

**SUBJECT:**

In the matter of,

*2013 Integrated Energy Policy Report
(2013 IEPR)*

CEC Docket No. 13-IEP-ID

CEERT Comments on
Electricity Infrastructure Issues
September 23, 2013

TO: California Energy Commission: docket@energy.ca.gov
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I. INTRODUCTION

The Center for Energy Efficiency and Renewable Technologies (CEERT) respectfully submits these Comments pursuant to the Amended Notice of Workshop on Southern California Electricity Infrastructure and Reliability Issues dated on August 30, 2013. The Workshop was focused on the joint efforts of the staffs of the California Energy Commission (CEC), California Public Utilities Commission (CPUC), and the California Independent System Operator (CAISO) on an August 30 draft “Preliminary Reliability Plan for LA Basin and San Diego” (“Preliminary Reliability Plan”).

CEERT attended and participated in the September 9 Workshop. CEERT commends the Energy Commission for convening this Workshop and inviting the heads of all energy and environmental agencies to take a seat on the dais. It was refreshing to have the Staff presentations and public comment before all of the relevant agencies simultaneously. This broad participation on this most critical of issues should continue in some form.

The decisions that flow from the early retirement of the San Onofre Nuclear Generating Station (SONGS) and the pending retirement of the obsolete Korean War era coastal gas plants that have together formed the backbone of the electric generation infrastructure in Southern California for a half-century are truly critical infrastructure investments. Ensuring that the bulk electric grid in Southern California is reliable and



resilient in the event of inevitable earthquakes and fires is a sine qua non for the entire West. The mix of resources used to replace these retiring facilities will define the shape of the California electric grid for the next half-century. The budget rivals the expenditures on the Bay Bridge retrofit and the importance rivals the Delta Tunnel or alternatives to provide a reliable, environmentally sustainable, and cost effective water supply for the State.

This is a once-in-many-generations opportunity to chart a long-term course for the State. Exploration of all reasonable alternatives and development of a full public record is essential. By rote replacement in kind of the existing obsolete infrastructure without a fully developed record of alternatives that better serve the long term interests of the State is unacceptable. The process has only just begun with the June 2013, announcement of the permanent retirement of SONGS. This Preliminary Plan and Workshop are part of moving the ball forward, but continued discipline and leadership by all relevant State agencies to make and execute decisions expeditiously and execute them quickly only after *full* consideration of the alternatives is required.

CEERT's position and recommendations on the Preliminary Reliability Plan are addressed below.

II. CEERT POSITION ON "PRELIMINARY RELIABILITY PLAN"

CEERT applauds the Plan's decision to rely heavily on "preferred resources" including energy efficiency, demand response, distributed renewable resources, and combined heat and power that make up the adopted "loading order." The Plan targets of some 3200 MW of these resources to supply a significant portion of the Southern California Local Capacity Requirement is sound. Achieving or exceeding the target will require a concerted effort on the part of the CPUC, the CAISO, and the electricity customer base large and small. CEERT is mindful of the locational requirements and of the need for certainty and timeliness to increase supply and/or reduce demand when these preferred resources are called upon during an emergency. However, proof of concept has long been established¹ and the commercial experience of the Eastern Interconnection Independent System Operators conclusively demonstrates that this 3200 MW target for preferred resources is not only achievable but represents more of a floor than a ceiling.

There is no doubt that significant changes to at least existing CPUC Demand Response programs, CAISO and CPUC tariffs, and maybe most importantly customer behavior and incentives are required to achieve this target. To this end, Southern California Edison Company (SCE) has recently published a Request for Offers for such preferred resources pursuant to its existing procurement authorization from Track I of the 2012

¹ See e.g., CAISO 2009 Participating Load Pilot Project Report, Feb 18, 2010 @ p.2



CPUC Long Term Procurement Plan² and has committed to filing a “Living Pilot” program at the CPUC in the near future³ to explore the near-term potential for preferred resources in the impacted areas of Southern Orange County. These innovative initiatives need to be celebrated, encouraged, and closely monitored. They need to be expanded to the San Diego Gas & Electric Company (SDG&E) service territory. Early results need to be factored into ongoing decisions about alternative resources to meet the need for new investments to maintain reliability.

