

**BEFORE THE PUBLIC UTILITIES COMMISSION OF THE
STATE OF CALIFORNIA**

Order Instituting Rulemaking to Integrate and)
Refine Procurement Policies and Consider Long-)
Term Procurement Plans.)

R.12-03-014
(Filed March 22, 2012)

**CALIFORNIA ENVIRONMENTAL JUSTICE ALLIANCE'S
TRACK I OPENING BRIEF**

SHANA LAZEROW
Staff Attorney
Communities for a Better Environment
1904 Franklin Street, Suite 600
Oakland, CA 94612
Telephone: (510) 302-0430
Facsimile: (510) 302-0437
slazerow@cbeocal.org

DEBORAH BEHLES, SHANNA FOLEY
CATHERINE DICKSTEIN,* MABEL YEE*
CELESTE YOUNG,* ADELE SCHAFFER*
Environmental Law and Justice Clinic
Golden Gate University School of Law
536 Mission Street
San Francisco, CA 94105
Telephone: (415) 442-6647
Facsimile: (415) 896-2450
dbehles@ggu.edu, sfoley@ggu.edu

Dated: September 24, 2012

Attorneys for California Environmental
Justice Alliance

* Certified law students under California State bar rules governing the Practical Training of Law Students working under the supervision of Deborah Behles.

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I. SUMMARY OF RECOMMENDATIONS

RECOMMENDATION 1: The California Environmental Justice Alliance (CEJA) urges the Commission to find that Southern California Edison (SCE) has no need for additional procurement to meet its long-term local capacity requirements (LCR) needs at this time. CEJA provides the following support for this recommendation:

- The purported need for new long-term procurement is based on CAISO's modeling, which relies on a highly improbable scenario that two import pathways to SCE's territory are unavailable on the hottest day in ten years. CAISO's analysis, which it has never before performed with a ten-year lookout, is inconsistent with the Commission's reserve margin and Resource Adequacy decisions. CAISO's contingency scenario presents the Commission with a worst case situation that goes over and above what is required by reliability standards. Using this highly improbable scenario will likely lead to stranded assets.
- CAISO only finds a need in SCE's local area by making a number of overly conservative assumptions. CAISO assumes that no uncommitted energy efficiency (EE) comes online between now and 2021, that there is no demand response (DR) online, that no new combined heat and power (CHP) comes online between now and 2021, that no distributed generation (DG) beyond the assumptions in the 2010 LTPP Scoping Memo is developed, and that no energy storage comes online. CAISO also assumes that all once through cooling (OTC) plants will retire. When preferred resources are adequately considered, SCE's LCR need is reduced to zero.
- CAISO unreasonably assumes that there will be no new unapproved transmission projects developed between now and 2021. Parties have pointed to multiple transmission mitigation projects that could reduce LCR need. CAISO and SCE both admit that further research can and should be done on these transmission possibilities.
- Reliance on speculative dire snapshots to justify long-term resource procurement is not necessary, just, or reasonable. Committing billions in ratepayer funds to new projects should not be justified based on such seriously flawed modeling. CAISO's analysis is inconsistent with the significant expenditures into preferred resource programs, the loading order, and the state's greenhouse gas (GHG) requirements.

RECOMMENDATION 2: If the Commission finds there is an LCR need, which CEJA believes there is not, CEJA urges the Commission to establish a concrete plan to ensure that procurement complies with the loading order, California's GHG and environmental justice goals, and other requirements. CEJA also urges the Commission not to limit potential procurement to resources that meet CAISO's new flexibility definition.

- SCE has outlined a procurement strategy that fails to ensure loading order compliance. Instead, SCE seeks to hold a Request for Offers (RFO) that will almost certainly result in the exclusive procurement of fossil-fuel resources. The Commission should prioritize procurement of preferred resources in order to ensure that LCR procurement does not impede California's environmental goals and requirements.

- The Commission should also ensure that SCE is adequately considering the GHG impact of its procurement choices.
- CEJA recommends instituting two policies aimed at remedying the disproportionate impact that fossil-fuel facilities have had on environmental justice communities. First, no new fossil-fuel facilities should be sited in environmental justice communities. Second, a certain percentage of any renewable resources procured to meet LCR need should be located in environmental justice communities.
- Flexibility has been defined so narrowly by CAISO that only fossil-fuel resources can likely meet all flexibility attributes. Certain resources, such as energy efficiency, should not have to meet flexibility attributes where the resource actually lowers need. Thus, resources that do not have flexibility attributes should still be eligible for procurement where the resource lowers load, thereby eliminating any need in the first place. Further, the Commission should also consider the extent to which preferred resources can meet flexibility attributes when combined. Finally, there is already an abundance of flexible resources on the system.

ACRONYM LIST

AB	Assembly Bill
ALJ	Administrative Law Judge
AMI	Advanced Metering Infrastructure
BBEES	Big Bold Energy Efficiency Strategy
CAISO	California Independent System Operator
CARB	California Air Resources Board
CCC	California Cogeneration Council
CEC	California Energy Commission
CEJA	California Environmental Justice Alliance
CHP	Combined Heat & Power
CSI	California Solar Initiative
DR	Demand Response
DG	Distributed Generation
DRA	Division of Ratepayer Advocates
EAP	Energy Action Plan
EE	Energy Efficiency
FERC	Federal Energy Regulatory Commission
FIT	Feed in Tariff
GHG	Greenhouse Gas
IEPR	Integrated Energy Policy Report
IOU	Investor-Owned Utility
LCR	Local Capacity Requirements
LSE	Load Serving Entity
LTPP	Long-Term Procurement Plan
MT	Metric ton
MW	Megawatt
NEM	Net Energy Metering
NERC	North American Reliability Corporation
NQC	Net Qualifying Capacity
OTC	Once-Through Cooling
PG&E	Pacific Gas & Electric
PLS	Permanent Load Shifting
PV	Photovoltaic
PURPA	Public Utility Regulatory Policies Act
QF	Qualifying Facility
RAM	Renewable Auction Mechanism
RFO	Request for Offers
RPS	Renewable Portfolio Standard
RA	Resource Adequacy
SGIP	Self-Generation Incentive Program
SCE	Southern California Edison
SDG&E	San Diego Gas & Electric
WECC	Western Electricity Coordination Council

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CALIFORNIA ENVIRONMENTAL JUSTICE ALLIANCE’S OPENING BRIEF

The California Environmental Justice Alliance (CEJA) respectfully submits this Opening Brief. This Opening Brief is timely submitted pursuant to the schedule decided by the Administrative Law Judge at the evidentiary hearing. The discussion in this brief adheres to the order of the common briefing outline with headings changed to reflect CEJA’s position.

INTRODUCTION

At issue in this proceeding is whether billions of dollars of new procurement to mitigate a contingency highly unlikely to ever occur should be authorized. The California Independent System Operator (CAISO) asserts that new procurement is necessary based on an analysis that assumes: (i) two major transmission lines are out of service; (ii) it is the hottest day in 10 years, (iii) no demand response is available, (iv) no uncommitted energy efficiency has been realized, (vii) no new energy storage has been developed between now and 2021, (viii) no incremental combined heat and power is available, (ix) all natural gas once through cooling facilities have retired, (xi) Southern California Edison did not meet its distributed generation goals, (xii) CAISO did not exercise its load drop ability, and (xiii) no additional transmission projects are planned and completed in the intervening years.

These assumptions raise serious questions about CAISO’s analysis and whether the Commission should rely on it to authorize billions of dollars of ratepayer expenditures. For instance, the local capacity requirements (LCR) need would have been significantly reduced if CAISO had considered additional potential transmission mitigation projects. Further, if CAISO had appropriately considered the preferred resources that the Commission and the California Energy Commission (CEC) have projected to be online, CAISO would have found no need.

CAISO regularly performs an LCR analysis with both a one and five year lookout, but it has never before tried to perform an LCR analysis with a ten year lookout. CAISO's analysis is attempting to equate its long-term transmission planning exercise with long-term procurement requirements. However, the two are not the same. There is no requirement for utilities and CAISO to hold enough capacity for a 1-in-10, double contingency, worse scenario day like the kind that CAISO is predicting on a ten-year, look-ahead basis. Basing new procurement on an improbable scenario will likely lead to stranded assets.

In addition, predictions ten years into the future will be wrong. Seemingly small modifications such as a change to a category of a contingency can produce drastically different results.¹ The Commission should not base a procurement decision on a highly unrealistic hypothetical event ten years into the future. Reliance on such speculative dire snapshots of the future to justify long-term expensive resource procurement is not necessary, just, or reasonable. Indeed, if the Commission started authorizing procurement on every potential contingency scenario, there would scarcely be a limit as to what could be justified for the sake of reliability. CAISO's analysis would require higher levels of procurement than the Commission's reserve margin and Resource Adequacy (RA) decisions, and would be inconsistent with the significant expenditures into preferred resource programs and the state's greenhouse gas (GHG) reduction requirements.

For all of these reasons, the Commission should find that there is no need for procurement in SCE's territory.

¹ See CAISO Ex. 8 (R. Spark's April SDG&E 2012 Test.) at p. 4 (change of over 200 MW resulted from the change in an outage from a Category C to a Category C outage).

REGULATORY AND POLICY BACKGROUND

A. Ratepayer Protections

Pursuant to the Public Utilities Code, the Commission has a duty to ensure that customers receive reasonable services at just and reasonable rates.² Public Utilities Code Section 451 also requires that rates be “[j]ust and reasonable” based on the cost of service.³ Many other sections of the Public Utilities Code similarly echo the Commission’s duty to ensure “just and reasonable” rates.⁴ These requirements are based on the “key principle that costs borne by ratepayers should closely match benefits they receive.”⁵ Transactions must also be used and useful to receive rate base treatment.⁶ To determine whether a transaction is used and useful, a utility must show a “reasonable need.”⁷ Where a project “subject[s] the ratepayers to unacceptable risks,” and the utility fails to make “an adequate showing of need,” the costs to the ratepayer would not be just and reasonable.⁸ An adequate demonstration of need includes factors indicating that the project “is needed to meet reliability or forecasted electrical demand of [utilities’] customers” or to fill a “gap in the market.”⁹

² *PG&E v. Public Utilities Com’n* (2004) 118 Cal.App.4th 1174, 1198; *see also* Cal. Pub. Util. Code § 454.5.

³ Cal. Pub. Util. Code § 451.

⁴ *See e.g.*, Cal. Pub. Util. Code § 454 (requiring rate changes to be “justified”); 454.8 (mandating “reasonable and prudent” construction costs); 701.10 (a) (establishing that water utilities may receive a “reasonable return” on “used and useful investment[s]”); 727.5 (e) (giving water utilities the “opportunity to earn a reasonable return on its used and useful investment”); 790 (b) & (e) (allowing for reasonable return for water utilities, and mandating the Commission’s “authority to determine the used, useful, or necessary status of any and all” investments in infrastructure); 454.5 (requires that a Commission approved long-term procurement plan “[e]nable the electrical corporation to fulfill its obligation to serve its customers at just and reasonable rates.”).

⁵ *See Toward Utility Rate Normalization v. Public Utilities Com.*, 44 Cal.3d 870, 877 (Section 454.8 codifies the “key principle” that costs borne by ratepayers should closely match benefits they receive) (internal quotation marks omitted).

⁶ *See* D.09-06-049 at p. 47 (“the Commission has an ongoing duty to ensure that utility investments result in infrastructure that is used and useful”); *see also* Cal. Pub. Util. Code § 454.8.

⁷ *Cf.* D.05-12-020 at pp. 20, 44 (finding equipment was “used and useful” because utility had established its “reasonable need.”).

⁸ D.11-03-036 at pp. 2-3 (rejecting project that would “subject the ratepayers to unacceptable risks,” and holding that the utility failed to make “an adequate showing of need.”)

⁹ *Id.* at p. 3

B. Loading Order and Energy Action Plan

All utility procurement must comply with the loading order. The loading order requires utilities to: “invest first in energy efficiency and demand-side resources, followed by renewable resources, and only then in clean conventional electricity supply.”¹⁰

Utilities have historically failed to comply with the loading order. In the 2006 LTPP decision, the Commission found that “all three LTPPs were deficient and spotty in regards to addressing filling their net short position with preferred resources from the [Energy Action Plan] loading order and particularly inadequate in accounting for GHG emission reductions.”¹¹ Despite the requirement that conventional resources be employed as a last resort, the LTPPs were “for the most part, filling and projecting to fill their projected net short positions with conventional resources.”¹² Due to this lack of compliance, the Commission found that “[g]oing forward the utilities will be required to reflect in the design of their requests for offers [“RFO”] compliance with the preferred resource loading order and with GHG reductions goals and demonstrate how each application for fossil generation comports with these goals.”¹³ The Commission held that subsequent LTPP filings for all “regulated utilities not only conform to the energy and environmental policies in place, but aim for even higher levels of performance.”¹⁴

In the 2010 LTPP, the Commission reiterated concerns that the utilities were filling their net short positions with conventional, rather than preferred resources.¹⁵ Due to this concern, the Commission directed the utilities to “procure additional energy efficiency and demand response resources to the extent they are feasibly available and cost effective,”¹⁶ and that this approach

¹⁰ D.12-01-033 at p. 17 (citing the Energy Action Plan 2008 Update at p. 1); Cal. Pub. Util. Code § 454.5(b)(9)(C).

¹¹ D.07-12-052 at p. 3.

¹² *Id.*

¹³ *Id.* at pp. 3-4.

¹⁴ *Id.* at 4.

¹⁵ D.12-01-022 at p. 21 (citing D.07-12-052 at p. 271).

¹⁶ *Id.*

“continues for each step down the loading order.”¹⁷ The Commission further clarified that the “loading order applies to all utility procurement, even if pre-set targets for certain preferred resources have been achieved.”¹⁸

C. California’s GHG Requirements

In the Global Warming Solutions Act of 2006 (AB 32), California committed to reducing GHG to 1990 levels by 2020.¹⁹ California also has a goal to reduce GHG emissions by 80 percent below 1990 levels by 2050.²⁰ The California Air Resources Board (CARB) detailed several key actions necessary to reach this goal, including: “[e]xpanding and strengthening existing energy efficiency programs as well as building and appliance standards,” reducing natural gas consumption, and “[a]chieving a statewide renewable energy mix of 33 percent.”²¹ Importantly, CARB estimates that a significant portion of GHG reductions will come from energy efficiency (EE) and renewable portfolio standards (RPS) measures.²² CARB’s AB 32 Scoping Plan also estimates that EE and the RPS will provide public health benefits by reducing harmful pollution.²³

To implement these goals, the Commission and the CEC issued a decision evaluating how to reduce GHG emissions in the energy sector. The GHG analysis in that decision demonstrates that “different resource policy scenarios result in very different levels of GHG

¹⁷ *Id.*

¹⁸ *Id.* at p. 20.

¹⁹ California Assembly Bill 32, the Global Warming Solutions Act of 2006, Chapter 488, 2006 (Nunez).

