

CALIFORNIA ENERGY COMMISSION

16 NINTH STREET
 SACRAMENTO, CA 95814-5512



**STATE OF CALIFORNIA
 ENERGY RESOURCES CONSERVATION
 AND DEVELOPMENT COMMISSION**

California Energy Commission DOCKETED 11-AFC-1 TN # 67147 SEP 17 2012

In the Matter of:)	Docket No. 11-AFC-01
)	
PIO PICO ENERGY CENTER)	SURREBUTTAL TESTIMONY
)	to Bill Powers' Rebuttal Testimony
PIO PICO ENERGY CENTER, LLC)	by: David Vidaver
)	

INTRODUCTION

On February 9, 2011 Pio Pico Energy Center LLC submitted an Application for Certification (AFC) to the California Energy Commission seeking permission to construct and operate a power generation facility, the Pio Pico Energy Center (PPEC), in the County of San Diego, adjacent to the existing Otay Mesa Generating Project. The PPEC is a proposed simple-cycle power generation project that consists of three General Electric LMS100 natural gas-fired combustion turbine generators. The total net generating capacity would be 300 megawatts, with each CTG capable of generating 100 megawatts.

The AFC for the PPEC was found data adequate on April 20, 2011, and a public Site Visit and Informational Hearing was held on May 16, 2011. The Preliminary Staff Assessment was issued on February 22, 2012, which was followed by the Final Staff Assessment issued on May 22, 2012.

On June 15, 2012, the Committee in this matter issued a Notice of Prehearing Conference and Evidentiary Hearing ("Notice"). The Schedule established by the Committee as set forth in the Notice specified that all opening testimony be filed no later than June 26,¹ and that all rebuttal testimony be filed 10 days later, by July 6, 2012. In compliance with the Schedule, on July 6 Bill Powers submitted his rebuttal testimony "as an expert witness for Rob Simpson in this proceeding."

Having read and considered the written testimony offered by Bill Powers on July 6, staff finds it necessary to rebut many of the claims, statements, and conclusions contained in his testimony. In order to provide clarity for the Committee, these are matters that would be more effectively handled via limited rebuttal testimony rather than through cross examination. Staff therefore offers the following surrebuttal testimony of David Vidaver on the limited scope of Mr. Powers' rebuttal testimony.

¹ Staff's Opening Testimony, contained within the Final Staff Assessment, was published and made available to the parties on May 22, 2012.

SURREBUTTAL TESTIMONY
To Bill Power's Rebuttal Testimony
By: David Vidaver

Q: Mr. Powers claims that the CEC “[failed] to follow the loading order in its analysis of the alternatives to the proposed Pio Pico Energy Center.” Does the loading order referred to in Mr. Powers’ testimony mandate the choice of alternatives that Energy Commission staff would consider in siting cases?

A: No. The Energy Action Plan, which discusses the loading order referred to in Mr. Powers’ testimony, does not bind the Energy Commission to evaluate specific alternatives as part of its power plant licensing process. It merely

“envisions a “loading order” of energy resources that will guide decisions made by the agencies jointly and singly. First, the agencies want to optimize all strategies for increasing conservation and energy efficiency to minimize increases in electricity and natural gas demand. Second, recognizing that new generation is both necessary and desirable, the agencies would like to see these needs met first by renewable energy resources and distributed generation. Third, because the preferred resources require both sufficient investment and adequate time to “get to scale,” the agencies also will support additional clean, fossil fuel, central-station generation. (p. 4).

Q: Would the licensing of the PPEC reduce deployment or development of such preferred resources as energy efficiency and demand response programs, renewable generation, and/or distributed generation?

A: No. The licensing of the PPEC would not reduce or eliminate opportunities for conservation and energy efficiency. The CPUC has established utility-specific targets for the procurement of energy efficiency savings, based on expected funding of energy efficiency programs through 2020. Similarly, the Legislature and the CPUC have established renewable energy procurement targets for each utility, equal to one-third of each utility’s retail sales by 2020.

