

## DOCKETED

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| <b>Project Title:</b>   | Carlsbad Energy Center - Compliance           |
| <b>TN #:</b>            | 205174  |
| <b>Document Title:</b>  | Preliminary Comments of Robert Sarvey on PMPD |
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**BEFORE THE ENERGY RESOURCES CONSERVATION AND DEVELOPMENT  
COMMISSION OF THE STATE OF CALIFORNIA**

Petition to Amend  
The Carlsbad Energy Center

Docket Number 07-AFC-06C  
Preliminary Comments of Robert  
Sarvey on the PMPD

The Reduced Capacity Alternative is the Preferred Alternative.

The evidence demonstrates that the amended CECP would create significant adverse impacts on energy resources if alternatives could reduce the project's use of fuel.<sup>1</sup> CEC staff did not conclude that there was a significant impact to energy resources in the FSA because the staff concluded that alternative resources were not available to meet the LCR needs in SDG&E's service territory.<sup>2</sup> It is clear that now that preferred resources and storage will make up a minimum of 300 MW of SDG&E's 800 MW procurement authority.<sup>3</sup> The PMPD fails to recognize the significant impact that will occur should Carlsbad Energy construct a 633 MW peaking facility when there are preferred resources that are not only available but required by CPUC proposed decisions. The PMPD needs to include this significant impact in the override section or declare that the reduced capacity alternative is the environmentally preferred alternative.

The evidence shows that the reduced capacity alternative would also, "*reduce the visual impact of the site.*"<sup>4</sup> As visual impacts are the subject of an override in the PMPD the Commission must adopt the alternative that reduces a significant impact from the project. The evidence also shows that utilization of preferred resources for a portion of the capacity of the amended CECP would lead to a reduction in GHG emissions and would also comply with the states loading order which is a project LORS not discussed in the PMPD.<sup>5</sup>

<sup>1</sup> Exhibit 2000 [CECP Amendment, Final Staff Assessment](#) Page 764 of 1111

<sup>2</sup> Exhibit 2000 [CECP Amendment, Final Staff Assessment](#) Page 765 of 1111

<sup>3</sup> Exhibit 6007, 6002 Page 2,3, Exhibit 4007 Page 36 of 38 Finding of Fact Number 7

<sup>4</sup> [Transcript of April 2, 2015 Evidentiary Hearing](#) Page 147 Of 283 Lines 9-16

<sup>5</sup> [Transcript of April 2, 2015 Evidentiary Hearing](#) Page 113 of 283 Lines 19-22 "So basically if this were a smaller project, say, this was 400 megawatts and then the other 200 was renewables, wouldn't that be less GHGs? MR. VIDAVER: Yes"

## Required Findings Specific to an Amendment

The PMPD lacks the evidentiary basis to make the required findings specific to certify the proposed amendment. The PMPD claims that the changes in project location outlined above help further the goal of the City of Carlsbad to free up portions of the EPS site west of the railroad for redevelopment to non-power plant uses. Demolition of the Encina Plant will occur under the licensed CECP or the amended CECP so the goal of redevelopment to the west of the railroad will be accomplished with either the CECP or the ACECP but the ACECP has a larger footprint. The ACECP footprint expands to the south, increasing the project site from 23 to 30 acres.<sup>6</sup> The ACECP will make less land available for redevelopment of non-power plant uses.

The PMPD claims that The ACECP also reduces the total amount of water used by the power plant, and specifically eliminates the use of ocean water. The CECP is required to use recycled water and no significant impacts from the use of recycled water were established in the 2012 decision. The Encina intake will continue to be used by the Carlsbad Desalinization plant so ocean water will be drawn whether the CECP uses ocean water or not.