²⁰ California Executive Order S-3-05; *see also* CEJA Ex. 7 (J. May Selected Sources) (AB 32 Scoping Plan) at p. 108.

²¹ CEJA Ex. 7 (AB 32 Scoping Plan) at p. 109; *see also* CEJA Ex. 1 (B. Powers Test.) at p. 2 (describing Scoping Plan).

²² CEJA Ex. 7 (AB 32 Scoping Plan) at pp. 109-11. The Commission and the CPUC estimated the magnitude as: “ARB’s Climate Change Draft Scoping Plan envisions that the electricity sector will contribute at least 40% of the total statewide GHG reductions, even though the sector currently creates just 25% of California’s GHG emissions.” *See* CPUC and CEC Final Opinion on Greenhouse Gas Regulatory Strategies, in R.06-04-009, at p. 2, *available at* <http://www.energy.ca.gov/2008publications/CEC-100-2008-007/CEC-100-2008-007-F.PDF>.

²³ CEJA Ex. 7 (J. May Selected Sources) at pp. 107 (AB 32 Scoping Plan).

emissions in 2020.”²⁴ The results of the GHG model also shows that “[e]nergy efficiency is extremely important for limiting the economic impacts of GHG reduction on consumers . . . [and] average utility bills would decline along with policies that reduce GHG emissions.”²⁵

D. Reserve Margin Requirements

The Commission has previously evaluated the appropriate reliability criteria for authorizing long and short-term procurement. For long-term procurement, the Commission has generally relied on a 1-in-2 baseline forecast with a 15-17% reserve margin above the forecast load.²⁶ This reserve margin provides “the cushion should hotter than average weather occur.”²⁷ Notably, this reserve margin is conservative. The Western Electricity Coordinating Council’s (WECC’s) operating reserve margin is approximately 7% of peak demand.²⁸

On the other hand, for the year-ahead RA proceedings, the Commission has adopted a local capacity requirement based on a 1-in-10 annual peak load with CAISO recommended contingencies.²⁹ These CAISO contingencies are based on the reliability criteria established by the North American Electric Reliability Corporation (NERC) and WECC.³⁰ These standards require that transmission grids be capable of accommodating the outage of any one element on the grid without loss of load (N-1).³¹ CAISO’s LCR study imposes stricter criteria requiring the grid to be capable of accommodating the outage of one generator followed by the outage of a transmission element (G-1/N-1) without loss of load or alternatively, outage of a transmission element followed by the outage of another transmission element (N-1-1) without loss of load.³²

²⁴ See CPUC and CEC Final Opinion on Greenhouse Gas Regulatory Strategies, in R.06-04-009, at p. 34.

²⁵ See *id.* at p. 39.

²⁶ See D.04-12-048 at p. 30, 53.

²⁷ *Id.* at p. 30; D.07-12-052 at pp. 28-29 (adopting this for the 2006 LTPP).

²⁸ D.03-12-062 at p. 8; see also CEJA Ex. 1 at p. 32.

²⁹ See D.06-06-064 at p. 23, 83.

³⁰ *Id.* at pp. 16-18 (describing contingencies); see also CEJA Ex. 7 (J. May Selected Sources) at p. 245.

³¹ D.06-06-064 at p. 20 (describing the NERC contingency B option); see also CEJA Ex. 7 (J. May Selected Sources) at p. 245.

³² See D.06-06-064 at pp. 16-18; CEJA Ex. 3 (J. May Opening Test.) at pp. 41-43; CEJA Ex. 7 (J. May Selected Sources) at p. 245.

CAISO can drop load for an N-1-1 contingency is a policy call; it is not part of CAISO's reliability criteria.³³

E. Environmental Justice Requirements

Commission precedent requires consideration of environmental justice issues in procurement. For example, in the 2006 LTPP, the Commission expressly stated that “the IOUs need to provide greater weight” to environmental justice considerations in the bid evaluation process.³⁴ The California Public Utilities Code also recognizes the interest of the State to improve economically-disadvantaged conditions for minorities, by increasing procurement of renewable energy. In particular, Section 8281 recognizes that procurement from minority-owned businesses “benefits the regulated public utilities and consumers of the state by encouraging the expansion of the number of suppliers for procurements, thereby encouraging competition among the suppliers and promoting economic efficiency in the process.” In fact, Section 8281 also states that the “long-term economic viability” of California “depends substantially” upon the ability to procure renewable energy and other resources from business owners from groups that have been economically disadvantaged.

The public goal of aiding disadvantaged communities is also reflected in California Public Utilities Code Section 399.13. Importantly, the Commission specifically has the right to act equitably by requiring a utility procurement process to give preference to projects that benefit disadvantaged communities:

In soliciting and procuring eligible renewable energy resources for California-based projects, each electrical corporation shall give preference to renewable energy projects that provide environmental and economic benefits to communities afflicted with poverty or high unemployment, or that suffer from high emission levels of toxic air contaminants, criteria air pollutants, and greenhouse gases.

³³ See CAISO Ex. 14 (2013-2015 Local Capacity Technical Analysis) at p. 32; CAISO Ex. 13 (NERC Transmission Planning Standards).

³⁴ D.07-12-052 at p. 157.

Thus, utilities should give preference to environmental justice communities when soliciting and procuring renewable energy projects.

DISCUSSION

II. CAISO's Determination of LCR Is Conservative and Does Not Analyze All Available Resources.

A. CAISO's Long-Term LCR and Once-Through Cooling (OTC) Generation Studies Are More Conservative Than Year-Ahead RA Requirements.

CAISO assumes a 1-in-10 temperature day with the two worst possible contingency events occurring simultaneously. Critically, the predicted contingency events that drive CAISO's recommendation for LCR resources in the LA Basin have *never* occurred in the last ten years.³⁵ After identifying these transmission contingencies, CAISO failed to evaluate potential operational and transmission solutions that could lower procurement requirements. Instead, CAISO relies on "installed generation capacity rather than transmission operation solutions to address identified capacity deficiencies."³⁶ The Commission should reject CAISO's attempt to increase the reserve requirements for long-term procurement above the levels required in previous LTPPs and the more stringent year-ahead RA proceeding for events unlikely to occur.

1. *CAISO's Reliance on a 1-in-10 Year with Two Contingencies Is More Conservative than the Commission's RA Reserve Requirement and Is Not Required by NERC and WECC Standards.*

The Commission has previously examined what level of reserves should be procured in a local area for the *year-ahead* based on a CAISO LCR transmission analysis.³⁷ To date, CAISO has *never* before performed a ten-year LCR analysis like the one presented here.³⁸ Yet, CAISO tries to incorporate more conservatism in its analysis than it does in the year-ahead RA LCR analysis.

³⁵ Tr. 120:7-28 (Sparks, CAISO).

³⁶ D.06-06-064 at pp. 16-17 (describing the most conservative option for evaluating RA needs).

³⁷ See, e.g., D.12-06-025 at p. 7 (continuing to apply CAISO's Option 2 contingency in LCR analysis).

³⁸ Tr. 117:21-24 (Sparks, CAISO).

CAISO, in its role as a balancing authority and a grid operator, conducts transmission planning pursuant to NERC and WECC standards.³⁹ In the 2006 RA proceeding, CAISO provided the Commission with three options that were all compliant with NERC and WECC *year-ahead* reserve requirements.⁴⁰ First, the Commission could “Meet Performance Criteria B,” which requires enough reserves on the system for one contingency event, or an N-1.⁴¹ Second, the Commission could meet “Performance Criteria Category C and Incorporate Suitable Operational Solutions,” which requires reserves to meet two contingencies (N-2) after reflecting available transmission operational solutions.⁴² As the Commission noted: “[b]y reflecting transmission operational solutions, this option allows for a lower generation requirement.”⁴³ These operational solutions include transmission upgrades, reevaluation of line ratings, DR, and load shedding options.⁴⁴ Third, the Commission could “Meet Procurement Performance Criteria Category C Through Pure Procurement,” which requires reserves to meet two contingencies and does not include transmission operational solutions to address identified capacity deficiencies.⁴⁵ In its evaluation of these options, the Commission noted:

Selecting one of these three reliability options invokes the Commission’s policy of balancing reliability objectives against the cost of achieving a particular reliability level. We would prefer to have better quantitative information at our disposal regarding the probabilities of operational events as well as information regarding the ratepayer and societal costs of service interruptions. Moreover, we expect that progress can and should be made towards producing such information for future LCR studies.⁴⁶

³⁹ See, e.g., CAISO Ex. 14 (2013-2015 Local Capacity Technical Analysis) at pp. 8-11.

⁴⁰ The Commission decision in the 2006 RA proceeding was D.06-06-064. CAISO’s witness confirmed the importance of this decision stating that the year-ahead “LCR criteria was approved by the Commission in D.06-06-064.” Tr. 248: 4-5 (Sparks, CAISO).

⁴¹ D.06-06-064 at pp. 16-17.

⁴² *Id.* at p. 17.

⁴³ *Id.*

⁴⁴ *Id.* at p. 25.

⁴⁵ *Id.* at p. 17.

⁴⁶ *Id.* at p. 19.

The Commission ultimately adopted Option 2 with the caveat that “we do not find it reasonable to require LSEs to procure capacity that, according to LCR study, does not currently exist in an area.”⁴⁷

Here, in contrast, CAISO has not presented the Commission with *any* options of how to evaluate its ten-year LCR study.⁴⁸ As the RA decision confirms, CAISO can meet reliability criteria by only having reserves to meet one contingency scenario (Option 1). However, CAISO has not presented this analysis here.⁴⁹ If it had presented this analysis, the LCR need would have been dramatically reduced. For example, in the case of the Western LA Basin, which drives the LCR need for the LA Basin, the second contingency is Serrano-Villa Park No. 2.⁵⁰ This line, as shown by the power-flow numbers from CAISO’s analysis, can import at least 1,400 MW since it has a higher rating than Serrano-Villa Park No. 1, which is shown as importing over 1,400 MW.⁵¹ Thus, if CAISO had only assumed a single contingency, its LCR need determination for the LA Basin would have been reduced on the order of 1,400 MW. *This likely would have eliminated the 1,042 MW need identified in CAISO’s sensitivity study.*⁵²

CAISO also did not present an analysis for Option 2 under the year-ahead LCR criteria, which includes operational responses to contingencies. CAISO failed to consider transmission upgrades beyond what it had initially identified.⁵³ This is especially concerning given that

⁴⁷ *Id.* at p. 22.

⁴⁸ See Tr. 218:11-25 (Sparks, CAISO); see also Tr. 79:2-15 (Sparks, CAISO) (the OTC analysis that CAISO performed here is similar, but not the same, as the analysis it does in the RA proceeding).

⁴⁹ See Tr. 218:11-25 (Sparks, CAISO).

⁵⁰ CAISO Ex. 1 (R. Sparks Opening Test.) at pp. 7-10; Tr. 119:3-12 (Sparks, CAISO).

⁵¹ See CEJA X CAISO Ex. 1 (CAISO Data Request Responses) at p. 55; CAISO Ex. 9 (Addendum to Board Approved 2011/2012 Transmission Plan) at p. 3 (Serrano-Villa Park No. 2 “has a higher rating than its parallel Serrano-Villa Park #1 230 kV line.”).

⁵² See CAISO Ex. 9 at p. 6 (CAISO found a range of between 1,042 to 1,677 MW need for the LA Basin after considering EE and CHP). The 1,042 MW need figure is assuming the most effective locations. *Id.*

⁵³ See, e.g., Tr. 173:2-23 (Sparks, CAISO) (discussing transmission options that were not analyzed in the OTC study); see also *supra* at section D (discussion possible transmission solutions including increasing capacity of line that is the limiting contingency in the Western LA Basin).

CAISO has admitted that there are transmission options that could reduce the LCR need.⁵⁴

CAISO also failed to evaluate and include DR, load shedding, and other potential transmission operational responses that could lower the LCR it calculated.⁵⁵ Due to its failure to consider these operational solutions, CAISO only presented Option 3 to the Commission in this proceeding. This overly conservative option has been rejected by the Commission even on the year-ahead basis.⁵⁶ CAISO's attempt to require the Commission to meet Option 3 on a ten-year lookout is unprecedented, unnecessary, and should be rejected.

Even if CAISO had presented the Commission with options, the Commission does not need to apply the more stringent year-ahead grid criteria to its long-term planning requirements. The NERC and WECC operating requirements at issue in the RA context do not apply in the ten year context.⁵⁷

2. CAISO Relies On Contingency Events that Are Unlikely to Ever Occur.

In its analysis, CAISO is relying on two contingency events in the Western LA Basin that have never occurred in the last ten years,⁵⁸ making the probability of the contingency events occurring on the order of less than a minute in a ten-year period.⁵⁹ (Similarly, in a parallel issue in A.11-05-023, CEJA's expert calculated the probability of CAISO's and SDG&E's forecasted contingencies to be less than a minute in a ten-year period.)⁶⁰ CAISO, however, did not analyze the likelihood of the specific contingency events occurring in the LA Basin before recommending that the Commission authorize costly procurement.⁶¹

⁵⁴ See *infra* at pp. 27-31 (discussing transmission upgrades).

⁵⁵ See *e.g.*, D.06-06-064.

⁵⁶ *Id.* at p. 20 (rejecting Option 3 on the year-ahead basis finding "little justification for its adoption.").

⁵⁷ See *id.* at pp. 16-17 (discussing requirements); Tr. 376:1-22 (Millar, CAISO) ("I don't believe the 10-year lookout is established as a specific criteria.").

⁵⁸ See Tr. 120:2-28 (Sparks, CAISO).

⁵⁹ CEJA-3 (J. May Opening Test.) at pp. 38-39.

⁶⁰ *Id.*

⁶¹ Tr. 126:26-127:2 (Sparks, CAISO) (admitting that CAISO "did not ask Edison for their outage rates on these particular lines.").

In addition to the contingency events being highly improbable, adding significant resources onto the system is not likely to prevent outages from happening. Events impacting the local distribution system, not large events on the bulk power system, are the cause of the majority of power interruptions.⁶² “These local distribution failures (mainly caused by weather, downed trees, etc.) were not the subject of the reliability assessment which formed CAISO’s LCR needs determination.”⁶³ Even CAISO agrees that examining probability can be useful when determining the appropriate mitigation.⁶⁴ There are less costly ways to mitigate any perceived need that should be examined before costly resources are procured. For example, rather than relying on the procurement of billions of dollars of new resources, CAISO could consider using load shed if this unlikely scenario ever occurred.⁶⁵ It could also evaluate different transmission mitigation options to reduce need.⁶⁶ These options need to be fully examined given the extremely low probability that the contingencies that CAISO relies on will ever occur.

3. The Commission Should Evaluate Single Contingency and Load & Resource Analyses.

The Commission should not adopt CAISO’s extreme scenario as the basis for long-term procurement when there is so much uncertainty in the assumptions. As the Commission has noted, it is responsible for “determining what level of reliability and economic enhancements are appropriate.”⁶⁷

⁶² As a report by Lawrence Berkeley National Laboratory found: “An initial assessment of these [outage] events supports the conventional wisdom that the majority of power interruptions experienced by customers are not due to large events that affect the bulk power system; they are due to more localized events that affect only utility distribution systems.” CEJA Ex. 6 (Attachments to J. May Reply Test.), Attach. H at p. xiii; *see also* CEJA Ex. 5 (J. May Reply Test.) at pp. 9-10 (discussing report).

