plan. It fails to consider the removal of the EPS exhaust stack and the ½ mile high intermittent invisible inferno which will surely kill birds.

The PSA states; The project owner would construct the proposed transmission lines according to APLIC's "raptor-friendly" guidelines. Specifically, the transmission lines would have a minimum of 5.5 feet between conductor wires (CECP 2007a, p. 5.2-16).

This is inadequate spacing to protect the Federally protected brown pelicans.

The PSA states; The total nitrogen emission levels (based on NO_x and NH₃ emissions) for the amended CECP would be reduced by the shutdown of EPS Units 1–5 and the peaker gas turbine. The PTA (Table 5.1-41) demonstrates that there is a significant net reduction in nitrogen emissions when comparing the amended CECP to the licensed CECP. Therefore, staff concludes that there would be no significant impacts on the sensitive biological resources from the nitrogen deposition of the amended CECP.

Modeling is still required to determine deposition patterns which must be different that the old plant.

The PSA states; Further, in its 2012 Decision the Commission found that Section 30260 of the Coastal Act, which encourages coastal-dependent industrial facilities to locate or expand within existing sites, does not prohibit non-coastal dependent facilities from locating within the coastal zone.

I recall no such finding please be more specific and cite the finding. Is this admitting that the project is not coastal dependent? The project appears to require a permit from the Coastal Commission,

The PSA states; However, staff supplies these calculations for informational purposes only and is relying upon the August 2012 approved method to calculate the risk for regulatory and CEQA purposes. However, staff wishes to reiterate that for the amended CECP, all risks to all receptors calculated using all methodologies are less than the level of significance (10 in one million).

Please calculate the risk using present protocols and as a new project.

The PSA states; As explained in the **Traffic & Transportation** section, a vertical velocity of 4.3 m/s (plume average velocity) has been determined as the critical velocity of concern to light aircraft. For the amended gas turbines the worst-case height at which the plume average velocity drops below 4.3 m/s is calculated to be 2,200 feet, which is much higher than the 1,070 feet calculated for the approved gas

turbine/HRSG design. At this 2,200 foot height the plume diameter for the amended gas turbines is calculated to be 673 feet which is much greater than the 299 foot diameter of the plume for the approved gas turbines/HRSG at 1,070 feet. Therefore, the amended gas turbine design would increase the potential risk to light aircraft from plume turbulence.

How much worse for wildlife is this than the approved project?

The PDOC states; For netting purposes under District NSR rules, calculations are based on the average emissions during the most representative consecutive 2-year period in the previous five years unless such a period cannot be determined. Table 2 below shows averages for each 2-year period for the existing equipment.

The PDOC states; Based on review of emissions data, the District preliminarily determined that the average annual emissions during the most recent two calendar years (2012-2013) in the past five years (see Table 2) are the most representative for calculating the net emission increase (or decrease) because they reflect operation after the San Onofre Nuclear Generation Station ceased producing power.

What are the emissions for 2014? Choice of using 2012-2013 appear to serve only evading PSD thresholds. The closure of SONGS was certainly not typical and the proponent should not gain advantage over regulatory compliance through this well above average event. The District should reevaluate this determination and recirculate the PDOC

The PDOC states; The emissions were calculated on an annual basis for the same criteria pollutants (NO_x, CO, VOC, SO_x, PM₁₀ and PM_{2.5}) for each of the years 2009-2013 based on the operating history of the equipment.

The PDOC states; Based on this calculation the project will result in an emission decrease for CO, VOC and PM₁₀. It will result in an increase of NO_x, SO₂ and NH₃. This calculation includes an additional annual limit for NO_x for the new equipment as a whole and the existing boilers and peaking turbine accepted by the Applicant to ensure the emission increase stays below 25 tons/yr.

Even using the wrong baseline the proposed emissions surely do not ensure that the emissions will stay below 35 tons. The District should consider the project to pollute over 25 tons.

The PDOC states; After completion of the project including reaching full commercial operation of all the proposed new combustion turbines, the electrical generating capacity intended to be replaced that was previously supplied by the existing EPS units will have been replaced by the generating capacity of the new units.

Can both projects operate simultaneously?

The PDOC states; A major modification is defined in District Rule 20.1 as a physical or operational change which results or may result in a contemporaneous emission increase at an existing major source in excess of the following limits for each of the corresponding pollutants: PM₁₀ – 15 tons per year; NO_x – 25 tons per year; VOC – 25 tons per year; SO_x – 40 tons per year; CO – 100 tons per year; Lead – 0.6 tons per year. Proposed permit conditions contain an annual emission limits covering the ACECP and the existing boilers and peaking turbine that limits total NO_x emissions from this equipment to 84.8 tons of NO_x per year, which ensures that the contemporaneous emission increase of NO_x does not exceed 25 tons per year, and that limit the potential increase for other pollutants so that emissions of these pollutants do not exceed any of the applicable NSR or PSD modification thresholds (see PSD below). Therefore, the project is not a major modification for any pollutant.

As stated above it should be considered a major modification.

The PDOC states; It should be noted that, although the District fully expects the boilers and peaking turbine of the EPS to be shut down and demolished, the proposed permit conditions do not require this; however, they do require that emissions from the existing units reach zero tons of NOx per year once the shakedown period for all six proposed new turbines has ended.

If both projects are required to operate for grid stability does the air district have authority to stop them or does CAISO or the CEC or others have the authority to override the district? What if they do not shut down?

The PDOC states; The District did adopt Rule 20.3.1 on April 4, 2012, which would incorporate the federal PSD program as it existed on the date of adoption into District rules. But, due to recent court decisions that vacated portions of the PSD program as it existed in 2012, the fate of Rule 20.3.1 is uncertain. The EPA has not approved the rule, which is a required step before it becomes effective, so the rule is not currently in effect and would not be in effect absent EPA approval.