The PMPD claims that it is a benefit that, *“The changes to the zoning and other land use regulations by the City of Carlsbad also eliminate almost all but one of the inconsistencies between the proposed amended project and those LORS. The remaining inconsistency is with the Agua Hedionda Land Use Plan’s 35-foot height limitation.”* The inconsistencies that the CECP had with the City of Carlsbad were created by the city on October 2011, when the City of Carlsbad amended its General Plan, the Agua Hedionda Land Use Plan applicable to the CECP site, and the zoning ordinance. Those enactments rendered the proposed CECP inconsistent with the City of Carlsbad’s land use LORS. Even with the legislative actions of the City of Carlsbad the ACECP is still not consistent with the City of Carlsbad LORS or Coastal Commission requirements.

The PMPD then states, *“The amended project would improve the overall thermal efficiency of the power plant due to the higher efficiency of the six new General Electric LMS100 gas turbines compared to the existing EPS boilers and gas turbine. This, along with an improved emission control system for the new gas turbines, leads to a reduction in emissions of most pollutants emitted per unit of electricity produced. The ACECP also features peaking*

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<sup>6</sup> PMPD Page 3-2

*capabilities that allow increased use of renewable resources.”* The PMPD attempts to manufacture a public benefit when none exists. The amendment application is not an application to amend the Encina Power Plant it is an application to amend the licensed CECP. The evidence in the record shows that the LMS-100 utilized by the ACECP from start up to 100 MW a period of ten minutes would have a heat rate of 20,598 Btu/kW-hr for an efficiency rating of around 17%.<sup>7</sup> During start up the licensed CECP is twice as efficient as the LMS-100. At minimum load of 25 MW the LMS-100 has a heat rate of 12,334 Btu/kW-hr for an efficiency rating of 27% which is higher than the average start up heat rate for the licensed CECP.<sup>8</sup> In any comparison of startup or low load operation the record demonstrates that the efficiency of the licensed CECP is decidedly superior by a large margin.

Not only is the licensed CECP more efficient in startup and low load operations it is expected to be significantly more efficient in its annual performance. The 2007 FSA states that the licensed, “CECP would have a net heat rate as low as 7,147 Btu/kWh and an estimated annual GHG performance factor of 0.405 MTCO<sub>2</sub>/MWh.<sup>9</sup> Staff’s FSA testimony for the amended CECP predicts that the net heat rate for the entire year for the amended CECP is expected to be 9,473 Btu/kWh with an annual GHG performance factor of .503 MTCO<sub>2</sub>/MWh.<sup>10</sup> Actual performance of near identical units now in service in Southern California confirm Staff’s performance expectations. NRG’s Walnut Creek Energy Center utilizes 5 LMS-100 turbines in simple cycle mode an almost identical plant to the amended CECP. For 2013 the average heat rate for the Walnut Creek Energy Center was 9.6735 MM/Btu approximately 36 percent efficiency.<sup>11</sup> NRG also owns and operates the new El Segundo Project which utilizes the R2C2 technology (Siemens Rapid Response Combined Cycle technology) proposed for the licensed CECP. The average heat rate for the El Segundo facility for 2013 was 8.2119 MM/Btu. The El Segundo Plant achieved an average heat rate approximately 17 % better than the Walnut Creek Energy Center in actual operation.<sup>12</sup>

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<sup>7</sup> Exhibit 1001 [PT 2 Petition to Amend Carlsbad Energy Center](#) Page 227 of 327

<sup>8</sup> Exhibit 1001 [PT 2 Petition to Amend Carlsbad Energy Center](#) Page 221 of 327

<sup>9</sup> Exhibit 200 [Licensed CECP Exhibit 200 -- Commission Staff Final Staff Assessment, docketed 11/12/09](#) Page 141 of 839

<sup>10</sup> Exhibit 2000 [CECP Amendment, Final Staff Assessment](#) Page 173 of 111

<sup>11</sup> Exhibit 6002 [Alternatives-Rebuttal Testimony of Robert Sarvey](#) Page 6  
[http://www.energyalmanac.ca.gov/electricity/web\\_qfer/Heat\\_Rates.php](http://www.energyalmanac.ca.gov/electricity/web_qfer/Heat_Rates.php) 2013 CEC QFER heat rates.