⁶³ *See* CEJA Ex. 5 (J. May Reply Test.) at p. 10.

⁶⁴ *See* Tr. 406:24-407:2 (Millar, CAISO).

⁶⁵ *See* Tr. 123:22-25 (Sparks, CAISO) (CAISO does consider load shed for some double contingency scenarios).

⁶⁶ *See, e.g.*, Tr. 173:5-23 (Sparks, CAISO) (CAISO is currently looking at additional mitigation options in the next transmission planning cycle that were not looked at here).

⁶⁷ D.06-06-064 at p. 26, n. 9; *see also* Tr. 272:11-273:16 (Sparks, CAISO) (stating that the decision of how much procurement to authorize in this proceeding “is a higher degree of a policy question than a technical question.”).

In previous LTPPs, the Commission has rejected utilities attempts to make the reserve requirements more conservative by adding additional contingency reserves.⁶⁸ In doing so, the Commission has opted for relying on a load and resource table with a set reserve margin.⁶⁹ The Commission has previously found its 15-17% reserve margin for a 1-in-2 year already includes adjustments for forced outages or contingencies.⁷⁰ That type of analysis is highly informative especially when examining a long-term timeframe. CAISO's detailed transmission analysis relies on certain contingencies that could drastically change if new standards are adopted or if transmission mitigations measures occur.⁷¹ As CAISO's witness admitted: the "precise scenario is not likely to come to pass exactly as it's in the model."⁷² For example, a 600 MW transfer on SCE's distribution system can reduce LCR need by thousands of MW.⁷³ In addition, the change in the characterization of an outage in the SDG&E area resulted in an over 200 MW difference in the LCR need that CAISO calculated.⁷⁴ Thus, the granularity of CAISO's analysis is not an appropriate tool to base expensive long-term procurement on.

Importantly, even if CAISO's long-term analysis was an appropriate method to determine procurement authority, the Commission should only authorize what is necessary to meet reliability standards. The Commission has previously recognized the need to determine "an appropriate level of procurement necessary to enable the CAISO to operate the system in compliance with *minimum* operating standards."⁷⁵ NERC and WECC standards do not require

⁶⁸ See, e.g., D.07-12-052 at pp. 94, 96-98 (rejecting utility requests for more contingency procurement).

⁶⁹ See *id.* at p. 20 (describing general approach to need determination); *id.* at p. -90 (describing planning reserve margin requirements).

⁷⁰ See D.06-07-031 at p. 40 (FOF 2); D.04-10-035 at p. 22.

⁷¹ See Tr. 79:16-22 (Sparks, CAISO) (admitting that for the "ten-year frame there's more uncertainty on many factors.").

⁷² Tr. 269:24-270:1 (Sparks, CAISO).

⁷³ See Tr. 82:17-85:4 (Sparks, CAISO).

⁷⁴ CAISO Ex. 8 (R. Spark's April SDG&E 2012 Test.).

⁷⁵ See D.07-12-052 at p. 93 (emphasis added). Notably, CAISO's witness stated that the WECC operating reserve requirements.

CAISO to hold certain reserves on a long-term basis,⁷⁶ and these standards only require reserves necessary to protect against a single contingency scenario.⁷⁷ In addition, it is not clear that NERC and WECC also require that the single contingency occur on the hottest day in ten years.⁷⁸ Here, if the Commission examines a single (rather than a double) contingency scenario for the LA Basin, the need will be approximately 1,400 MW lower than the double contingency calculation.⁷⁹ This lower value is all that is actually needed to meet NERC and WECC requirements on the near-term basis, and is all that should be required here.

B. The Commission Should Include Consideration of Preferred Resources, Including Uncommitted Energy Efficiency, Demand Response, Combined Heat and Power, and Distributed Generation, In Determining Future LCR Needs.

1. CAISO's Assumption of Zero MW of Uncommitted Energy Efficiency is Unreasonable and Fails to Account for a Multitude of Energy Efficiency Programs and Goals.

CAISO unreasonably failed to include any uncommitted EE in its modeling.⁸⁰ CAISO only includes an estimate for uncommitted EE in its sensitivity study.⁸¹ CAISO's assumption of no uncommitted EE ignores numerous state laws, programs, and goals aimed at reducing energy consumption through a host of efficiency measures.

EE is California's top priority for an energy resource. California has many aggressive EE policies, including the loading order, AB 32, and the Energy Efficiency Strategic Plan, that support the inclusion of uncommitted EE.⁸² The loading order requires utilities to prioritize energy efficiency and it applies even if pre-set targets have been met.⁸³ AB 32 also supports

⁷⁶ See Tr. 376:1-22 (Millar, CAISO) ("I don't believe the 10-year lookout is established as a specific criteria.").

⁷⁷ See D.06-06-064 at pp. 16-17 (discussing requirements); see also CAISO Ex. 13 (NERC Transmission Planning Standards) (NERC standards allow for load drop for Category C outages).

⁷⁸ See CAISO Ex. 13 (NERC Transmission Planning Standards) (not requiring coverage of conditions on a ten-year ahead basis).

⁷⁹ See *supra* at p. 10.

⁸⁰ See CAISO Ex. 9 (Addendum Study); CEJA X CAISO Ex. 1 (describing the EE included in the study).

⁸¹ *Id.*

⁸² See CEJA Ex. 3 (J. May Opening Test.) at p. 8.

⁸³ D.12-01-033 at p. 20; see *supra* at p. 4 (describing loading order).

including uncommitted EE.⁸⁴ To reach AB 32’s goal, CARB’s AB 32 Scoping Plan details several key EE actions and has estimated that a significant portion of GHG reductions will need to come from EE measures.⁸⁵ A decision from the Commission and the CEC also found that increasing EE is imperative in reducing GHG emissions in the energy sector.⁸⁶ In addition, the Commission’s Energy Efficiency Strategic Plan targets a 50 percent improvement in efficiency of heating, ventilating, and air conditioning systems by 2020, and a 75 percent improvement by 2030.⁸⁷ To meet this goal, AB 758 directed development of a program to reduce energy usage in buildings, and Executive Order B-18-12 calls for half of California state government commercial buildings to reach zero net energy by 2025.⁸⁸

In addition to policies prioritizing and mandating energy efficiency measures, reductions can also be expected through the replacement of older, inefficient air conditioning systems. Currently, 90 percent of cooling systems are old technology with operational lifetimes of 10 to 14 years.⁸⁹ Since commercial and institutional cooling systems consume over 30 percent of California’s total peak demand, EE programs that encourage replacement of old technology with newer, more energy efficient technology will reduce total demand.⁹⁰

Although CAISO has admitted that EE programs can “be reliably forecast and included in demand forecasts on a timely basis,” and that EE “provide[s] the energy savings necessary to offset other forms of generation in both the local area and on a system basis,”⁹¹ it has assumed

⁸⁴ California Assembly Bill 32, the Global Warming Solutions Act of 2006, Chapter 488, 2006 (Nunez).

⁸⁵ CEJA Ex. 7 (J. May Selected Sources) at p. 41-43 (AB 32 Scoping Plan) The Commission and the CEC estimated the magnitude as: “ARB’s Climate Change Draft Scoping Plan envisions that the electricity sector will contribute at least 40% of the total statewide GHG reductions, even though the sector currently creates just 25% of California’s GHG emissions.” See CPUC and CEC Final Opinion on Greenhouse Gas Regulatory Strategies, R.06-04-009 at p. 2, available at <http://www.energy.ca.gov/2008publications/CEC-100-2008-007/CEC-100-2008-007-F.PDF>.

⁸⁶ See *id.* at p. 34.

⁸⁷ See CEJA Ex. 1 (B. Powers Test.) at p. 3, 6.

⁸⁸ Cal. Assemb. Bill AB 758 (2009, Skinner); California Executive Order B-18-12; CEJA Ex. 1 at p. 9.

⁸⁹ See CEJA Ex. 1 (B. Powers Test.) at p. 8.

⁹⁰ *Id.* at p. 7.

⁹¹ CAISO Ex. 6 (N. Millar Reply Test.) at p. 12.

that none of the uncommitted EE will materialize. To support its assumption of no uncommitted EE, CAISO claims to have followed the CEC's policy to exclude uncommitted EE in its analysis.⁹² A closer look at the CEC's statements demonstrates that CAISO has misread the CEC's policy. The CEC has stated that "conservation reasonably expected to occur includes *both* committed and uncommitted programs, [even though] only the effects of committed programs are included in the demand forecast."⁹³ The CEC further stated that "demand forecasts [should] seek to account for all conservation that is reasonably expected to occur."⁹⁴ Given that the CEC believes both uncommitted and committed are "reasonably expected to occur," both should be counted. Finally, while SCE supports the use of CAISO's modeling in this proceeding,⁹⁵ SCE has no basis for this finding, as it has not conducted any of its own analysis or provided its own estimate.⁹⁶

If EE is not considered, consumers will bear the cost of procuring unnecessary energy. SCE proposes that LCR procurement costs be allocated to all Commission customers because the customers will be benefiting from increased flexible capacity.⁹⁷ As a result, CAISO's EE assumption of zero MW uncommitted EE is unreasonable.⁹⁸ If the omitted amounts of energy efficiency and other preferred resources were included, the OTC generation needs will show a surplus instead of a deficiency.⁹⁹ Therefore, as described further below, the Commission should rely on the estimate of uncommitted EE that it and the CEC gave to CAISO for inclusion into the 2011/2012 Transmission Plan.

⁹² Tr. 394:23 – 395:19 (Millar, CAISO).

⁹³ CEJA X SCE Ex. 2 (California Energy Demand 2010 – 2020 Adopted Forecast)(emphasis added).

⁹⁴ *Id.*

⁹⁵ See SCE Ex. 1 (SCE Opening Test.) at pp. 3-4.

⁹⁶ Tr. 936: 16-22 (Minick, SCE) (SCE has not conducted its own LCR analysis); CEJA-X-SCE-1 (Data Request Responses) at p. 1-4 (SCE has not conducted its own LCR analysis and does not have its own preferred resource assumptions).

⁹⁷ SCE Ex. 1 (Opening Test.) at p. 26.

⁹⁸ See CEJA Ex. 3 (J. May Opening Test.) at pp. 7-13.

⁹⁹ See e.g., CEJA Ex. 3 at pp. 1-2 (showing results would likely be zero with preferred resources); see also DRA Ex. 6 (R. Fagan Reply Test) at p. 8 (showing calculation for Western LA Basin).

2. ***CAISO's Failure to Include Demand Response is Unreasonable.***

DR is hailed as one of the most important and necessary advancements in meeting California's current and future energy needs.¹⁰⁰ Despite the well-established importance of DR, Federal Energy Regulatory Commission (FERC) requirements to facilitate reliance of DR onto the grid, and the Commission's commitment to fulfilling the loading order, CAISO did not include *any* MW from DR in its LCR analysis.¹⁰¹ This is despite that the 1-in-10, double contingency scenario modeled by CAISO is exactly the type of situation DR works to address.

CAISO's failure to include any DR programs in its LCR analysis is inconsistent with state and national policies to increase DR by 2021. For instance, DR is a preferred resource under the loading order.¹⁰² "The loading order identifies energy efficiency and demand response as the State's preferred means of meeting growing energy needs."¹⁰³ The Public Utilities Code further requires that utilities "first meet unmet resource needs through all available...demand reduction resources."¹⁰⁴ To assure consistency with these requirements, the Commission has reiterated that "EE and DR are considered the highest priority and should be employed first by a utility in making procurement decisions."¹⁰⁵ The Commission also recently approved SCE's budget of over \$196 million to develop and administer DR programs in its territory.¹⁰⁶ With this increase in budget, in addition to implementing DR pilot programs and conducting research and development, SCE will continue many of its existing DR programs.¹⁰⁷ SCE proposes increasing its existing Save Power Day DR program by automatically enrolling residential customers once

¹⁰⁰ See D.07-12-052 at pp. 54-55.

¹⁰¹ CEJA Ex. 3 (J. May Opening Test.) at p. 18 (quoting CAISO Data Request Response).

¹⁰² See Cal. Pub. Util. Code § 454.5.

¹⁰³ CEJA Ex. 7 (J. May Selected Sources) at p. 54 (Energy Action Plan II).

¹⁰⁴ Cal. Pub. Util. Code § 454.5(b)(9)(C).

¹⁰⁵ D.07-12-052 at p. 12.

¹⁰⁶ D.12-04-045 at p. 196.

¹⁰⁷ *Id.* at pp. 115-116 (discussing SCE's proposed programs); *see id.* at p. 120-21 (approving the majority of programs).

they receive a smart meter.¹⁰⁸ The approval of SCE’s budget indicates that DR will continue to increase over time, which demonstrates that CAISO’s failure to inventory DR as an available resource to address LCR need is unreasonable.

In addition, FERC now requires system operators to increase competition by “providing more supply options,”¹⁰⁹ and requiring system operators to compensate DR service providers for MW reductions.¹¹⁰ In a recent order, FERC required system operators to remove several barriers to DR in organized electrical markets; first by requiring regional transmission operators and ISOs to “accept bids from [DR] resources ... on a basis comparable to other resources,” and to eliminate charges to buyers who take less energy than was purchased in the day-ahead markets during system emergencies.¹¹¹ FERC also requires system operators to provide uniform compensation to DR resource providers.¹¹² The intent is that by empowering customers and aggregators to participate more directly in DR, this resource will be more widely used to balance the grid.¹¹³ The order incentivizes energy producers to offer DR by requiring ISOs to compensate DR service providers for the amount of MW saved, thereby ensuring that “rates are just and reasonable.”¹¹⁴ Together, these two orders support assuming that increase levels of DR will be available in 2021.

The Commission, SCE, and CAISO, have all forecasted load reductions from DR in the short term in SCE’s territory. SCE currently reports load reductions from the 14 DR programs it currently operates.¹¹⁵ In its application for approval of its Smart Grid Deployment plan, SCE

¹⁰⁸ *Id.* at pp. 118-120.

¹⁰⁹ 18 CFR 35; FERC Order No. 719 at p. 1 (October 17, 2008) *available at* <http://www.ferc.gov/legal/maj-ord-reg.asp>

¹¹⁰ 18 CFR 35; FERC Order No. 745 at p. 2 ¶ 17 (March 15, 2011) *available at* <http://www.ferc.gov/legal/maj-ord-reg.asp>

¹¹¹ 18 CFR 35; FERC Order No. 719 at pp. 2-3.

¹¹² FERC Order No. 745 at pp. 2-6.

¹¹³ FERC Order No. 745 at pp. 2-3, ¶ 9.

¹¹⁴ *Id.* at pp. 2-3.