Please cite the case

Recent permitting decisions by the District and other agencies were reviewed to confirm this as the BACT emission level. Recent permits issued by the District for simple-cycle units include a 48.5 MW combustion turbine (Escondido Energy Center), a 49.95 MW combustion turbine (El Cajon Energy), and two 49.8 MW combustion turbines (Orange Grove Energy), all of which were permitted at 2.5 ppmvd @ 15% O₂ averaged over one-hour. The District has also issued an FDOC for the Pio Pico Energy center which would include 3 GE LMS 100 PA turbines similar to those proposed for this project that was permitted with a limit of 2.5 ppmvd NO_x at 15% O₂ averaged over one hour. The District has also permitted two combined-cycle plants (Otay Mesa Energy Center and Palomar Energy Center) that are limited to 2.0 ppmvd NO_x at 15% O₂ averaged over one hour. Additionally, both the Walnut Creek Energy Park licensed by CEC and operational as of 5/1/2013 and the Panoche Energy Center licensed by the CEC and operational as of 7/1/2009 include similar LMS100 turbines permitted with limits of 2.5 ppmvd NO_x at 15% O₂ averaged over one hour.

The Applicant initially proposed a limit of 3.5 lb PM₁₀ per hour. However based on the District's review of previous source test results conducted during review of the Pio Pico Energy Center, a 3.5 lb/hr limit may not be achievable continuously for every hour.

The PDOC states; The analysis eliminates combined-cycle turbines primarily because the turbines may need to undergo multiple startups per day which would decrease the lifespan of the turbines and, therefore, combined-cycle plants would not meet the requirements.

The analysis should include consideration of battery storage as described above

The PDOC states; However it is unclear whether technology used by the independent system operator and utilities to predict required operating loads and respond to load swings will advance before construction of the plant as these entities gain experience integrating renewables into the grid, such that the worst-case design scenarios for necessary ramp rates and startup and shutdowns will not occur. If fewer startups and shutdowns are necessary and the utilities are able to reasonably predict how much power will be needed with sufficient lead time to bring a combined-cycle unit to the necessary load, then there is a point where the maintenance issues with frequent startups and shutdowns would be eliminated, and operation of a combined-cycle unit would have lower emissions on a lb/MW-hr basis than a comparable simple-cycle unit.

Battery technology is what will solve this problem but it will not occur until regulators begin considering them in permitting matters. The district should show leadership and address the issue in this proceeding.

The PDOC states; The previous sections of this BACT analysis have established that the proposed simple-cycle turbines meet BACT requirements for simple-cycle turbines, and based on the alternative technologies

analysis provided by the Applicant, The District preliminarily agrees that simple-cycle turbines are a reasonable choice to meet all of the stated project objectives and that the alternatives discussed are not technologically feasible.

A reasonable choice is not necessarily BACT. Today's energy and environmental constraints require consideration of nuances. Not just all solar or all gas fired. Storage is needed to improve emission profiles, reduce starts and stops and smooth the grid with less combustion. This is the time to consider adding some storage to the project, adding some storage and incrementally improving the way we generate electricity.

The PDOC states; While emission reductions from the existing EPS units would mitigate the emission impacts to some extent, the Applicant prepared an AQIA assessing the impacts for emissions of PM10, PM2.5, NO2, SO2 and CO that did not include the associated reductions from shutdown of the EPS units. Pursuant 20.3 (d)(2)(iv) no AQIA is required for NOx or VOC impacts on ozone.

Please provide modelling on an isopleth map considering the bowl shaped site, varying topography and fumigation impacts on protected habitats and species. Also include Nitrogen deposition, NOx, ammonia, and ozone.

Rule 20.3(d)(3) and (4): PSD

As previously discussed, this site is an existing PSD source, but the project does not result in a contemporaneous emission increase in excess of the PSD modification thresholds for any pollutant, so no further PSD requirements apply. This is ensured by proposed conditions limiting the actual emissions from the existing EPS units in sufficient amounts such that at no time will the contemporaneous emission increase exceed the PSD modification thresholds.

The EPA should be making the PSD decision.

Rule 20.3(d)(5)-(8): Emission Offsets

Emission offsets are required for any project that results in a major modification at an existing major source or results in a new major stationary source by itself for federal nonattainment air pollutants or their precursors. The District is currently only in nonattainment of the federal 8-hour ozone standard. As ozone precursors, NOx and VOCs are the only nonattainment pollutants in the District. The EPS is currently an existing major source. The proposed permit conditions contain annual emission limits for NOx and VOC emissions to ensure that the contemporaneous increase for NOx or VOC emissions is less than 24.9 ton/yr, which is below the major modification threshold of 25 ton/yr.

24.9 tons does not ensure compliance. The project should be processed as over 25 tons.

Rule 51: Nuisance

The rule prohibits the discharge of air contaminants in such quantities which cause injury, detriment, nuisance or annoyance to a considerable number of persons or the public; which endanger the comfort, repose, health or safety of any such persons of the public; or which have a natural tendency to cause injury or damage to business or property. Proposed permit conditions specify this requirement and the use of natural gas as fuel is expected to ensure that no public nuisance results from this equipment.

The hundreds of members of the public who turned out in the original proceeding and spoke of cancer clusters near the plant certainly seemed to find the plant a nuisance at best. The District should respond to the parents that shared their concerns of their children dying from cancer. To date I am unaware of any response or investigation on the part of the air district or anyone else. The district should investigate and test the air.

Rob Simpson
27136 Grandview Avenue
Hayward CA 94542
Rob@redwoodrob.com