However, CEERT does not agree with the other principal recommendation in the Plan--that SCE, Southern California Gas Company (SoCal Gas), and SDG&E be given immediate authorization to procure 500 MW each of new conventional gas plants⁴ and to expand gas pipeline capacity in the area to support the new plants. The Plan states that this recommendation flows from the existence of a demonstrated need for additional new conventional resources by 2018, and, given the required construction lead time, procurement authorization needs to be given now in order to have signed contracts and begin construction by early 2015.

The current public record does not support this decision, and other “conventional” alternatives, such as transmission enhancements, have specifically not yet been considered. Well over one half of the Plan’s recommended 3000 MW of conventional resources have already been authorized for procurement under SCE’s Track I authority and SDG&E’s LCR Decision.⁵ CEERT believes there are multiple alternatives to fill the remaining long-term need, methods to expedite procurement following a Commission decision based on a complete public record, and a path to defer any residual need well beyond 2018 should it become necessary without compromising either grid reliability or adopted State policy. CEERT points to the following three themes:

First, there is an assumption that 1,088 MW “non-OTC retirements” will occur at the end of 2017.⁶ In filed testimony at the CPUC, the CAISO stated that this assumption was made simply because these LA Basin plants (presumably Etiwanda and Coolwater)

² CPUC Decision D13-02-015

³ Track 4 Testimony of Southern California Edison in D 12-03-014 August 26, 2013, @ p.49

⁴ Although not specifically defined in either the written Plan or the oral presentations at the Sept 9 workshop, these plants are presumed to be one plant in each utility service territory of the new generation of quick start, fast ramp combined cycle gas turbines with air cooled condensers. Alternatively, they could be multiple copies of the new generation of air cooled hybrid simple cycle plants such as those proposed for the Pio Pico project or recently installed by LADWP at the Haynes complex in Long Beach.

⁵ SCE’s Track I authority to procure 1200-1800 MW of conventional resources as granted in CPUC Decision D13-02-015. SCE has issued an RFO to solicit bids to fill this identified need. SDG&E’s authority to procure 300 MW of conventional resources was granted in CPUC Decision D13-03-029. Results of SDG&E’s solicitation were before the Commission in A 13-06-015.

⁶ See Slide 6 of CAISO presentation at Sept 9 workshop.



were 40 years old on that date.⁷ This retirement decision is clearly discretionary, and, as far as CEERT is aware, has not even been tentatively made by the plant owners.

There should be no discussion of the potential need to defer the regulatory retirement timeline of the OTC plants. These two critical policies are not in conflict. There is no need to “balance” these objectives. The fate of the OTC plants has been sealed and the owners have clearly already begun making decisions to defer maintenance and avoid discretionary capital expenditures given their short remaining life. The reliability of these plants will inevitably deteriorate in the intervening years. To the extent that a safety valve needs to be in place to allow for a slip in schedule for some new resource procurement, the non-OTC plants should be specifically designated to take on this role, and incentives designed to ensure continued reliability during their twilight years.

Second, transmission planners at the CAISO recently raised the planning standard defining the meaning of “reliability” above federal NERC minimum standards and above current WECC practice. For over forty years the relevant metric for “reliability” in Southern California has been the ability to withstand the loss of one unit at SONGS plus one major transmission element during a one in ten year peak load day. CAISO staff has set a new standard of the ability to withstand the near simultaneous loss of *both* 500 kv lines into San Diego without allowing operation of the existing WECC approved Special Protection Scheme relying on controlled load shedding during this particular contingency. Since the loss of SONGS in 2012, SDG&E has used the loss of the Otay Mesa natural gas plant plus one of the 500 kv import lines as the local planning standard. SCE has relied on the existence of the SDG&E SPS scheme to mitigate transmission overloads in its service territory during this low probability but consequential event. In filed testimony at the CPUC, both SCE and SDG&E have stated⁸ that adoption of this new reliability metric by the CAISO, while within its discretion, causes the LCR need in their respective service territories to increase by roughly 500 MW each.