¹¹⁵ CEJA X SCE Ex. 3.

estimates “1,900 MW of demand response program enrollment by 2014” and “1,000 MW of AMI-enabled demand reduction by 2017.”¹¹⁶ In its 2012 *Summer Loads and Resources Assessment*, CAISO projected “[a]n estimated 2,296 MW of demand response and interruptible load programs will be available to deploy for summer 2012.”¹¹⁷ Lastly, the Commission estimated that 2,842 MW of DR resources would be available in the SCE territory by 2020 in its 2010 LTPP Scoping Memo.¹¹⁸ CAISO’s failure to include DR is unreasonable in light of these forecasts.

CAISO similarly ignores reports of actual load reduction from past and currently available DR. For instance, in 2009, SCE reported a load reduction of 1,523.6 MW from DR.¹¹⁹ Furthermore, SCE’s expert witness produced an analysis of SCE’s “recorded information on the participation of demand response by substation” for the Western LA Basin.¹²⁰ This analysis shows 549.43 MW of load reduction from DR.¹²¹ This figure reflects only three of the many DR programs SCE currently administers.¹²² SCE’s witness also stated that it was likely that these three DR programs would be in existence in 2020.¹²³

In addition to reporting current DR load reductions, SCE predicted that additional smart meter installations will enable it to increase and improve dispatchable DR programs in the future.¹²⁴ This prediction is supported by SCE’s recently approved DR budget, which includes

¹¹⁶ CEJA Ex. 1 (B. Powers Test.) at p. 12 (citing SCE Smart Grid Deployment Plan).

¹¹⁷ CEJA Ex. 3 (J. May Opening Test.) at p. 21; CEJA Ex. 7 (J. May Selected Sources) at p. 88 (CAISO Briefing, Summer Loads and Resources Assessment).

¹¹⁸ CEJA Ex. 1 (B. Powers Test.) at p. 11; *see also* CPUC R.10-05-006, Appendix 1 at p. 60.

¹¹⁹ D.09-08-027 at p. 29.

¹²⁰ Tr. 1079:12-18 (Silsbee, SCE); CEJA X SCE Ex. 3.

¹²¹ CEJA X SCE Ex. 3.

¹²² Tr. 1083:17-28 (Silsbee, SCE); CEJA X SCE Ex. 3.

¹²³ Tr. 1084:4-8 (Silsbee, SCE).

¹²⁴ Tr. 1068:4-27 (Silsbee, SCE) (AMI “will bring with it improvements in our ability to operate some of the programs. So there were additional amounts of demand response forecast that would be enabled by this so-called smart metering.”).

the expansion of price-responsive DR programs.¹²⁵ SCE has also admitted in this proceeding that “slower load growth, including...DR, may lessen the need for the amount LCR generation proposed by CAISO.”¹²⁶

It is unreasonable for CAISO to not include DR in assessing LCR need because expanded DR should be considered a basic assumption for all scenarios beyond 2020. Excluding DR is inconsistent with increasing DR availability and state policy. Therefore, CEJA urges the Commission to consider the importance and availability of DR in evaluating LCR need.

3. CAISO’s Failure to Consider Incremental CHP is Unreasonable.

CAISO assumes that no incremental CHP will be developed in SCE’s territory prior to 2021.¹²⁷ This assumption ignores existing CHP programs and is inconsistent with CHP forecasts. For instance, the Governor’s Clean Energy Jobs plan calls for an additional 6,500 MW of CHP in the State by 2030,¹²⁸ and the AB 32 Scoping Plan sets a goal of 4,000 MW of new CHP by 2020.¹²⁹ These figures comport with the economic potential for CHP, which has been identified as 6,500 MW by 2030.¹³⁰

The 2010 Qualifying Facility and Combined Heat and Power Program Settlement Agreement (CHP Settlement), entered into by SCE and numerous other parties, “encourage[s] the continued operation of the state’s existing CHP facilities, and the development, installation, and interconnection of new, clean and efficient CHP Facilities.”¹³¹ In pursuit of this goal, the CHP settlement also sets binding MW targets that SCE must meet.¹³² In total, SCE must procure

¹²⁵ D. 12-04-045 at pp. 115-118 (SCE project proposals); *see id.* at pp. 120-121 (approving majority of DR proposals).

¹²⁶ CEJA X SCE Ex. 1(SCE Data Request Response to CEJA) at pp. 15-16.

¹²⁷ Tr. 129: 19-27 (Sparks, CAISO) (incremental CHP was not considered); *see also* CEJA Ex. 4 (CAISO Data Request Responses) at pp. 5-6.

¹²⁸ CEJA Ex. 1 (B. Powers Test.) at p. 3.

¹²⁹ *Id.* at p. 26.

¹³⁰ *Id.* at p. 26.

¹³¹ D.10-12-035 at p. 37.

¹³² *Id.*, Attachment A (Settlement Agreement Term Sheet) at p. 8.

1,402 MW of CHP by the end of 2020.¹³³ Even if a utility breached its settlement obligations in procuring new CHP, CHP representatives can file for reinstatement of Public Utility Regulatory Policy Act (PURPA) purchase obligations with FERC.¹³⁴ Pursuant to the settlement, SCE launched its first RFO for CHP facilities.¹³⁵ SCE has already begun to submit Advice Letters to the Commission as a result of its RFO for many MW of new CHP.¹³⁶

In addition to pursuing the MW target under the CHP Settlement, SCE is also required to participate in the CHP Feed in Tariff (FIT) under AB 1613.¹³⁷ Under the AB 1613 FIT, the utilities are required to purchase excess electricity from eligible CHP systems.¹³⁸ One of the first new CHP projects to be developed under AB 1613 will likely be sited in the Big Creek/Ventura local area.¹³⁹ CHP is also a qualifying facility under the Self-Generation Incentive Program (SGIP) program.¹⁴⁰

CAISO's exclusion of uncommitted CHP is based on the purported "level of uncertainty" surrounding CHP development as noted in the 2009 and 2011 IEPR.¹⁴¹ However, as the California Cogeneration Council (CCC) points out, these documents were being prepared prior to the finalization of the CHP settlement, which as discussed above, sets specific CHP goals for SCE to fulfill.¹⁴² These documents were also prepared while the utilities were litigating before the Commission and FERC regarding pricing projects under AB 1613.¹⁴³ Thus much of the

¹³³ *Id.*, Attachment A (Settlement Agreement Term Sheet) at p. 27.

¹³⁴ *Id.* at pp. 23-24.

¹³⁵ CEJA Ex. 1 at p. 27 (citing Southern California Edison, *Renewable & Alternative Power – Combined Heat and Power (CHP): Combined Heat and Power Facilities Request for Offers* (Dec. 15, 2011) <http://www.sce.com/EnergyProcurement/renewables/chp.htm>); *see also* CCC Ex.1 (T. Beach Opening Test.) at p. 6.

¹³⁶ *See e.g.*, Advice Letter-2772-E (Aug. 31, 2012), *available at* <http://www.sce.com/NR/sc3/tm2/pdf/2772-E.pdf> (seeking Commission approval for 80 MW new CHP facility); ; Advice Letter 2770-E (Aug. 31, 2012) *available at* <http://www.sce.com/NR/sc3/tm2/pdf/2770-E.pdf> (seeking Commission approval for a new 39.2 MW CHP facility).

¹³⁷ *See* Cal. Pub. Util. Code, § 2841(b)(1).

¹³⁸ D.09-12-042 at p. 2.

¹³⁹ CCC Ex. 1 (T. Beach Opening Test.) at pp. 6, 11.

¹⁴⁰ D.11-09-015 at p. 2; *see also* D.11-12-030 at p. 1 (adopting an annual budget of \$83 million for the SGIP).

¹⁴¹ CAISO Ex. 2 (R. Sparks Supplemental Testimony), at p. 6.

¹⁴² CCC Ex. 1 at pp. 5-6.

¹⁴³ *Id.* at p. 6.

“uncertainty” regarding CHP development has been alleviated, and CAISO could have relied on figures from the CHP settlement, among other programs and forecasts, in calculating uncommitted CHP.

The Commission has rejected use of a zero MW incremental CHP assumption in the past. In the 2010 LTPP decision, SCE sought to use as its MW target under the initial program period of the CHP settlement for its CHP assumption, but an assumption of zero MW for the years 2015-2020.¹⁴⁴ The Commission rejected this zero MW assumption, finding that:

CHP comes before conventional fossil generation in the loading order, so SCE’s forecast of zero CHP would be credible only if SCE is also forecasting to procure zero conventional fossil generation. . . . Second, there will continue to be a mandatory Public Utilities Regulatory Policies Act program for CHP facilities less than 20 MW that may execute contracts after 2015. And third, while there is uncertainty about how much CHP SCE or the other utilities may need to procure in order to satisfy the utility-specific GHG reduction targets in the QF/CHP Settlement, it is far from clear that the utilities will have achieved all of their required GHG reductions from CHP in the Initial Program Period.¹⁴⁵

Other parties to the proceeding have formulated more reasonable CHP assumptions. For instance, DRA found between 347 MW to 1,468 MW for new CHP in SCE’s region in 2020.¹⁴⁶ Using this CHP assumption, among other preferred resource assumptions left out of CAISO’s modeling, DRA found a surplus of resources in SCE’s local area in 2020 and beyond.¹⁴⁷ The Commission staff has proposed to use a report by ICF, which forecasts approximately 3,000 MW of new CHP as the medium case,¹⁴⁸ as the basis for the CHP planning assumptions in Track II of this proceeding.¹⁴⁹

¹⁴⁴ D.12-01-033 at p. 32.

¹⁴⁵ *Id.* at pp. 32-33.

¹⁴⁶ DRA Ex. -4 (Lasko Test.) at p. 7, Figure 5.

¹⁴⁷ *See* DRA-Ex. 1 (Fagan Test.) at p. 18, Table RF-2 (finding a surplus in SCE’s local area when the SCE Base case is used for CHP).

¹⁴⁸ CCC Ex. 1 (T. Beach Opening Test.) at p. 8 (citing ICF Report, at Table ES-2).

¹⁴⁹ *Id.* at p. 8.

CAISO’s assumption that no new CHP will come online also ignores the important role CHP will play in California’s GHG reduction strategies and energy diversity goals.¹⁵⁰ The Commission has previously recognized CHP development as an important emissions reduction strategy.¹⁵¹ The CHP settlement also “establishes a GHG Emissions Reduction Target . . . of 4.3 million-metric tons (MMT) for the IOUs.”¹⁵² “These targets are based on the 6.7 MMT GHG reductions attributable to CHP in the CARB Scoping Plan.”¹⁵³ Given the MW targets under the CHP settlement, as well as other CHP programs and the recent ICF forecast, incremental CHP should have been included in CAISO’s modeling. A reasonable assumption would have been at least to use the MW targets established in the CHP Settlement.¹⁵⁴

4. CAISO Failed to Consider All Available Distributed Generation.

California has made renewable energy procurement a priority and a key component of our GHG reduction strategy. Governor Jerry Brown has prioritized distributed generation (DG) with a goal of adding 12,000 MW to California’s energy supply.¹⁵⁵ The renewable energy values that CAISO relied on did not take these policies or other requirements into account.

The Governor’s *Clean Energy Jobs Plan*’s goal is to restore California as a leader in renewable energy and green technology while creating more jobs.¹⁵⁶ The plan aims to expand localized energy generation to 12,000 MW of DG statewide by 2020.¹⁵⁷ The California Energy Commission has developed regional targets to meet this goal, including a 4,000 MW target for LA County and 470 MW for Orange County.¹⁵⁸ The Commission recently expanded the 5% Net

¹⁵⁰ See e.g., Cal. Pub. Util. Code § 372(a) (supporting the development of efficient, environmental beneficial CHP); see also D.10-12-035 at p. 37 (Section 372(a) encourages and supports the development of CHP).

¹⁵¹ D.08-10-037 at p. 6.

¹⁵² D.10-12-035 at p. 17.

¹⁵³ *Id.* at p. 17.

¹⁵⁴ See *id.*, Attachment A (Settlement Agreement Term Sheet) at p. 27 (establishing a target of 1,402 MW for SCE in 2020).

¹⁵⁵ CEJA Ex. 2 (B. Powers Selected Sources) at p. 20 (Clean Energy Jobs Plan).

¹⁵⁶ *Id.* at p. 18 (Clean Energy Jobs Plan).

¹⁵⁷ *Id.*

¹⁵⁸ CAISO Ex. 12 at p. 88 (2011 Integrated Energy Policy Report).

Energy Metering cap, which is expected to significantly increase the amount of solar PV that is developed in California.¹⁵⁹ Solar PV is a cost-effective resource that has the potential to be a substitute for natural gas-fired peaking generation.¹⁶⁰

CAISO divided up its LCR study into four renewable portfolio scenarios: trajectory, environmentally-constrained, time-constrained, and ISO basecase. CAISO estimated that between 271-1,519 MW of DG would be available in the LA Basin.¹⁶¹ This is far less than LA County’s portion of the Clean Energy Jobs Plan goal of 4,000 MW, and the 5,000 MW potential described by the Los Angeles Business Council.¹⁶² The Governor’s plan divides out the goal of 12,000 MW of DG by county.¹⁶³ SCE’s LA Basin territory is made up of portions of LA and Orange Counties. Ms. May’s testimony conservatively only accounts for the portion of SCE’s territory in the LA Basin. The amount of DG that would be required in the LA Basin would be 3,854 MW.¹⁶⁴ These numbers are represented in the table below:

Replacement Need and DG Estimates for LA Basin (in MW)				
	Trajectory	Environmentally Constrained	ISO Base	Time Constrained
CAISO’s Projections by Scenario	2,370-3,741	1,870-2,884	2,424-3,834	2,460-3,896
CAISO’s DG Estimates	339	1,519	271	687
CEJA DG Calculation additions needed ¹⁶⁵	3,515	2,335	3,583	3,167

CAISO has admitted that increasing the amount of DG generally reduces LCR need.¹⁶⁶

¹⁵⁹ D-12-05-036.

¹⁶¹ CAISO Ex. 1 (R. Sparks Test.) at pp. 7-9.

¹⁶² See CEJA Ex. 2 (B. Powers Selected Sources) at p. 88 (2011 Integrated Energy Policy Report); CEJA Ex. 1 (B. Powers Test.) at pp. 23-24.

¹⁶³ CAISO Ex. 12 at p. 88 (2011 Integrated Energy Policy Report).

¹⁶⁴ CEJA Ex. 3 (J. May Opening Test.) at p. 28.

¹⁶⁵ *Id.* at p. 29 (Ms. May subtracts CAISO’s DG estimates from the Governor’s numbers to reach this conclusion.)

¹⁶⁶ Tr. 405: 21-24 (Millar, CAISO).