<sup>12</sup> Exhibit 6002 [Alternatives-Rebuttal Testimony of Robert Sarvey](#) Page 6  
[http://www.energyalmanac.ca.gov/electricity/web\\_qfer/Heat\\_Rates.php](http://www.energyalmanac.ca.gov/electricity/web_qfer/Heat_Rates.php)

The testimony from the licensed CECP also does not support any contentions that the LMS-100 turbines are as efficient as the R2C2 technology in any operating mode. In 2012 CEC Staff witness Walters testified that, *“The new plant (Licensed CECP) will be somewhere around 7200 BTUs for kilowatt hour in the hierarchy value basis. Also in comparing this plant the other types of plants that would need essentially the roles of this plant, which is peak or mid-merit plant, other designs could be LM6000 peaking turbines or the more efficient LM100 peaking turbines. And their efficiencies are 10,930 respectively, again quite a bit higher than 7200 BTU per kilowatt hour.”*<sup>13</sup> In the licensed CECP preceding the applicants witness Rubenstein testified that, *“Advanced simple-cycle gas turbines, such as the LM6000 and LMS100, again, turbines that this Commission is quite familiar with, are significantly less efficient than CECP.”*<sup>14</sup>

The PMPD’s contention that the ACECP would, *“lead to a reduction in emissions of most pollutants emitted per unit of electricity produced”* is another misleading statement that should be eliminated from the PMPD. While it may be true that the ACECP would emit less pollution than the Encina Plant it is not the Encina Plant that is the subject of the amendment. The CECP is the project that is being amended and its criteria pollutant emissions per MWh are substantially less. The ACECP will emit 34% more NOx emissions per MWh than the licensed CECP.<sup>15</sup> The ACECP also will emit 43% more VOC emissions per MWh than the licensed CECP.<sup>16</sup> In the 2007 proceeding CEC Staff witness Will Walters compared the emissions from the licensed CECP project to three proposed peaking projects with PPA’s. One of the peaking projects was the Pio Pico Project which utilized identical turbines to the amended Carlsbad proposal. Mr. Walters stated, *“Yes. I compared the emissions of the CECP project and the three PPA projects, both on a pound per megawatt-hour basis and a permitted basis and found that the PPA projects would admit more criteria pollutants per megawatt hour with the exception of carbon monoxide for all of the PPA projects, and that the permitted basis for the PPA projects had higher annual emissions than CECP. Also the greenhouse gas emissions for CECP are*

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<sup>13</sup> Exhibit 252 [Official Notice Document: 2010 CECP Evidentiary Hearing, Day 2](#) Page 93 of 409 Lines 23-25 and Page 94 of 409 Lines 1-10 Walters

<sup>14</sup> Exhibit 253 [Official Notice Document: 2010 CECP Evidentiary Hearing, Day 3](#) Page 120 of 502 Lines 18-21 Rubenstein

<sup>15</sup> Exhibit 2000 [CECP Amendment, Final Staff Assessment](#) Page 137 of 1111

lower, due to the fact that it's more efficient use of natural gas than the other three projects.<sup>17</sup> The evidence does not support the PMPD's assertions. Further the CECP will emit substantially less GHG emissions per MWh than the ACECP. The licensed CECP will emit substantially less GHG emissions per MWh than the amended CECP furthering the goals and policies of AB 32. The evidence in the proceeding shows that the amended CECP is estimated to emit .503 MTCO<sub>2</sub>/MWh.<sup>18</sup> The licensed CECP is estimated to emit .405 MTCO<sub>2</sub>/MWh which is 25% fewer GHG emission per MWh.<sup>19</sup> These are just estimates of what the projects will emit. There is information available on the actual average heat rates for similar units that are currently operating in Southern California. NRG's Walnut Creek Energy Center utilizes 5 LMS-100 turbines in simple cycle mode an identical plant to the ACECP. For 2013 the average heat rate for the Walnut Creek Energy Center was 9.6735 MM/Btu approximately 36 percent efficiency.<sup>20</sup> NRG also owns and operates the new El Segundo Project which utilizes the R2C2 technology (Siemens Rapid Response Combined Cycle technology) proposed for the licensed CECP. The average heat rate for the El Segundo facility for 2013 was 8.2119 MM/Btu. The El Segundo Plant achieved an average heat rate approximately 17 % better than the Walnut Creek Energy Center in actual operation.<sup>21</sup> The applicants witness in the licensed CECP proceeding agreed, *"In short, I believe that CECP's ground-breaking design provides significant greenhouse gas benefits furthering the goals and policies of AB 32 to reduce greenhouse gas emissions in California."*<sup>22</sup> CEC Staff witness Walters also testified that the licensed CECP would have lower GHG emissions than Pio Pico or Quail Brush, *"But as I noted before, this plant is going to be operated, not so far away from its high-end efficiency, it's going to be operated in a manner in which it's -- it's still reasonably efficient. But the difference in its efficiency versus those of the other projects, in all expectation it would have a lower GHG emission rate per megawatt hour of generation."*<sup>23</sup>