This planning assumption is critical not simply to the numerical value of the resulting Local Capacity Requirement, but literally to the economic engine of the State. Even the perception that somehow the bulk grid in Southern California is less reliable than it could reasonably be is an important policy choice that is not conveyed by dry, arcane terms like N-1-1 versus G-1, N-1.

CEERT does not maintain that this critical planning assumption by the CAISO is “wrong,” but that it so central to this debate that it is not merely a technical decision to

⁷ Track 4 Testimony of Robert Sparks on Behalf of the CAISO in R 12-03-014 Aug 5, 2013 @ p.23

⁸ op cit SCE Track 4 Testimony p. 29; Prepared Track 4 Direct Testimony of SDG&E in R 12-03-014 witness John Jontry, Aug 26, 2013 @ p.6



be made solely by engineering staff, but a policy decision to be made by, at a minimum, appointed Commissioners in a recorded vote based upon a public record.

There must be a clear statement of what natural events need to be planned for and mitigated. For example, should the grid be designed to withstand a major earthquake near the Salton Sea that takes out the Imperial Substation without subsequent loss of load in the coastal population centers? What is the plan for dealing with a large forest fire in eastern San Diego County that potentially threatens both transmission corridors? Should any major disturbance(s) like these be allowed to cascade to the North and threaten the Los Angeles Basin grid as well? What lessons are to be learned from the blackout of 2011? What role needs to be played by non-CAISO balancing authorities such as the Los Angeles Department of Water and Power, the Imperial Irrigation District, or out of state balancing authorities on the interconnected WECC grid? Would holding spinning reserve in the right location whenever imports into San Diego went above a certain amount be a more appropriate alternative or complementary strategy to building new gas capacity? Would it be better to obtain this spinning reserve from one or more of the large pumped storage facilities being considered in San Diego County? How should costs for achieving the appropriate reliability standard be assessed and allocated to all users of the grid? All of these questions and more need to be debated in a public forum.

It is not necessary to decide all of the long-term ramifications prior to making decisions about the precise magnitude of the Local Capacity Requirement in Southern California. However, the public discussion must begin immediately, and results of this discussion, not simple advance speculation about the outcome, need to inform procurement decisions going forward.

Third, at this point in the barely three-month old process of need assessment, the underlying basic technical studies required to inform the debate about a grid without SONGS have not been completed. Although CAISO, SCE and SDG&E have recently completed power flow studies and filed them at the CPUC in the LTPP Track IV proceeding, parties have not yet had the opportunity to comment. Opening Comments on these critical studies are due next week. The CAISO has not yet completed the highly technical reactive power flow studies necessary to determine stability limits, locational effectiveness factors, and transmission losses.

SCE has proposed a very attractive transmission upgrade to convert the Mesa substation to 500 kv. This project involves no new right of way and minimal upgrades outside the confines of the Mesa substation itself. Preliminary assessments by SCE show the potential for the "Mesa Loop-In Project" to supply significant Local Capacity benefits at roughly three times the cost effectiveness of new or repowered gas



facilities.⁹ Other transmission upgrades have been proposed, the potential for pumped storage in San Diego County to supply some or all of the incremental LCR need has not been assessed. These studies need to be completed *before* rushing to procure new gas that may be in the wrong location, be the wrong technology, or may not be required at all. In fact, the CAISO itself proposed such a schedule, and has committed its resources to complete the required technical analyses to inform the final procurement decision by Q1 2014.¹⁰

CEERT, among other parties, recently filed comments at the CPUC¹¹ demonstrating the ability to complete the technical studies to consider transmission alternatives and continue the public dialogue on the broader questions through the end of Q1 2014, and still meet an early 2015 “deadline” for signed contracts for construction of conventional gas generation. Clearly, there is sufficient time to consider conventional alternatives to new gas facilities, drill deeply into the details of preferred resource potential, and develop a complete public record without compromising reliability of the grid in any way.

Finally, CEERT believes that any decision to increase the State’s reliance on natural gas to generate electricity needs to be made carefully. The state is already dependent on this volatile commodity for two thirds of its generating capacity and over fifty percent of its energy requirement even after build out of new renewables to meet the 33% RPS standard. Natural gas has a well-deserved reputation earned over several decades for sudden, unexpected price spikes¹² and supply disruptions. Proponents of natural gas argue that the recent adoption of “fracking” technology to enhance supply makes future price hikes highly unlikely. A decision to build yet more new gas plants and new local pipeline infrastructure in urban areas to support those new plants while relying on a controversial new technology to ensure cost effective supply should not be undertaken lightly.