The additional DG should have been taken into account as reducing LCR needs since the LA Basin is the ideal location for widespread use of solar energy due to transmission and permitting constraints. Photovoltaic arrays are placed on rooftops and the resulting power feeds into local generation.¹⁶⁷ Generally, urban DG development should be limited to sizes up to 500 kw. PV has an availability rate of 96% during peak times, due to high solar penetration.¹⁶⁸ This is comparable to natural gas-fired peaking turbines, which generally have an availability rate of 92-98%.¹⁶⁹ The distributive nature of PV also increases the reliability of the entire grid because the source of energy is spread among several sources instead of one power plant.¹⁷⁰ The city of Los Angeles has about 5,536 MW of PV potential, with the potential for LA County at 19,113 MW.¹⁷¹ Recent decisions by the Commission, like the interpretation of the NEM requirement,¹⁷² and various targets set by state laws and agency regulations are likely to increase these estimates. Thus, the Commission should reasonably include the values of DG set forth in the 2011 IEPR.

C. The Commission Needs to Consider Appropriate OTC Retirement Assumptions.

CAISO's modeling is largely based around the need to replace units in SCE's territory that use once through cooling (OTC) pursuant to California's State's Water Quality Control Policy on the Use of Coastal and Estuarine Waters for Power Plant Cooling (OTC policy).¹⁷³ The OTC policy however, does not require the retirement of every OTC unit. Instead, it allows currently existing OTC plants to continue operating should they comply with one of two tracks. Track I requires the implementation of an acceptable cooling technology, such as closed cycle

¹⁶⁷ CEJA Ex. 1 (B. Powers Test.) at p.20 (citing CPUC, *CPUC Approves Solar PV Program for PG&E*. (Apr. 22, 2010) (A-09-02-019)).

¹⁶⁸ *Id.* at pp. 22-23.

¹⁶⁹ *Id.* at p. 22 (based on similar projects in the Bay Area).

¹⁷⁰ *Id.* at p. 22.

¹⁷¹ *Id.* at p. 23 (citing Los Angeles Business Council, *Bringing Solar Energy to Los Angeles*).

¹⁷² D-12-05-036.

¹⁷³ CEJA Ex. 1 at p. 27.

dry cooling.¹⁷⁴ Track II allows the facility to continue operating after implementing mitigation measures to reduce impacts on marine life.¹⁷⁵

CAISO however, assumed that all natural gas OTC generation in SCE's territory will be retired by 2020.¹⁷⁶ While CAISO assumes two repowering projects will be implemented to replace OTC generation,¹⁷⁷ CAISO fails to take into account that OTC generators can choose to retrofit their facilities and continue operating under Track I or Track II. Even if some of these plants fail to implement these compliance measures and instead retire, it is highly unlikely that none of the existing units will continue to operate. For instance, the Morro Bay facility in SCE's territory intends to comply with Track II.¹⁷⁸ However, if mitigation is not feasible, Morro Bay also stated in its OTC compliance plan that it may repower 164 MW under Track I.¹⁷⁹

It is also not clear that retiring OTC units need to be replaced by the same amount of MW.¹⁸⁰ Many existing OTC facilities are currently running far below capacity; in 2007, most units ran less than 10 percent of the time.¹⁸¹ A State Water Resources Control Board report found that "several OTC facilities could retire by 2015 with no need for additional replacement capacity."¹⁸² The report further found that a more than adequate reserve margin would still exist "with as little as \$135 million in in-state transmission upgrades."¹⁸³

¹⁷⁴ *Id.* at p. 27; DRA-2 (D. Siao Test.) at p. 3.

¹⁷⁵ CEJA Ex. 1 (B. Powers Test.) at p. 27; *see also* DRA-2 at p. 3.

¹⁷⁶ *See* CEJA-X-SCE-1 (Data Request Responses) at pp. 31, 34 (CAISO's assumes that all OTC plants in the LCR area retire).

¹⁷⁷ *See* DRA Ex.1, Attachment E at pp. 272-73 (listing the new conventional generation resources that CAISO modeled in the power flow base case).

¹⁷⁸ DRA Ex. 2 (D. Siao Test.) at p. 8, Table 1.

¹⁷⁹ *Id.* at Attachment C, p. 1.

¹⁸⁰ CEJA Ex. 1 at pp. 29-30.

¹⁸¹ *Id.* at pp. 29-30, (*citing* CEC, *Comments to State Water Resources Control Board Concerning Its Coastal Power Plant Preliminary Draft Policy and Related Scoping Document* (May 2008) at pp. 18-19).

¹⁸² *Id.* at p. 30 (*citing* *Electric Grid Reliability Impacts from Regulation of Once-Through Cooling in California* (ICF Jones & Stokes, April 2008) at p. 3).

¹⁸³ CEJA Ex. 1 at p. 30.

Finally, multiple owners of OTC plants have also requested extensions of their OTC compliance deadlines.¹⁸⁴ For instance, AES Southland, the owner of over 4,000 MW of OTC units has asked the State Water Board for deadline extensions for two of its plants to 2024 and to 2022, respectively.¹⁸⁵ A 2012 Statewide Advisory Committee on Cooling Water Intake Structures (SACCWIS) report recommended considering these requests and updating the OTC Policy by the end of 2012 to reflect any changes.¹⁸⁶ Thus, it is further unlikely that all OTC generation will retire on their initial retirement date.

In sum, CAISO has failed to consider the extent to which compliance under Track I or Track II will make mitigate the need for additional local capacity resources. SCE itself has stated that with regard to OTC facilities in the Big Creek/Ventura area, procurement should not be authorized until OTC compliance plans “are fully clarified.”¹⁸⁷ At the least, the Commission should consider whether SACCWIS grants any extensions of compliance deadlines.

D. Transmission Mitigation Options Need to Be Analyzed.

The Commission should not authorize procurement of new resources when all potential transmission solutions have not been studied or identified. CAISO only included transmission upgrades and mitigations that are currently in place or already approved in its transmission plan.¹⁸⁸ This is inconsistent with Commission policy established in the 2006 RA proceeding to evaluate all possible transmission operational solutions before procurement,¹⁸⁹ and may also lead to procurement that is not just and reasonable. Indeed, Commission staff has also commented on the lack of transmission alternatives evaluation in CAISO’s study, stating: “[t]ransmission improvements specifically to reduce reliance on OTC plants as well as particular locations in the

¹⁸⁴ DRA Ex. 2 at p. 5.

¹⁸⁵ *Id.* at p. 5.

¹⁸⁶ *Id.*

¹⁸⁷ SCE Ex.1 (Opening Test.) at pp. 10-11.

¹⁸⁸ CEJA Ex. 3 (J. May Opening Test.) at p. 32 (quoting CAISO’s Transmission Plan at p. 28); *see also* CAISO Ex. 7 (Chapter 3 from 2011-2012 Transmission Plan).

¹⁸⁹ *See supra* at Section I.A (discussing procurement requirements).

transmission topology (such as LCR subareas) are required in order to inform complete alternatives.”¹⁹⁰

Importantly, as CAISO has demonstrated, transmission mitigations and upgrades can *significantly* reduce LCR need for the LA Basin.¹⁹¹ Notably, SCE, CEJA’s expert, DRA’s expert, and Calpine’s transmission expert all believe that there could be transmission upgrades that could reduce the need in the LA Basin.¹⁹² Assuming that no new transmission upgrades or mitigations will be constructed over the coming decade is unrealistic, especially in light of the numerous transmission projects that are routinely approved by CAISO during each transmission planning cycle.¹⁹³ A thorough examination of the extent transmission mitigation could reduce any projected need should be conducted prior to authorizing new procurement to assure that procurement is just, reasonable, and necessary.

Notably, SCE agrees that “CAISO has not investigated adding transmission facilities beyond the 2021 transmission configuration used in its analysis of need for LCR resources in the LA Basin.”¹⁹⁴ SCE also agrees that LCR need may be reduced by adding additional transmission facilities,¹⁹⁵ and that a technical transmission study would be required.¹⁹⁶ Such studies into potential transmission upgrades could take as little as six months to a year,¹⁹⁷ and many transmission upgrades can be implemented faster than new major high-voltage transmission

¹⁹⁰ CEJA Ex. 3 (J. May Opening Test.) at p. 32 (quoting Comments of the Staff of the California Public Utilities on the Draft Study Plan (March 14, 2012) *available at* <http://www.caiso.com/Documents/CPUCComments-Draft2012-2013StudyPlan.pdf> at 7)).

¹⁹¹ For example, the 600 MW transfer proposal CAISO stated can reduce LCR need in the LA Basin 2,000 – 3,000 MW. Tr. 84:16-20 (Sparks, CAISO); *see also* CEJA Ex. 4 (CAISO Data Request Responses to CEJA) at pp. 2-3.

¹⁹² Calpine Ex. 2 (R. Calvert Reply Test.) at p. 11; DRA Ex. 6 (R. Fagan Reply Test.) at p. 12; CEJA Ex. 3 (J. May Opening Test.) at pp. 32-35. Tr. 23:4-11 (SCE) (SCE has stated that it does “expect that there may be some transmission mitigation that might be available to reduce need).

¹⁹³ *See e.g.* CAISO Ex. 7 (2011-2012 Transmission Plan).

¹⁹⁴ SCE Ex. 1 (SCE Opening Test.) at p. 8.

¹⁹⁵ *Id.*

¹⁹⁶ *Id.* at p. 9.

¹⁹⁷ Tr. 797:2-18 (Cabbell, SCE).

lines.¹⁹⁸ Because of the short length of time needed to identify additional transmission solutions, those studies should take place before the Commission grants SCE procurement authority.

CAISO has identified possible areas where transmission solutions could reduce the LCR need for the LA Basin. This includes an upgrade to the Serrano-Villa Park line, which is the limiting contingency for the Western LA Basin.¹⁹⁹ CAISO admits that if the Serrano-Villa Park line were upgraded, it could change the LCR need in the Western LA Basin.²⁰⁰

CAISO has asked SCE for information about whether the Serrano-Villa No. 1 line could be upgraded with an incremental upgrade.²⁰¹ But, it has not adequately studied this potential solution since it has not even identified what type of upgrade could be done on the line.²⁰² SCE has also not publicly evaluated the Serrano-Villa corridor for transmission solutions.²⁰³ Yet, SCE agrees with CAISO that the Serrano-Villa Park Corridor would be a prudent area to look at.²⁰⁴ Transmission upgrades could fill the need in an easier and more cost effective way; adding transmission solutions should be studied and considered before SCE is authorized to procure new generation.

In addition, CAISO's proposed 600 MW load transfer from the Mira Loma West line, which would reduce LCR need for the LA Basin by thousands of MW, should be evaluated and considered.²⁰⁵ CAISO testified that the 600 MW transfer could generally reduce LA Basin need by 2,000-3,000 MW.²⁰⁶ However, the reduction range provided by CAISO's analysis is only

¹⁹⁸ DRA Ex. 6 (R. Fagan Reply Test.) at p. 12.

¹⁹⁹ CEJA Ex. 4 (CAISO Data Request Responses to CEJA) at p. 4; *see also* CEJA Ex. 3 (J. May Opening Test.) at p. 35.

²⁰⁰ Tr. 121:22-26 (Sparks, CAISO).

²⁰¹ Tr. 121:5-16 (Sparks, CAISO).

²⁰² Tr. 121:17-21 (Sparks, CAISO).

²⁰³ Tr. 794:9-15 (Cabbell, SCE).

²⁰⁴ Tr. 795:7-10 (Cabbell, SCE).

²⁰⁵ Tr. 84:16-20 (Sparks, CAISO); *see also* CAISO Ex. 1 (R. Sparks Opening Test.) at pp. 7-10. CAISO reported two sets of numbers for the LCR need in the LA Basin: one with the 600 MW load transfer and one without. *Id.*; *see also* CAISO Ex. 7 (Chap. 3 of 2011-2012 Transmission Plan).

²⁰⁶ Tr. 84:16-22 (Sparks, CAISO); *see also* CAISO Ex. 3 (R. Sparks Reply Test.) at p. 4; CEJA Ex. 4 (CAISO Data Request Responses) at pp. 3, 7-8.

between 1,199–2,557 MW.²⁰⁷ Based on these values, it is unclear whether the 2,000-3,000 MW reduction range includes other transmission upgrades beyond the 600 MW transfer proposal, or if CAISO has fully evaluated the impact of the transfer. SCE has not questioned the validity of CAISO's analysis associated with this transfer.²⁰⁸ This is not surprising given that SCE has not performed any technical or power flow analysis regarding the 600 MW load transfer.²⁰⁹ In fact, SCE did not perform any analysis on the numbers provided by CAISO's power flow modeling involving the 600 MW load transfer.²¹⁰

CAISO appears to contradict itself elsewhere on the impact from the 600 MW load transfer. For instance, CAISO did not reduce the OTC LCR need numbers after including the 600 MW transfer because it said that the project does not reduce LCR need in the Western LA Basin.²¹¹ However, another CAISO witness asserted that the load transfer would reduce need in the Western LA Basin.²¹² If it is true that the 600 MW transfer does impact the LCR need in the Western LA Basin, those changes should be reflected in CAISO's LCR need analysis.

Other transmission upgrades exist that could also lower any purported LCR need. CAISO is currently considering several transmission upgrades that were not considered in its analysis here.²¹³

In addition, other transmission technologies should be explored to enable preferred resources to better meet any perceived need. For instance, synchronous condensers provide both voltage support and inertia to the system.²¹⁴ This potential technology upgrade should be studied

²⁰⁷ CAISO Ex. 1 (R. Sparks Opening Test.) at p. 7-10 (tables); *see also* CEJA Ex. 3 (J. May Opening Test.) at p. 2. (Range produced when subtracting the need numbers after the 600 MW transfer from the numbers before the transfer. Numbers provided in tables).

²⁰⁸ Tr. 829:18-22 (Cabbell, SCE).

²⁰⁹ Tr. 828:4-14 (Cabbell, SCE); *see also*, CEJA X SCE Ex. 1 at p. 30 (SCE Responses to CEJA's Data Requests).

²¹⁰ Tr. 828:15-21 (Cabbell, SCE); *see also*, CEJA X SCE Ex. 1 at p. 19.

²¹¹ CEJA Ex. 3 (J. May Opening Test.) at p. 7; CEJA Ex. 4 (CAISO Data Request Response) at pp. 3, 7-8.

²¹² Tr. 85:17-20 (Sparks, CAISO).

²¹³ *See e.g.*, Tr. 173:2-23 (Sparks, CAISO).

²¹⁴ Tr. 360:11-19 (Millar, CAISO).

to determine how it could impact LCR need. CAISO has admitted that it expects California to follow the lead of other grid systems around the world in installing technology similar to a synchronous condenser to provide voltage support and inertia to the grid, rather than rely solely on generation units to provide these characteristics.²¹⁵ More of this type of technology is being incorporated around the world as more renewables come online.²¹⁶ Existing OTC sites could potentially be converted to allow for construction of resources such as synchronous condensers.²¹⁷ This type of resource was successfully used after the closure of the Hunter's Point Plant.²¹⁸ In fact, CAISO is currently looking into applying this method to facilitate the closure of the Huntington Beach 3 and 4 generators in SCE's territory.²¹⁹ CAISO should further study this technology upgrade before recommending expensive procurement.

The Commission should not authorize procurement for additional generation resources as a thorough investigation of the available transmission upgrades and mitigations has not been conducted. Procurement authorization without investigating other potential solutions would not be just and reasonable, and would potentially cost ratepayers billions of dollars.