In the 2010 Long-Term Procurement Planning (LTPP) proceeding, the CPUC established utility-specific targets for peak capacity savings through the development of demand response programs, and the procurement of cogeneration through the utility Qualifying Facility and Combined Heat and Power Procurement Programs (It is currently developing similar targets for use as standardized planning assumptions in the 2012 LTPP proceeding). The CPUC has also established targets for the procurement of distributed generation (DG) through such programs as the California Solar Initiative, the utility Photovoltaic Programs, the Renewable Auction Mechanism, etc., and provided incentives for the development of distributed generation, providing per-kW subsidies for project development (e.g., the Self Generation Incentive Program) and requiring the development of tariffs specifying the price at which utilities must buy energy from DG resources (e.g., that developed pursuant to the Waste Heat and Carbon Emissions Reduction Act; AB1613, Blakeslee, Chapter 713, 2007). Each of these targets and incentives will remain in place, unchanged and unaffected if the PPEC is licensed and built.

Q: Is the PPEC an example of “fossil fuel, central –station generation” that is needed because preferred resources “lack sufficient investment” and have not had “adequate time to ‘get to scale?’”

A: Yes, in part. Policy-makers have set targets for preferred resources based on the assumption that these quantities reflect cost-effective amounts of each of them; i.e., that procuring larger quantities of, for example, energy efficiency might cost more than ratepayers would be willing to pay for the benefits received, given the cost of their procurement;² The CPUC authorized the procurement of generation capacity through an all—source RFO after imposing the requirement that all preferred resource targets be met. The observation that rooftop solar or demand response (or a combination thereof) is an alternative to the PPEC must be assessed in this context. *Reductio ad absurdum*, if preferred resources can be shown to be a desirable alternative to first the PPEC, then to another specific natural-gas fired project, then to another, and so on, the set of targets established by policy-makers lose any meaning.

The public has had the opportunity to participate in numerous stakeholder proceedings at the CPUC. During these proceedings, preferred resource targets have been established and imposed on the state’s investor-owned utilities, and the public had the opportunity comment on the contract that SDG&E signed with the PPEC. In other proceedings before the CPUC and ISO, and the need for capacity in the San Diego LRA was established. Also, the public had the opportunity to comment upon ISO studies which evaluate the need for flexible capacity. The Energy Commission’s power plant siting process is not the forum in which (a) conclusions reached by the ISO regarding the need for dispatchable capacity and capacity-related ancillary services in the San Diego LRA and outside it, or (b) conclusions reached by the CPUC regarding the relative costs of providing those products by different technologies be reassessed or re-litigated.

Q: Is the PPEC providing services that preferred resources as defined in the Energy Action Plan could not provide, or could only provide in smaller quantities?

A: Yes. The PPEC is providing a number of services that cannot be provided by rooftop solar, including the ability to change output over a wide range within a few minutes, in order to meet load-following needs. The PPEC would also provide frequency response in the San Diego area, something that solar photovoltaics cannot do.

Q: What is the relevance of solar availability during the 100 top demand hours to a comparison of the performance of solar resources to the PPEC?

A: Solar availability during the 100 top demand hours is not relevant to a comparison of the performance of solar resources to the PPEC. As defined by Mr. Powers, the availability of solar

² While these targets represent floors, utilities are required to procure larger quantities of each of these resources where it is cost-effective to do so, hence the use of cost-benefit ratios as the driver for energy efficiency program deployment, and the requirements that demand-side resources be allowed to participate in ancillary service markets, and renewable resources be allowed to bid into “all source” solicitations.

resources during high load hours offers little or no insight into the actual performance of solar resources and, thus, does not inform such a comparison. In his Attachment B, Mr. Powers offers that, based on global irradiance data, solar resources were “100% available” between 8:00 PM and 9:00 PM on September 3, 2007. Actual output from fixed-mount small-scale solar at this time, even under ideal conditions, would be zero.

Q: What is the relevance of the assertion that “NEM PV systems provide capacity at an availability of at least 98 percent in aggregate during critical peak demand?”

A: This assertion is not relevant to a comparison of the performance of solar resources to the PPEC. Again, as defined by Mr. Powers, availability bears little if any relationship to output. In general, the output of such resources at the time of the peak (3:00 PM - 4:00 PM in August) can be expected to be no more than 50% – 60% of nameplate capacity. As Mr. Powers notes, the addition of 750 MW of new NEM PV capacity would only reduce loads in August between 3:00 – 4:00 PM by 400 MW, not 735 (= 750×0.98) MW.