The argument for proceeding cautiously with new gas construction does not rely on portfolio theory or environmental considerations alone. Consider simple Adam Smith economics. Even after the retirement of the OTC plants, California has a huge surplus of gas generation capacity. CAISO and IOU modeling for the Long Term Procurement Plan shows that capacity reserve margins exceed 20% and the capacity factor of the then existing fleet of combined cycle gas plants will be less than 40% in the next decade. Owners of existing less than ten-year old combined cycle plants such as Calpine with its Sutter plant, and Edison Mission Energy with its Sunrise plant have publicly discussed early retirement of these facilities simply because they do not run

⁹ op cit SCE Track 4 Testimony @ p. 17

¹⁰ Comments of CAISO on Proposed Track 2 and Track 4 Procedural Schedules in R12-03-014 @ p.5

¹¹ Comments of CEERT on the Track 4 Schedule in R 12-03-014, Sept 10, 2013 @ pp.5-6

¹² The last major price spike occurred in 2008 when spot prices tripled only to be “rescued” by the financial collapse of the economy in the fall of that year



often enough or receive a high enough electricity market price to cover the ongoing cost of operation.

This so-called “missing money” problem has been the subject of much debate at the CAISO and in the boardrooms of gas plant owners. Constructing yet more new capacity in this already oversaturated market will simply make this problem worse. Indeed, the best argument for the retirement assumption of the in-Basin non-OTC gas plants that triggers the “early need” for new in-Basin gas construction is that the old plants are the least efficient left on the system and will be forced off the back end of the dispatch stack by the new efficient units. Thus it is entirely possible that we would not gain any incremental increase in Local Capacity Resource supply by constructing new gas facilities.

III CONCLUSION

In conclusion, CEERT recommends the following:

- 1.) Complete the long-term voltage support studies assessing the need for reactive power in the absence of SONGS and the preliminary assessment of transmission enhancements that could quickly mitigate the need for new generation resources in the coastal zone. The CAISO has stated that technical studies can be completed by the end of January 2014, and the policy analyses by March 2014. This schedule should be made a firm deadline.
- 2.) Conduct a public discussion of the planning standard for defining “reliability” in Southern California. This is a critical policy decision that must result in public confidence that the appropriate contingencies have been assessed, the alternative mitigation strategies have been considered, and the required expenditures are indeed justified. This discussion should happen at both the CPUC and the CAISO this fall and a firm deadline should be established for reaching a decision by the end of 2013.
- 3.) Immediately expedite the aggressive procurement of preferred resources initiated by Southern California Edison. Expand this effort to San Diego Gas and Electric service territory. Early results from this procurement should be used to guide appropriate changes in CAISO tariffs and CPUC programs to maximize the cost effective deployment of preferred resources to both mitigate the need for and to actually supply Local Capacity Resources. A detailed deployment plan should also be established by June of 2014.
- 4.) Develop a long-term blueprint for rightsizing the gas fleet. Now that the big decision of a firm retirement schedule for the OTC plants has been made, we cannot continue the recent practice of making one-off stop gap decisions about when, where and how to



upgrade the remainder of the existing fleet or procure new plants. SCE and SDG&E have proposed policies such as contingent procurement, pre-permitting and pre-siting of new facilities. These proposals should be taken seriously and broadened to include the policy implications of long-term gas supply, portfolio considerations, retrofit opportunities for existing facilities, and basic economics of the gas fleet. Perhaps the CEC IEPR is the appropriate forum for this critical discussion.

5.) Above all, execute the plan developed over the next 6-9 months crisply. A deadline of early 2015 should be set for signing contracts to construct the facilities deemed necessary for reliability after procuring all cost-effective preferred resources. A deadline for procurement decisions by mid-2014 should also be set, and the steps required between the decision to procure and the conclusion of negotiations should be expedited. During this fall 2013, the CPUC's LTPP Track IV proceeding should be focused on developing this detailed schedule and plan.