III. THE COMMISSION SHOULD NOT AUTHORIZE ANY LCR PROCUREMENT.

A. There Is No Need in the LA Basin to Authorize Procurement of New Resources.

The Commission should find no need in the LA Basin area. As CEJA's expert has shown, if CAISO considered the resources that are anticipated to be online, it would likely have found no need.²²⁰ Specifically, CAISO's forecasted LCR need of 1,870 to 2,460 MW for the LA Basin would likely be eliminated if CAISO considered the available DR, EE, DG, Storage, CHP, and transmission options, which are thousands of MW above the need that CAISO found.²²¹ As

²¹⁵ Tr. 361:4-20 (Millar, CAISO).

²¹⁶ Tr. 361:4-20 (Millar, CAISO).

²¹⁷ See e.g., Calpine Ex. 2 (R. Calvert Reply Test.) at p. 10; Tr. 360: 11 – 362:1 (Millar, CAISO).

²¹⁸ Tr. 365:9-14 (Millar, CAISO).

²¹⁹ Tr. 365:18-27 (Millar, CAISO).

²²⁰ See CEJA Ex. 3 (J. May Opening Test.) at p. 2.

²²¹ See CEJA Ex. 3 at p. 2 (this need range is based on values CAISO forecast for the most effective locations).

provided by Ms. May’s table, the resources that should have been included in CAISO’s assessment include:

Resources Not Included in CAISO’s Analysis for LA Basin	
Resource	Value
Incremental EE	~ 1,934 MW
DR	~ 2,224 MW
DG	2,335 MW to 3,583 MW
CHP	at least 285 MW
Transmission Fixes	Need full assessment
Storage	Over 1,000 MW

The Commission can also rely on CAISO’s sensitivity analysis to find that there is no need in the LA Basin for new procurement. After considering incremental EE and CHP, CAISO found that the need was reduced to 1,042 -1,677 MW in the LA Basin area.²²² This value, however, does not include several resources such as the over 1,000 MW of DR that is expected in the SCE LCR area. If CAISO had included all reasonably expected resources, it would likely have found no need. Based on these results, the Commission should not authorize procurement of new resources.

1. The Commission Should Rely on the Addendum Analysis Results and Include Other Reasonably Expected Preferred Resources.

In its sensitivity analysis, CAISO assumed some uncommitted EE and CHP resources would be available in its environmental scenario.²²³ Specifically, this analysis assumed the same resources as the environmental scenario except for the additional EE and CHP resources, as well as a new transmission project.²²⁴ CAISO has not questioned its modeling of these resources.

²²² See CAISO Ex. 9 (Addendum Study) (describing CAISO’s sensitivity results).

²²³ CAISO Ex. 9 at p. 2.

²²⁴ CAISO Ex. 9 (detailing the differences between the sensitivity study and the environmental scenario).

Rather, it admits that if the resources assumed in its sensitivity study were on-line, they would reduce the LCR needs as reflected in the study.²²⁵ Thus, the only issue with the sensitivity study that needs to be evaluated is whether the resource assumptions that CAISO made are reasonable. CAISO's assumptions of uncommitted EE and CHP in its sensitivity analysis are not only reasonable, they are conservative. Thus, CAISO's sensitivity analysis should be the starting point of any need determination.

CAISO assumed the following values of uncommitted EE and incremental CHP for the Western LA and LA Basin:²²⁶

	Uncommitted EE	Incremental CHP
Western LA Basin	1,121 MW	180 MW
LA Basin	1,950 MW	201 MW

Consistent with CAISO's assumptions, the Commission should consider at least 1,121 MW of uncommitted EE for Western LA and 1,950 MW for the LA Basin. These values have been relied before, showing their reasonableness, and are also conservative assumptions. The EE values from the sensitivity study were provided to CAISO by the Commission and the CEC for incorporation in its 2011/2012 Transmission Plan, which relies on the 2009 IEPR forecast.²²⁷ These EE values are also consistent with the Commission's assumptions from the 2010 LTPP,²²⁸ and the values described in the Commission's recent straw proposal.²²⁹ In addition, these EE values are conservative since they do not include any industrial program savings and rely on the low realization scenario in California's Big Bold Energy Efficiency Strategies (BBEES).²³⁰

²²⁵ See Tr. 80:1-81:9 (Sparks, CAISO) (admitting that EE and CHP both reduced the LCR need when modeled).

²²⁶ See CEJA X CAISO Ex. 1 (CAISO Data Request Responses) at pp. 2-3; Tr. 158:6-159:17 (Sparks, CAISO) (making corrections to table).

²²⁷ See CAISO Ex. 9 at p. 2; see also CAISO Ex. 2 (R. Sparks Supp. Test.) at p. 4 (CAISO used the 2009 CEC forecast).

²²⁸ In the 2010 LTPP, the Commission's December 3, 2010 Scoping Memo used a value of 2,648 MW for SCE's territory. See CEJA Ex. 1 (B. Powers Test.) at p. 4 (citing Scoping Memo). Here, the energy agencies provided an assumption of 2,461 MW for SCE's territory. CAISO Ex. 9 at p. 3.

²²⁹ Assigned Commissioner's Ruling on Standardized Planning Assumptions, R.12-03-014 (June 27, 2012).

²³⁰ CEJA Ex. 1 (B. Powers Test.) at p. 5.

These uncommitted EE values also do not include updates from more recent building, lighting, battery, and television energy efficiency standards.²³¹ Moreover, these conservative uncommitted EE values are reasonable considering the numerous requirements and policies in California for increasing energy efficiency.²³²

CAISO's assumptions of incremental CHP are similarly conservative. As discussed in the CHP section, CAISO's assumption of 180 and 201 MW is conservative especially in light of the recent CHP settlement.²³³ Notably, SCE has already begun to submit Advice Letters to the Commission as a result of its RFO for a combined total of approximately 120 MW of new CHP in and around the LA Basin area.²³⁴

Based on its inclusion of 1,121 MW of uncommitted EE and 180 MW CHP in the Western LA Basin (the area which drives the need number), CAISO found that the LCR need was reduced by 1,088 MW.²³⁵ These reductions should be considered by the Commission when evaluating need due to the conservatories in the assumptions. In addition to these reductions, the Commission should consider other resources that were not included in CAISO's analysis.

2. CAISO's Addendum Analysis Failed to Consider All Resources that Are Expected to Come On-Line.

CAISO unreasonably failed to consider *any* demand response in its sensitivity analysis. This assumption is unreasonable as SCE already has DR programs in the area that can reasonably be expected to continue, and DR programs are expected to increase, not decrease, due

²³¹ Tr. 446:18-447:6 (Millar, CAISO); *see also* NRDC Ex. 1 (S. Martinez Test.) at pp. 4-5.

²³² *See supra* at Section IB(i).

²³³ *See supra* at Section IB (3).

²³⁴ Advice Letter-2772-E (Aug. 31, 2012), available at <http://www.sce.com/AboutSCE/Regulatory/adviceletters/> (seeking Commission approval for 80 MW new CHP facility); Advice Letter 2770-E (Aug. 31, 2012) available at <http://www.sce.com/AboutSCE/Regulatory/adviceletters/> (seeking Commission approval for a new 39.2 MW CHP facility).

²³⁵ Compare CAISO Ex. 1 (R. Sparks Test.) (finding the need in the environmental scenario was 1,870 MW to 2,884 MW) with CAISO Ex. 9 at p. 5 (finding that the need with incremental EE and incremental CHP considered is 782 MW to 1,301 MW). 1,870 MW – 782 MW = 1,088 MW. CAISO then also considered the Del-Amo loop, which changed the value by 260 MW.

to requirements by FERC, technological advances, and increased funding.²³⁶ The assumption that the Commission and the CEC provided to CAISO for DR programs in SCE's territory in 2021 was 2,829 MW.²³⁷ This translates to 2,224 MW DR in the LA Basin.²³⁸ Since the Western LA Basin is 48% of the load in the LA Basin, this value is approximately 1,064 MW for the Western LA Basin.²³⁹ This value is eminently reasonable. SCE's most recent load impact report is predicting approximately 937 MW of DR for 2014 for Western LA Basin.²⁴⁰ It is reasonable to assume that SCE's DR program will increase from 937 MW in 2014 to 1,064 MW in 2021 given the Commission's funding of DR programs and the technological advances that are likely to increase DR.

Significantly, SCE already has significant DR online in the Western LA Basin. As demonstrated by the analysis performed by SCE's engineer, a subset of SCE's DR programs currently provide over 540 MW of demand response in the Western LA Basin.²⁴¹ Notably, this 540 MW does not include all of SCE's DR programs, so the number is low.²⁴² Even SCE agrees that it is reasonable to assume that this currently available DR will be available in 2021.²⁴³ In addition, FERC requirements, additional funding, and new technology can reasonably be expected to increase DR in the upcoming years.²⁴⁴ Accordingly, the Commission should assume

²³⁶ See *supra* at Section IB(2).

²³⁷ See CAISO Ex. 7 (Chapter 3, CAISO 2011-2012 Transmission Plan) at p. 255.

²³⁸ CEJA Ex. 3 (J. May Opening Test.) at p. 13, 22 (describing calculation).

²³⁹ The load for the LA Basin in 2020 that CAISO relied on is 28,578 MW (Tr. 469:23-26 (Millar, CAISO)) and the load for the Western LA Basin in 2020 is 13,664 MW. See DRA Ex. 6 (R. Fagan Reply Test.) at Attach. A (CAISO Data Request Response). This value of DR for the Western LA Basin is proportional to the percentage of SCE's load from Western LA Basin. Based on these values, Western LA Basin is approximately 48% of the LA Basin load. 48% of 2,224 is 1064 MW. CAISO has used the same method for determining the percentage of preferred resources in a local area in this proceeding. See CEJA Ex. 4 (Data Requests) at p. 4 ("The amounts in the SCE local areas were roughly proportional to the amount of load in the local area relative to the amount of load in the overall SCE area.").

²⁴⁰ See DRA Ex. 6 (R. Fagan Reply Test.) at 8 (presenting values from SCE's most recent load impact final report); see also EnerNOC X SCE Ex. 1 (SCE Report on Interruptible Load Programs and Demand Response Programs).

²⁴¹ See CEJA X SCE Ex. 3.

²⁴² Tr. 1083:16 - 1084:3 (Silsbee, SCE).

²⁴³ Tr. 1084: 4-8(Silsbee, SCE).

²⁴⁴ See *supra* at Section IB(2).

that 1,064 MW of DR is available in the Western LA Basin in 2021. Given the 1,088 MW reductions that resulted from considering EE and CHP resources, 1,064 MW of DR is likely to eliminate the majority of the LCR need identified in the CAISO Addendum for the Western LA Basin since CAISO's identified need for the most effective locations is 1,042 MW.

The Commission should also assume that higher levels of DG will be available in 2021 than CAISO assumed in the sensitivity study. CAISO's assumptions for DG for three of the scenarios are based on numbers from a 2010 forecast.²⁴⁵ CAISO's assumptions for DG are conservative in light of recent developments since 2010 such as the net metering decision, the decreasing price of solar PV, and the Governor's 12,000 MW goal that support increasing assumptions of DG.²⁴⁶ Recent estimates for the LA Basin demonstrate that CAISO's DG estimates are thousands of MW below what is expected. As calculated by Ms. May, CAISO's estimates are 2,335 MW below SCE's portion of the DG goal for the LA Basin.²⁴⁷ Since the Western LA basin is approximately 48% of the load in the LA Basin, this value is approximately 1,120 MW for the Western LA Basin.²⁴⁸ This number does not include any of the additional MW expected from Orange County, which is also in SCE's LA Basin territory.²⁴⁹ Thus, it is reasonable to expect that any residual need not met by DR will be met by DG.

Furthermore, CAISO also relies on the 2009 IEPR forecast, which is several hundred MW higher than the current forecast.²⁵⁰ The difference between the forecasts gives the Commission yet another reason to find that there is no need in the LA Basin. In addition, energy storage was not considered despite the Commission already authorizing specific storage

²⁴⁵ See CAISO Ex. 1 (R. Sparks Opening Test.) at pp. 16 (describing how scenarios were from the 2010 LTPP).

²⁴⁶ See *supra* at section IB(3).

²⁴⁷ See *id.*

²⁴⁸ The load for the LA Basin in 2020 that CAISO relied on is 28,578 MW (Tr. 469:23-26 (Millar, CAISO)) and the load for the Western LA Basin in 2020 is 13,664 MW. See DRA Ex. 6 (R. Fagan Reply Test) at Appendix A (CAISO Data Request Responses). Based on these values, Western LA Basin is approximately 48% of the LA Basin load.

²⁴⁹ Tr. 1050: 22-28 (Silsbee, SCE).

²⁵⁰ Tr. 469:14-471:12 (Millar, CAISO).

programs in SCE’s territory.²⁵¹ Moreover, possible transmission options have not been explored.²⁵² Further, CAISO’s import values could have been higher in the Addendum, which would have further reduced the need.

3. *If CAISO Had Assumed the Same Level of Imports that It Said Was Reasonable, Its LCR Need Would Have Been Hundreds of MW Less.*

When CAISO performs its LCR studies, it maximizes import capability to minimize “the generation required in the load pocket to meet applicable reliability requirements.”²⁵³ When it performed the environmental scenario analysis for the Western LA, CAISO found an import level 6,349 MW.²⁵⁴ CAISO also provided an import value of 6,278 MW to DRA.²⁵⁵ In the sensitivity study, however, CAISO found an import value of 5,671.8 MW.²⁵⁶ The following table summarizes the import values from CAISO’s power flow runs:²⁵⁷

Western LA Basin	CAISO Environmental	CAISO Sensitivity	Value Provided to DRA
Import Value	6,349.5 MW	5,671.8 MW	6,278 MW

If CAISO had maximized imports in the sensitivity study, it should have forecast a lower need. CAISO’s witness testified that some of this discrepancy in import values could be explained due to the inclusion of the Del-Amo loop.²⁵⁸ However, a closer look at the values in the power flow analysis shows that this explanation does not make sense. CAISO testified that when it considered the Del Amo – Ellis loop in the Addendum study, it found: “the loop end

²⁵¹ See *supra* at Section VIII.

²⁵² See *supra* at Section IID.

²⁵³ CAISO Ex. 14 at p. 7 (summarizing the methodology used for local area studies); *id.* at p. 6 (stating that Ex. 14 used “the same criteria, input assumptions and methodology that were incorporated into its previous years LCR studies.”).

²⁵⁴ See CEJA X CAISO Ex. 1 (CAISO Data Request Responses) at p. 32; Tr. 149-152 (Sparks, CAISO); Tr. 1344:9-13 (Sparks, CAISO).

²⁵⁵ See Tr.1343: 12-23 (Sparks, CAISO).

²⁵⁶ CEJA X CAISO Ex. 1 at p. 55; Tr. 1344:14 – 1345:4 (Sparks, CAISO). (

²⁵⁷ Tr. 1343-1345 (Sparks, CAISO).