Even if Mr. Powers’ definition of availability informed a comparison of the output of the PPEC and rooftop solar during the top 100 hours, the value of such a comparison would be limited. The PPEC is needed to meet capacity and load-following requirements during, e.g., the morning (6:00 AM – 10:00 AM) and evening ramp (4:00 PM – 8:00 PM) year-round. The PPEC is not solely a peaking facility; it provides products and services that rooftop solar does not, and does so at times when rooftop solar is largely unavailable.

Q: Would 750 MW of NEM PV lower SDG&E’s peak load by 400 MW?

A: No. The Energy Commission’s 2012 demand forecast for San Diego already assumes a 135 MW reduction in peak load in San Diego by 2022 due to the installation of roughly 200 MW of rooftop solar during 2011 – 2022. More importantly, solar resources, in aggregate, are limited in their ability to reduce SDG&E’s peak load by the fact that they can shift peak load to later in the day. It is perhaps easiest to illustrate this by referring to Figure 4 in Mr. Powers’ testimony. A 400 MW reduction in load during 3:00 – 4:00 would result in the peak load occurring at 7:00 PM, when solar output is negligible. It would appear that the capacity value of adding solar resources to the system depicted in Figure 4 is limited to roughly 300 MW, the difference between the current 4:00 PM peak and demand at 7:00 PM.

Q: Would 750 MW of NEM PV lower SDG&E’s peak load by roughly 300 MW?

A: No. The system depicted in Figure 4 is for the year 2010. Since August 1, 2010, 55 MW of rooftop solar capacity has been developed in the SDG&E service territory through the California Solar Initiative. SDG&E is also obligated to procure 100 MW (74 MW privately owned) through its Solar Energy Project (SEP), and 81 MW through the Renewable Auction Mechanism (RAM). In other words, close to 400 MW of solar resources are already planned for on either the customer- or utility-side of the meter, leaving less “headroom” for an additional 750 MW of NEM PV.

In addition, SDG&E has signed contracts with numerous out-of-LRA, central –station solar resources that have yet to come on line; these resources will provide energy during afternoon hours that, in turn, will reduce the difference between the utility’s current (residual) peak load and the “future peak” at 7:00 PM. Given SDG&E’s existing obligations under CSI, SEP, and RAM and contracts in hand with central-station solar projects under development, an incremental 750 MW of NEM PV may have little impact on the utility’s residual capacity needs.

Q: The need for the capacity embodied in the PPEC, as determined by the CPUC, was based on a specific peak demand forecast adopted by the Energy Commission. Did the CEC reduce the SDG&E peak load projection following CPUC [sic] December 2007 decision that is basis [sic] of SDG&E 2009 RFO?

A: Yes.

Q: Have the estimates of peak demand for SDG&E that are most relevant for the need for the capacity embodied in the PPEC (as determined by the California ISO and the CPUC) fallen as much as implied by Mr. Powers in Table 5 in his testimony?

A: No. Mr. Powers notes that the 1-in-10 peak load forecasts for SDG&E for years 2011 and 2012 have fallen by 401 MW when one compares the November 2007 and March 2011 forecasts. The forecasts for 2011 and 2012 were influenced’ however, by the on-going economic recession; the need for new capacity in the San Diego LRA, as determined by the California ISO is driven by *long-run* local capacity requirements, and are thus based on a 1-in-10 peak load forecast for the year 2020. When one extrapolates a forecast for the year 2020 from the forecast published in November 2007 to that from the forecast published in June 2012 (the most recent forecast), the difference is less than 90 MW.

Q: Mr. Powers suggests that a change in the way that outages of existing combined cycles in the San Diego are treated as “contingency events” by SDG&E would reduce the need for capacity in the San Diego area by some 250 MW. Why doesn’t SDG&E do this?

A; The decision is not SDG&E’s to make. The California ISO’s Planning Standards of June 23, 2011 require that Otay Mesa and Palomar each be considered as entirely unavailable for reliability planning purposes. Mr. Powers incorrectly believes that both facilities can operate in simple-cycle mode; this is not allowed by their air permit conditions nor by the design of the facilities. The relevant condition for planning, per the ISO, is based on whether or not either can be reasonably expected to be entirely unavailable at some time. The answer to this question is based upon the historical performance of several new combined cycle facilities. If Otay Mesa or Palomar are not forced out in their entirety more than once in three years, the ISO will amend the planning standard as suggested by Mr. Powers. To date, neither facility has met this performance threshold.