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<sup>17</sup> 07-AFC-06 RT 12-12-2011 Page 24 of 350 Lines 12-21

<sup>18</sup> Exhibit 2000 [CECP Amendment, Final Staff Assessment](#) Exhibit 2000 Page 173 of 1111

<sup>19</sup> 2012 Final Commission Decision Licensed CECP Page 140 of 582

<sup>20</sup> Exhibit 6002 Page 6 [http://www.energymalmanac.ca.gov/electricity/web\\_qfer/Heat\\_Rates.php](http://www.energymalmanac.ca.gov/electricity/web_qfer/Heat_Rates.php) 2013 CEC QFER heat rates.

<sup>21</sup> Exhibit 6002 Page 6 [http://www.energymalmanac.ca.gov/electricity/web\\_qfer/Heat\\_Rates.php](http://www.energymalmanac.ca.gov/electricity/web_qfer/Heat_Rates.php)

<sup>22</sup> Exhibit 253 [Official Notice Document: 2010 CECP Evidentiary Hearing, Day 3](#) Transcript February 3 Page 129 of 502 Lines 17-20 Rubenstein

<sup>23</sup> 07-AFC-06 Transcript of 12-12-2011 Evidentiary hearing Page 170 of 350 Lines 20-25 Page 171 lines 1,2 CEC Staff Witness Walters [www.energy.ca.gov/sitingcases/carlsbad/documents/2011-12-12\\_Transcript.pdf](http://www.energy.ca.gov/sitingcases/carlsbad/documents/2011-12-12_Transcript.pdf)

### Project Description Changed Circumstances

The PMPD goes on a fishing expedition to make a case that circumstances have changed that warrant an amendment to the licensed CECP. First the PMPD states without any corroborating evidence that, *“The purpose of the proposed changes in this PTA is to make the CECP conform to current electrical energy needs for fast-response peaking generation and to better respond to the unanticipated and unprecedented retirement of the San Onofre Nuclear Generating Station [SONGS].”* There is no evidence in the record of this proceeding that additional flexible capacity is needed in the CAISO service territory which warrants amendment of the fast starting CECP. As Staff testified, *“The need for flexible generation in the CA ISO balancing authority area was addressed in the CPUC’s 2012 LTPP proceeding. While the CPUC found that (1) there was no need to authorize new dispatchable, flexible capacity in the 2012 proceeding as a sufficient amount was available through 2020, it was agreed that (2) an assessment of the need for such capacity for 2021 – 2026 could be held over to the 2014 proceeding, when methodological issues related to the analysis could be discussed and resolved. The 2014 LTPP is ongoing.”*<sup>24</sup> It’s clear that the CPUC has found no flexible capacity need through 2020. The record shows that the PUC found in its current LTPP Proceeding that the largest flexible capacity need in the CAISO system was in December 2015, and that was 11,212 megawatts.<sup>25</sup> The record of the proceeding shows that the most recent CAISO study on flexible capacity determined that the system had 32,180 megawatts of flexible capacity at the current time, so they had three times as much flexible capacity now as they need.<sup>26</sup> Applicant witness Theaker has already testified that the licensed CECP could meet this flexible capacity need. Applicant witness Theaker stated that the licensed CECP could meet ISO’s projected substantial deficiency in flexible ramping capacity. He even testified that the slow ramping slow starting Sutter Energy Center could meet the flexibility needs.<sup>27</sup>