²⁵⁸ The loop end project “does not affect the level of generation available in the Western LA Basin.” Tr. 146:3-13 (Sparks, CAISO).

project actually created more flow to that constrain[t] and drove the need for additional local resources.”²⁵⁹ It further provided that the impact of considering the line was 260 MW.²⁶⁰ When asked how it would impact imports, CAISO’s witness said that the Del Amo loop would impact the “Serrano-Villa Park No. 1, which is the constraint for the Western LA Basin.”²⁶¹ He could not think of any other import lines that would be affected.²⁶² Yet, a closer look at the power flow analysis demonstrates that the import value on the Serrano-Villa line is nearly the same. The environmental scenario had an import level of 1,455.1 MW and the sensitivity study had an import value of 1,463.5 MW.²⁶³ Thus, CAISO’s explanation for the change of 260 MW does not make sense.

CAISO’s witness provided another explanation for the remaining change in import levels between the sensitivity study and the environmental scenario. He stated the following: “[A]s we removed that OTC generation, the lines that were closest to their limits ended up with a proportionately higher amount of import relative to all the other lines.”²⁶⁴ CAISO’s witness further provided that the “thermal limit of the line” changes the import values.²⁶⁵ A closer look at the power flow analysis demonstrates that the import levels on 15 of the 17 lines that flow into the Western LA Basin *decreased* between the environmental scenario and the sensitivity study,²⁶⁶ demonstrating that all of these lines had not hit their thermal limit. It is unclear why CAISO did not maximize the imports of all the lines in this analysis.²⁶⁷ Before the Commission

²⁵⁹ Tr. 145:21-27 (Sparks, CAISO).

²⁶⁰ Tr. 147:9-24 (Sparks, CAISO).

²⁶¹ Tr. 216:26-217:8 (Sparks, CAISO).

²⁶² Tr. 217:11-13 (Sparks, CAISO).

²⁶³ See CEJA X CAISO Ex. 1 (CAISO Data Request Response) at p. 55, 32; see also Tr. 149-152 (Sparks, CAISO) (describing how power flow runs should be read).

²⁶⁴ Tr. 1347:8-11 (Sparks, CAISO).

²⁶⁵ Tr. 1350:20-28 (Sparks, CAISO).

²⁶⁶ Compare CEJA X CAISO Ex. 1 at p. 32 with *id.* at p. 55 (power flow analysis printout showing import lines).

²⁶⁷ See, e.g., Tr. 1350:20-25 (Sparks, CAISO) (stating that the change in import values is due to effectiveness factors).

authorizes need on this analysis, it should examine whether import values are too low in the sensitivity analysis since increasing import levels will decrease LCR needs.

B. There Is No Need to Authorize Procurement in the Big Creek/Ventura Area.

The Commission should not grant any procurement authorization for the Big Creek/Ventura Area when SCE is not asking for authority. SCE has provided several reasons why no urgent need exists in this area and stated that LCR need for this area can be reevaluated in future years.²⁶⁸ Potential transmission fixes (such as the ones identified by Calpine) may be able to mitigate any need that exists in this sub-area, and that such transmission solutions can be further evaluated in the next LTPP cycle.²⁶⁹ SCE also notes that facility owners in this sub-area plan to comply with OTC regulations through Track II of the state’s OTC compliance policy or may elect to replace existing OTC equipment.²⁷⁰ SCE that asserts that: “[u]ntil the plans of these generators are fully clarified, the Commission should not authorize any procurement of new LCR generation in the area where these generators are currently located.”²⁷¹ SCE also has pointed out that “construction of new LCR generation can be completed more quickly and easily than in the LA Basin.”²⁷² Furthermore, “the entire 430 MW is not necessarily needed, but it was the only option available for the CAISO to test.”²⁷³

In addition, CAISO made a number of overly conservative assumptions and entirely excluded certain resources.²⁷⁴ When DRA included some of the excluded resources such as uncommitted EE, it found a surplus of over 1,800 MW in the Big Creek/Ventura area in 2020.²⁷⁵

²⁶⁹ Tr. 782: 28 -783: 1-8 (Cabbell, SCE) (SCE has not examined certain mitigation fixes in the Moorpark area); Tr. 782: 24-28 – 783: 1-17 (Cabbell, SCE) (more analysis needs to be done on potential mitigation in the Moorpark area, including on Calpine’s recommendations).

²⁷⁰ See also *supra* section IIC (discussing OTC compliance tracks).

²⁷¹ SCE Ex. 1 (Opening Test.) at p. 11.

²⁷² *Id.* at p. 10.

²⁷³ SCE Ex. 2 (Reply Test.) at pp. 19-20; Tr. 1018-1019 (Minick, SCE).

²⁷⁴ See *supra* Section II.B.

²⁷⁵ DRA Ex. 1 (R. Fagan Opening Test.) at p. 19.

Had CAISO properly considered these resources, its modeling would have shown no LCR need in the Big Creek/Ventura local area.

Moreover, other parties have also provided evidence that transmission fixes could further reduce the need. CAISO's need finding in the Big Creek/Ventura area is driven by contingencies in the Moorpark area, a sub-area within Big Creek/Ventura.²⁷⁶ In its testimony, Calpine identified transmission upgrades that could reduce or eliminate CAISO's projected need.²⁷⁷ For example, Calpine examined connecting Moorpark area transmission lines to additional substations, which would provide additional reliability benefits.²⁷⁸ Calpine also examined adding series capacitors to other lines²⁷⁹ and construction of a fourth circuit.²⁸⁰ CAISO itself has echoed this finding, stating that its need finding in the Moorpark subarea could be reduced by approximately 300 MW by installing additional reactive support.²⁸¹

For all the reasons highlighted by SCE and other parties, the Commission has time to wait until the next LTPP cycle before authorizing need in the Big Creek/Ventura area.

IV. IF THE COMMISSION FINDS PROCUREMENT IS NECESSARY, IT SHOULD ENSURE COMPLIANCE WITH THE STATE REQUIREMENTS AND POLICIES.

A. Incorporation of the Preferred Loading Order in LCR Procurement

California's loading order requires the procurement of all cost effective energy efficiency, demand response, renewable generation, and CHP ("preferred resources"), prior to

²⁷⁶ CAISO Ex. 1 (R. Sparks Opening Test.) at p. 14.

²⁷⁷ Calpine Ex. 2 (Calpine Reply Test.) at p. 2; *see also id.* at p. 6, Table 1 (summary of results studying transmission mitigation).

²⁷⁸ *See id.* at p. 7.

²⁷⁹ *See id.* at p. 8.

²⁸⁰ *See id.* at p. 9.

²⁸¹ CEJA Ex. 3 (J. May Opening Test.) at pp. 34-35 (*citing* CAISO Data Request No. 9); *see also* Tr. 86: 21-28 (Sparks, CAISO) (examined reactive support mitigation in the Moorpark area but results were not represented in the numbers).

the procurement of new fossil-fuel resources.²⁸² Given that utilities have an ongoing duty to comply with the loading order and have historically failed to fulfill that duty, the Commission must ensure that any potential need authorized in this proceeding is first met with all cost-effective preferred resources.

1. SCE Must Have a Concrete Plan to Ensure the Procurement of Preferred Resources Before Procuring New Fossil-Fuel Resources

The Commission should reject SCE's procurement plan. Rather than consider all resources in a competitive process, SCE's approach procures new fossil-fuel resources while merely studying the potential for filling need with preferred resources.²⁸³ (SCE has not even projected how much of any potential need can be met with current preferred resources for this proceeding.)²⁸⁴ If the studies find that preferred resources are not cost effective, then SCE "would also show that analysis to the Commission and use that as a basis for identifying why we have fully considered all preferred resources."²⁸⁵

A study of available preferred resources suggests that SCE would examine currently existing resources or resources planned under existing programs. As previously decided in the 2010 LTPP decision, this is insufficient to comply with the loading order.²⁸⁶ While SCE may consider what is available, new preferred resources should be able to be developed (via an RFO or other process) to meet any need found. Merely conducting a study of preferred resources is insufficient to comply with the loading order.

Another issue with SCE's proposal is timing. Apparently, the studies SCE plans to undertake to demonstrate loading order compliance would not be conducted until after, or at

²⁸² Cal. Pub. Util. Code § 454.5(b)(9)(C); D.12-01-033 at p. 17; *see also* CEJA Ex.1 (B. Powers Test.) at p. 2 (discussing Energy Action Plan, which prioritizes preferred resources and CHP ahead of new natural-gas development).

²⁸³ Tr. 626: 26 – 627: 3 (Cushnie, SCE) (describing loading order studies).

²⁸⁴ *See* CEJA-X-SCE Ex.1 at p. 25.

²⁸⁵ Tr. 609: 25 – 610:3 (Cushnie, SCE).

²⁸⁶ D.12-01-033 at p. 20.

least, during, an RFO targeted at conventional resources.²⁸⁷ These self-fulfilling studies appear to be aimed at merely justifying procurement of new fossil-fuel resources. SCE has also stated that preferred resources that do not meet certain LCR reliability criteria would not be able to participate in any solicitations, “but they will be considered separately in terms of their cost effectiveness in reducing the LCR need.”²⁸⁸ It is not clear at what point SCE would evaluate the cost-effectiveness of these other resources; if it is after SCE has already conducted a solicitation for conventional resources, this would be insufficient in comply with the loading order.

Further, this strategy would not result in loading order compliance should SCE continue to conduct RFOs aimed at procurement of purely conventional resources. For instance, if an RFO calls for a resource with the characteristics of a gas-fired power plant, then only a gas fired power plant would succeed. It also does not appear that SCE even intends to conduct an all-source RFO. SCE has stated that an all source RFO would be counterproductive where certain preferred resources would not fit specific requirements generally associated with conventional generation.²⁸⁹ Thus, there would be no way that a resource such as energy efficiency would be procured to reduce need. This approach to the loading order has already been rejected by the Commission.²⁹⁰

Finally, SCE’s loading order compliance strategy is ambiguous and not well defined. For instance, it is not clear if SCE would seek stakeholder input regarding its contemplated studies of preferred resources, whether there would be any Commission input or oversight, and when these studies would actually be conducted, particularly in light of SCE’s argument that there is an “urgent” need to procure new resources.²⁹¹ SCE has acknowledged that this would be a “new

²⁸⁷ Tr. 805: 8-15 (Cabbell, SCE) (summarizing recommendation as first doing an RFO for conventional resources and then looking at the economics of EE and other preferred resources)

²⁸⁸ CEJA-X-SCE-1 (Data Request Responses) at pp. 25-26.

²⁸⁹ See Tr. 609: 8-14 (Cushnie, SCE).

²⁹⁰ D.12-01-033 at p. 20.

²⁹¹ See e.g., Tr. 611: 2-6 (Cushnie, SCE) (SCE “ha[s] not contemplated at this point in time a very broad, expansive stakeholder process that helps us work through an LCR solicitation or procurement effort.”).

effort.”²⁹² Given the history of non-compliance with the loading order, SCE should be required to work out the details of any plan for loading order compliance in a transparent manner with opportunity for public participation. If need is found, an RFO should not be permitted until SCE has formulated a concrete plan with Commission oversight.²⁹³

To assure loading order compliance, the Commission should require SCE to conduct a phased RFO. Such an RFO would begin with a solicitation aimed at energy efficiency, and would select any cost-effective projects that resulted from this first phase. If there is still a portion of the identified need left un-filled, SCE would move on to the second phase of the RFO, which would solicit demand response resources. SCE would move down the line of preferred resources consistent with the prioritization in the loading order. If there is still an unmet need after holding a solicitation for all preferred resources including CHP and storage,²⁹⁴ only then could SCE solicit offers for fossil-fuel resources. A phased RFO would be consistent with the plain language of the loading order, which first requires the procurement of all cost-effective energy efficiency followed by demand response, renewable resources, CHP, and fossil-fuels only as a last resort.

B. GHG and Environmental Justice Requirements and Policies Need to Be Evaluated During Procurement.

1. GHG Requirements

If California does not start seriously evaluating the GHG impacts of its long term decisions, California will fail to meet its GHG requirements and targets.²⁹⁵ When deciding the

²⁹² Tr. 629: 19-25 (Cushnie, SCE) (“So Edison hasn’t put together a solicitation at this point in time. And so there’s really nothing for us to change because this is a very unique solicitation. This would really be a first-time solicitation for us to meet local area requirements. So it will be a new effort.”)

²⁹³ See D.07-12-052 at pp. 3-4 (“the utilities will be required to reflect in the design of their requests for offers (RFO) compliance with the preferred resource loading order.”).

²⁹⁴ While storage is not an official “preferred resource” under the loading order, the California Legislature and the Commission have recognized the importance of this resource and the Commission could prioritize its procurement by requiring as part of any RFO held as a result of this proceeding. See CEJA Ex. 1 (B. Powers Test.) at pp. 16-19.

²⁹⁵ See CEJA Ex. 3 at pp. 3-4 (discussing worsening climate change and air quality conditions and the need to drastically cut GHG emissions and other air pollutants).

parameters for LCR procurement, the Commission should ensure compliance with AB 32, which requires significant emission reductions in the utility sector.²⁹⁶ Different resource mixes will result in dramatically different GHG levels.²⁹⁷ To meet GHG reduction goals, it is likely that California will need to reduce GHG emissions to a much greater degree than can be achieved through a 33 percent RPS.²⁹⁸

Obviously, fossil-fuel sources emit more GHGs than preferred resources. For instance, CAISO identified 4.25 million tons of CO₂ emissions per year in the SCE area if conventional generation is procured to fill CAISO's purported LCR needs.²⁹⁹ Meeting AB 32's goals and staving off the more disastrous climate change impacts requires immediate and substantial emissions reductions.³⁰⁰ Reaching our GHG goals will require a transformation in the energy sector "that dramatically reduce[s] dependence on fossil fuels."³⁰¹ Allowing significant new sources of GHG emissions will hinder California's ability to meet its required GHG goals. The Commission should thus require consideration of how procurement of various resources will affect achievement of GHG reduction goals.³⁰²

Further, increased reliance on preferred resources, such as EE, is a key component of CARB's strategy to effectuate GHG reductions.³⁰³ The Commission has also found that "it

²⁹⁶ AB 32 mandates that California reduce GHG emissions to 1990 levels by 2020. Cal. Health & Safety Code § 38550. California Executive Order S-3-05 requires an 80 percent reduction below 1990 levels by 2050.

²⁹⁷ See CPUC and CEC Final Opinion on Greenhouse Gas Regulatory Strategies, in R.06-04-009 at p. 34, <http://www.energy.ca.gov/2008publications/CEC-100-2008-007/CEC-100-2008-007-F.PDF> (finding that "different resource policy scenarios result in very different levels of GHG emissions in 2020.")

²⁹⁸ CEJA Ex. 1 (B. Powers Test.) at p. 32.

²⁹⁹ CEJA Ex. 3 (J. May Testimony) at p. 3 (summarizing CAISO data request response).