Q: Did the Energy Commission “[fail] to evaluate low cost demand response alternatives to Pio Pico, including but not limited to Ice Bear thermal storage units used extensively by public utilities in Southern California?

A: We did not evaluate demand response services because demand response services are not an alternative to the PPEC.

Q: Mr. Powers notes that there are 700 MW of peaking facilities in San Diego that are capable of responding to the rapid changes in load that the San Diego system has experienced for years. Does this obviate the need for the PPEC?

A: No. First, most of the existing peaking capacity is assumed in the ISO’s assessments of incremental capacity needed to provide reliability in the San Diego area. Second, the changes in net load (demand minus solar and wind output) will be magnified as dependency on solar and wind increase over the coming decade. Imagine a system with no solar and wind: the dispatchable capacity you have to have available in the morning and afternoon has to cover the highest demand you might observe during those hours. If you add a lot of solar and wind, the dispatchable capacity you have to have available has to account for not only the uncertainty in demand, but the uncertainty in the output of those variable energy resources.

By way of example, let us consider Mr. Powers’ 750 MW of NEM PV capacity. While it may produce 400 MW on a clear day between 3:00 – 4:00 PM, it is only producing an average of 135 MW between 5:00 and 6:00 PM, when the peak net load, some 200 MW lower than the original peak load, occurs. This would indicate a capacity value of 335 (= 200 + 135) MW for the 750 MW of installed capacity. But several times during the summer, the output of the NEM PV capacity during 5:00 – 6:00 PM will not be 135 MW (the average), but say, 50 MW. So the PV provides roughly 250 MW of dependable capacity value.

Also, Mr. Power does not consider that the San Diego peakers have permit restrictions that limit annual hours of operation. With increasing solar and wind resources in the system, peakers can be expected to be dispatched more often, albeit for limited duration. However, the frequent starts and stops will cause the units to bump up against permit limits. Further, Mr. Powers fails to consider that some units are nearing retirement.

Q: But could the remaining need for flexible generation to meet load be met by existing peakers or by the units of the Encina facility that would not retire due to the SWRCB policy?

A: If the need for flexible generation to meet renewables were a local need (i.e., variation in the output of wind and solar resources in the San Diego area requiring flexible generation in the San Diego area), reliance on existing peakers in the San Diego area could be used up to permit limits. This would result in greater fuel combustion per unit of electricity generated, as the peakers in San Diego (as well as the units at Encina) are far less efficient than the PPEC. However, ***flexibility is not a local need; it is a system-wide one.*** The need for flexible generation to integrate renewables is a need across the California

Date July 18, 2012

Page 7

ISO and other balancing authority areas. As a result, failure to build Pio Pico to integrate renewables would possibly require the construction of new capacity elsewhere to do so (unless one were to rely on existing, inefficient permit limited generation). If this capacity were outside the San Diego Local Reliability Area, and new capacity were needed in San Diego to meet local reliability needs, two facilities would have to be built where only one is needed.

Date: July 18, 2012

Respectfully Submitted,

A handwritten signature in black ink, appearing to read "Kevin W. Bell", is written over a horizontal line.

Kevin W. Bell

Senior Staff Counsel



**BEFORE THE ENERGY RESOURCES CONSERVATION AND DEVELOPMENT
COMMISSION OF THE STATE OF CALIFORNIA
1516 NINTH STREET, SACRAMENTO, CA 95814
1-800-822-6228 – WWW.ENERGY.CA.GOV**

**APPLICATION FOR CERTIFICATION
FOR THE *PIO PICO ENERGY CENTER PROJECT***

**Docket No. 11-AFC-01
PROOF OF SERVICE
(Revised 7/10/2012)**

APPLICANT

Gary Chandler, President
Pio Pico Energy Center
P.O. Box 95592
South Jordan, UT 84095
grchandler@apexpowergroup.com

David Jenkins, Project Manager
Pio Pico Energy Center, LLC
1293 E. Jessup Way
Mooresville, IN 46158
djenkins@apexpowergroup.com