Next the PMPD manufactures more changed circumstances to merit approval of the ACECP. The PMPD states, *“something that could not be anticipated, changing circumstances created an opportunity for cooperation with the City of Carlsbad. The result of that cooperation*

<sup>24</sup> [CECP Amendment, Final Staff Assessment](#) FSA Page AQ1-32 (179 of 1111)

<sup>25</sup> [Transcript of April 2, 2015 Evidentiary Hearing](#) Page 187 of 283 Lines 19-25 and Page 188 Line 1

<sup>26</sup> [Transcript of April 2, 2015 Evidentiary Hearing](#) Page 188 of 283 Lines 3-6

<sup>27</sup> 07-AFC-06 Transcript of 12-12-2011 Evidentiary hearing Page 85 of 350 Lines 14-17 Witness Theaker [www.energy.ca.gov/sitingcases/carlsbad/documents/2011-12-12\\_Transcript.pdf](http://www.energy.ca.gov/sitingcases/carlsbad/documents/2011-12-12_Transcript.pdf)

*was an agreement between the City of Carlsbad and the Project Owner that allows for a much improved design that also includes full shut down of EPS Units 1 through 5.”* First the amended CECP is not an improved design. The ACECP is inferior in terms of GHG emissions, criteria pollutant emissions and cost per MWh compared to the licensed CECP. The full shutdown of the Encina Project is required by the States OTC policies and NRG has committed to the State Water Board that it intends to retire the Encina Plant on November 1, 2017 regardless of whether the ACECP is constructed.<sup>28</sup> Demolition of existing Encina Project was fully litigated in the previous proceeding resulting in a condition of certification that required NRG to develop a closure plan in the CECP decision.

The PMPD then makes a conclusion not supported by the record in this proceeding. The PMPD states that, *“In addition, changes in the electricity market favor simple-cycle, rather than combined-cycle generating units to further the integration of renewable energy sources into the system and support system reliability, especially in light of the unexpected retirement of SONGS.”* There is no evidence that the electricity market favors simple cycle generating units to further renewable integration of renewable energy sources as the record demonstrates no lack of flexible capacity. The record shows that SCE is electing to procure over 1,284 MW of combined cycle generation and only 98 MW of peaking power from their 2013 RFO.<sup>29</sup> This is yet another unsubstantiated conclusion in the PMPD.

Robert Sarvey’s topics for discussion at the PMPD Conference.

- 1) What evidence in the proceeding other than statements by the applicant’s attorney does the Committee have to believe that Carlsbad Energy will construct 6 turbines instead of the 5 turbines? Is there any testimony received under oath? Does the Committee believe that non-sworn statements by the applicant’s attorney are evidence?
  
- 2) What will the penalty be for the applicant for making a material false statement to the Commission when Carlsbad Energy only constructs five of the six turbines? Will the Commission amend or revoke the certification of the ACECP?

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<sup>28</sup> Exhibit 4007 Page 20 of 38 Footnote 17 “Carlsbad Energy Center claims that Encina has reached the end of its useful life, and states that the capital improvement planning and maintenance plans for Encina are predicated on retirement by December 31, 2017. (Carlsbad Energy Center opening brief, at 18; Ex. 3 at 8-9.)”

<sup>29</sup> Exhibit 6005 Page 4, Exhibit 6002 page 4 of 14



- 3) Will the Commission require an amendment when evidence appears in the request for reconsideration of the Carlsbad Decision that Carlsbad Energy has assured the CPUC Commissioners that they intend to build only five turbines not six. ( New evidence can only be submitted under reconsideration)
  
- 4) Is the Committee familiar with SB 83 and which becomes effective on July 1 and will the Committee now require Carlsbad Energy to pay for this amendment or will the ratepayers again be stuck with the tab for licensing this project after losing hundreds of thousands of dollars on the 2007 Carlsbad proceeding.