APPLICANT'S CONSULTANTS

Maggie Fitzgerald
Sierra Research
1801 J Street
Sacramento, CA 95811
MFitzgerald@sierraresearch.com

COUNSEL FOR APPLICANT

John A. McKinsey
Melissa A. Foster
Stoel Rives, LLP
500 Capitol Mall, Suite 1600
Sacramento, CA 95814
jamckinsey@stoel.com
mafoster@stoel.com

INTERESTED AGENCIES

California ISO
e-mail service preferred
e-recipient@caiso.com

INTERVENORS

*Rob Simpson
e-mail service preferred
rob@redwoodrob.com

*Gretel Smith, Esq.
Attorney for Rob Simpson
P.O. Box 152994
San Diego, CA 92195
gretel.smith79@gmail.com

*Corrections Corporation of America
G. Scott Williams, Esq.
c/o Seltzer Caplan McMahon Vitek
750 B Street, Suite 2100
San Diego, CA 92101
swilliams@scmv.com

**ENERGY COMMISSION –
DECISIONMAKERS**

CARLA PETERMAN
Commissioner and Presiding Member
carla.peterman@energy.ca.gov

KAREN DOUGLAS
Commissioner and Associate Member
e-mail service preferred
karen.douglas@energy.ca.gov

Raoul Renaud
Hearing Adviser
raoul.renaud@energy.ca.gov

Jim Bartridge
Presiding Member's Advisor
jim.bartridge@energy.ca.gov

Galen Lemei
Associate Member's Advisor
e-mail service preferred
galen.lemei@energy.ca.gov

ENERGY COMMISSION STAFF

Eric Solorio
Siting Project Manager
eric.solorio@energy.ca.gov

Kevin W. Bell
Staff Counsel
kevin.w.bell@energy.ca.gov

Eileen Allen
Commissioners' Technical
Advisor for Facility Siting
e-mail service preferred
eileen.allen@energy.ca.gov

**ENERGY COMMISSION – PUBLIC
ADVISER**

Jennifer Jennings
Public Adviser
e-mail service preferred
publicadviser@energy.ca.gov

DECLARATION OF SERVICE

I, **Pamela Fredieu**, declare that on, **July 18, 2012**, I served and filed a copy of the attached **SURREBUTTAL TESTIMONY To Bill Powers' Rebuttal Testimony by: David Vidaver** dated **July 18, 2012**. This document is accompanied by the most recent Proof of Service list, located on the web page for this project at: **[www.energy.ca.gov/sitingcases/piopico/index.html]**.

The document has been sent to the other parties in this proceeding (as shown on the Proof of Service list) and to the Commission's Docket Unit or Chief Counsel, as appropriate, in the following manner:

(Check all that Apply)

For service to all other parties:

- Served electronically to all e-mail addresses on the Proof of Service list;
- Served by delivering on this date, either personally, or for mailing with the U.S. Postal Service with first-class postage thereon fully prepaid, to the name and address of the person served, for mailing that same day in the ordinary course of business; that the envelope was sealed and placed for collection and mailing on that date to those addresses **NOT** marked "e-mail service preferred."

AND

For filing with the Docket Unit at the Energy Commission:

- by sending one electronic copy, mailed with the U.S. Postal Service with first class postage thereon fully prepaid and e-mailed respectively, to the address below (preferred method); **OR**
- by depositing an original and 12 paper copies in the mail with the U.S. Postal Service with first class postage thereon fully prepaid, as follows:

CALIFORNIA ENERGY COMMISSION – DOCKET UNIT
Attn: Docket No. 11-AFC-01
1516 Ninth Street, MS-4
Sacramento, CA 95814-5512
docket@energy.state.ca.us

OR, if filing a Petition for Reconsideration of Decision or Order pursuant to Title 20, § 1720:

- Served by delivering on this date one electronic copy by e-mail, and an original paper copy to the Chief Counsel at the following address, either personally, or for mailing with the U.S. Postal Service with first class postage thereon fully prepaid:

California Energy Commission
Michael J. Levy, Chief Counsel
1516 Ninth Street MS-14
Sacramento, CA 95814
mlevy@energy.state.ca.us

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct, that I am employed in the county where this mailing occurred, and that I am over the age of 18 years and not a party to the proceeding.

/s/
Pamela Fredieu, Legal Assistant