³⁰⁰ CEJA Ex. 7 (J. May Selected Sources) at pp. 107-08 (AB 32 Scoping Plan) ("Reducing greenhouse gas emissions to 1990 levels means cutting approximately 30 percent from business-as-usual emission levels projected for 2020, or about 15 percent from today's levels. . . Getting to the 2020 goal is not the end of the State's effort. According to climate scientists, California and the rest of the developed world will have to cut emissions by 80 percent from today's levels to stabilize the amount of carbon dioxide in the atmosphere and prevent the most severe effects of global climate change.").

³⁰¹ *Id.* at p. 108 (AB 32 Scoping Plan).

³⁰² D.07-12-052 at pp. 3-4 ("utilities will be required to reflect in the design of their requests for offers . . . GHG reduction goals and demonstrate how each application for fossil generation comports with these goals.").

³⁰³ CEJA Ex. 7 at pp. 109-111 (AB 32 Scoping Plan).

appears improbable that the IOUs can reduce their carbon emissions from electric generation resources back to 1990 levels without a focused reliance on preferred resources.”³⁰⁴ Thus, loading order compliance is an essential part of California meeting its GHG requirements.³⁰⁵ The Commission has further found that past “LTTPs could have been strengthened by building into their calculations of future need for electric resources a methodology for analyzing the GHG implications of the different resources the IOUs can utilize to fill that net short position.”³⁰⁶ The requirements to consider GHG implications must be strengthened.

In addition, a recent study evaluating methods to achieve the state’s goal of an 80 percent GHG reduction by 2050 found that 1.3% cuts per year from EE over forecast demand over the next 40 years is both achievable and necessary to reach the 2050 goal.³⁰⁷ CAISO and SCE’s approach not only fails to evaluate such EE achievements, it locks California into long-term GHG emissions, with potentially thousands of MW of new power plants be built with operational life of at least 40 years.

SCE’s primary strategy for AB 32 compliance is to purchase allowances to cover GHG emissions from new conventional resources. Procuring new fossil-fuel resources, and merely purchasing allowances to cover GHG emissions from these resources, fails to capture the primary intent of AB 32, which is to reduce emissions. According to the legislative intent of AB 32, the first of the reduction measures to be contemplated is “direct emission reduction measures” from sources such as utilities.³⁰⁸ Additionally, “[s]ince AB 32 was enacted, the Commission has repeatedly indicated that reduction in GHG emissions is a key policy objective for the utility industry.”³⁰⁹ Moreover, this plan carries with it significant financial risks

³⁰⁴ D.07-12-052 at p. 243.

³⁰⁵ See D.12-04-045 at p. 11.

³⁰⁶ D.07-12-052 at p. 243.

³⁰⁷ CEJA Ex. 3 (J. May Opening Test.) at p. 11 (citing Science, *The Technology Path to Deep Greenhouse Gas Emissions Cuts by 2050: The Pivotal Role of Electricity*).

³⁰⁸ Cal. Health & Safety Code § 38561(b); Cal. Health & Safety Code § 38560 (state shall adopt rules “to achieve the maximum technologically feasible and cost-effective greenhouse gas emissions reductions.”).

³⁰⁹ D.10-12-035 at p. 38, citing D.07-12-052 at pp. 2-5, 243; D.08-10-037 at pp. 2-3.

associated with the changing price of allowances. SCE itself has acknowledged the “very volatile market prices” in the cap and trade market.³¹⁰ SCE should instead focus on procuring preferred resources, which generally emit no GHGs.³¹¹

In addition, fossil-fueled power plants have been found to represent the highest economic risk, while energy efficiency and renewables represent the lowest economic risk.³¹² The report found that: “sensible, safe investment strategies, based on the report’s detailed cost and risk analysis of a wide range of generation resources, should include: “[d]iversifying energy resource portfolios rather than “betting the farm” on a narrow set of options (e.g., fossil-fuel generation technologies and nuclear); and “[m]ore emphasis on renewable energy resources such as onshore wind and distributed and utility-scale solar.”³¹³ The Commission should carefully consider how additional fossil-fuel resources impedes AB 32 goals and, if need is found, prioritize the procurement of preferred resources that can both meet or reduce LCR need while contributing to GHG reduction goals.

2. Environmental Justice

The Commission should also integrate environmental justice considerations into any resource procurement if need is found in this proceeding. Fossil-fuel facilities are disproportionately cited in low-income, minority communities.³¹⁴ These communities bear disproportionate health impacts from pollution exposure, and often have higher levels of diseases associated with that exposure such as asthma and lung cancer.³¹⁵ Much of SCE’s territory

³¹⁰ Ex. 210 in R.10-05-006 (SCE Track III Test.) at p. 18; *see also* Tr. 632: 1-16 (Cushnie, SCE) (price of allowances will presumably change).

³¹¹ *See* Tr. 633: 18-21 (Cushnie, SCE) (“Clearly that’s one of the benefits of preferred resources is that they don’t have a GHG emissions profile.”); *see also* Tr. 948:27 – 949:13 (Minick, SCE) (air quality regulations would require offsets); Tr. 950-951 (Minick, SCE) (offsets would not be required for preferred resources).

³¹² CEJA Ex. 3 (J. May Reply Test.) at pp. 3-4.

³¹³ *Id.* Attach. B, (*Practicing Risk-Aware Electricity Regulation: What Every State Regulator Needs to Know, How State Regulatory Policies Can Recognize and Address the Risk in Electric Utility*, A Ceres Report at p. 3).

³¹⁴ *See* D.07-12-052 at p. 157 (noting that the utilities should give greater weight to the disproportionate resource sitings in low income and minority communities).

³¹⁵ *See* CEJA Ex. 3 at p. 4 (CARB estimates approximately 10,000 premature deaths per year in California due to PM 2.5 exposure).

already has some of the worst air quality in the country.³¹⁶ Many of the state’s renewable goals center on reducing health impacts from pollution and GHG emissions. Further, the Commission has previously found that “the IOUs need to provide greater weight [to issues] includ[ing] disproportionate resource sitings in low income and minority communities, and environmental impacts/benefits (including Greenfield vs. Brownfield development).”³¹⁷

Considering the extent to which new fossil-fuel facilities will continue to disproportionately burden marginalized communities is another reason why the Commission should carefully consider need in this proceeding, and should need be found, prioritize the procurement of preferred resources. Importantly, Section 399.13 of the Code *requires* that utilities “give preference to renewable energy projects that provide environmental and economic benefits to communities afflicted with poverty or high unemployment, or that suffer from high emission levels of toxic air contaminants, criteria air pollutants, and greenhouse gases.” Thus, the Commission needs to ensure that any procurement meets this mandate to give preference to environmental justice communities.

For instance, siting renewable resources such as rooftop solar PV in environmental justice communities can both help to decrease energy costs,³¹⁸ as well as eliminating the need to build new sources of fossil-fuel related pollution. As such, the Commission should place a priority on filling LCR need by siting preferred resources in low-income and minority communities. This should include renewable distributed generation that can help meet any LCR need. To institute this policy, the Commission should require that a certain percentage of renewable resources must be located within environmental justice communities. A reasonable

³¹⁶ *Id.* at p. 3.

³¹⁷ D.07-12-052 at p. 157.

³¹⁸ See D.07-12-051 at p. 4 (“more than 5.5 million households qualify for utility low-income programs and many of those households are barely able or unable to pay their energy bills.”); *see also* D.08-10-036 at p. 7 (goals of the MASH solar incentive programs include: “Decrease electricity use and costs without increasing monthly household expenses for affordable housing building occupants”; and “Increase awareness and appreciation of the benefits of solar among affordable housing occupants and developers.”).

percentage would be 25 percent. This 25 percent set-aside could also function somewhat like a locational adder. The Commission has previously permitted locational adders where it found the particular locational siting of a resource provided a measurable benefit.³¹⁹ Such bid criteria would conform to existing environmental justice goals.³²⁰ The Commission has found that a set percentage is an appropriate way to assure benefits for disadvantaged communities. The Commission has determined that 10 percent of California Solar Initiative (CSI) funds should be set aside for low-income customers and projects.³²¹ Further, the Commission should not permit the siting of new fossil-fuel resources in environmental justice communities. In order to identify low-income and minority communities wherein new fossil facilities should not be sited, the Commission should use an environmental justice screening methodology.³²²

Thus, should any procurement authority come out of this proceeding, the Commission should develop a 25 percent set aside for renewable resource sitings in low-income, minority communities. Further, no new fossil-fuel facilities should be permitted to be sited in these communities.

C. The Commission Should Assure that Any Procurement Considers Loading Order, GHG Requirements, and Environmental Justice.

If need is determined in this proceeding, the Commission should ensure that procurement complies with the loading order, and considers AB 32 and environmental justice considerations.

³¹⁹ See D.09-12-042 at p. 73 (FOF 19) (approved a ten percent locational adder for CHP facilities located in a local resource adequacy area); Renewable FIT Staff Proposal (Oct. 13, 2011) <http://www.cpuc.ca.gov/NR/rdonlyres/62A2B637-515C-467D-9666-E3731748398E/0/AttachmentAFITStaffProposal.pdf> (proposing locational adder for resources sited in load “hot spots.”).

³²⁰ See Cal. Pub. Util. Code § 399.13(a)(7) (“In soliciting and procuring eligible renewable energy resources for California-based projects, each electrical corporation shall give preference to renewable energy projects that provide environmental and economic benefits to communities afflicted with poverty or high unemployment, or that suffer from high emission levels of toxic air contaminants, criteria air pollutants, and greenhouse gases.”).

³²¹ D.07-12-051 at p. 12; D.06-01-024 at p. 27 (requiring that a minimum of 10% of program funds be applied to projects installed by low-income residential customers and affordable housing projects); AB 2723 (The MASH program will provide solar incentives to qualifying affordable housing developments to install solar energy systems on “low-income residential housing,” as defined in the bill). Generally, urban DG development should be limited to up to 500 kw.

³²² Information related to this will be presented in CEJA’s comments to the loading order workshop.

To ensure loading order compliance, the Commission must require prioritization and thorough consideration of preferred resources. To accomplish this, the Commission could require changes in RFO design that ensures loading order compliance such as requiring utilities to conduct a phased RFO as described above.³²³ With regard to AB 32, filling any need found with preferred resources will help achieve the State’s GHG reduction goals, as these resources, with limited exceptions, have little to no GHG emissions.³²⁴ In contrast, new fossil-fuel facilities will only hinder AB 32 compliance by adding additional GHG emitting facilities. Further, SCE has not calculated the emissions that could be expected from procuring new fossil-fuel facilities.³²⁵ This should be a concrete requirement for any bid analysis. The Commission should also require the utilities to integrate environmental justice concerns into any solicitation as described above.

SCE should also design its solicitations based on what is actually needed and not cater to particular resource characteristics. For instance, SCE has stated that while “[c]ertain preferred resources (e.g., Energy Efficiency and Demand Response) cannot meet local area reliability requirements . . . they can reduce the need for new local area resources.”³²⁶ SCE should not design its solicitation so that it requests characteristics that preferred resources such as energy efficiency and DR cannot meet. Instead, SCE should have a solicitation that first solicits resources that reduce LCR need, which would be consistent with the loading order.

E. SCE Has No Urgent Need to Begin Procuring New Resources.

CAISO and SCE’s argument that there is an “urgency” to begin procuring resources for 2020 demonstrates that their vision for meeting any purported need is based around fossil-fuel procurement. The discussion of why the Commission must make a finding of need now, despite

³²³ See *infra* Section D (discussing necessary changes).

³²⁴ Tr. 633: 18-21 (Cushnie, SCE) (“Clearly that’s one of the benefits of preferred resources is that they don’t have a GHG emissions profile.”).

³²⁵ Tr. 737: 7-17 (Cushnie, SCE).

³²⁶ CEJA-X-SCE-1 (Data Request Responses) at p. 26.

the uncertainty acknowledged by CAISO and the utilities, is that it purportedly takes up to seven years to build conventional power plants.³²⁷

Preferred resources typically take a significantly shorter time to implement or construct.³²⁸ Similarly, many of the factors SCE pointed to as to why it takes so long to build conventional power plants, including potential legal challenges,³²⁹ new air quality permitting regulations,³³⁰ and limited space, generally do not apply to preferred resources. Far from demonstrating why the Commission should authorize procurement now, these factors demonstrate why additional fossil-fuel construction can be a risky investment.³³¹ Further, even if SCE ends up filling some level of need with new fossil-fuel facilities, SCE has built peaker units in one year, demonstrating that units can be constructed much more quickly than seven years.³³²

Compliance with the State's OTC policy can also be accomplished with minimal shut-down or service interruption. Site operators have found that with regard to Track I compliance, it will be possible to convert OTC units to alternative technology without significant delays. For instance, OTC site-operator AES stated that it "may have the available space to construct approximately 2,300 MW across all three [of its] sites without the demolition of existing generating units," and predicted only a ninety day period "between the shutdown of the existing units and the commercial operations of the new units to support commissioning activities."³³³

³²⁷ See e.g., Tr. 371: 22 - 372: 6 (Millar, CAISO) (need for procurement authority now is based on lead time of up to seven years to build conventional resources).

³²⁸ See DRA Ex. 1 (R. Fagan Opening Test.) at p. 23 ("neither CAISO nor SCE should be obligated to *procure* for such potential occurrences seven to eight years in advance, or even 6 years in advance, given the wide range of resource options with lower lead times for procurement.").

³²⁹ Tr. 758: 14-24 (Cushnie, SCE) ("Parties may choose to challenge the resources that we're proposing to utilize to meet the LCR need.").

³³⁰ Tr. 948: 27 - 949: 13 (Minick, SCE) (air quality regulations would require offsets); Tr. 950-951 (Minick, SCE) (offsets would not be required for preferred resources).

³³¹ See CEJA Ex. 5 at pp. 3-4 (discussing risk associated with fossil-fuel investment, particularly when compared to less costly, less risky resources such as energy efficiency).

³³² Tr. 1166: 15-26 (Mara, AREM) ("For example, there was a situation in 2006 when Edison was ordered to build some peaker units and they did so within a year.").

³³³ CEJA Ex. 1 (B. Powers Test.) at p. 28 (citing AES Southland, *Implementation Plan Statewide Policy Use of Coastal and Estuarine Waters Power Plant Cooling: AES Alamitos Generating Station* (June 16, 2011) at pp. 6-8).

There is no urgency to begin filling any need found now. Should need be found in the next LTPP, there is sufficient time to begin filling that need with additional preferred resources, which can be developed more quickly than conventional generation.³³⁴ The Commission has ample time to conduct further studies and authorize LCR need, if such a need is found, in future LTPP proceedings.

V. LCR PROCUREMENT DOES NOT NEED TO HAVE CAISO'S FLEXIBLE CAPACITY ATTRIBUTES.

The Commission should not require that resources must have to fill CAISO's stringent definition of flexibility to meet LCR needs. LCR resources do not need to meet an overly stringent definition of flexibility to reduce LCR needs. Notably, LCR procurement has never been equated with flexible capacity.³³⁵ Resources that meet LCR need should include any resources that effectively reduce load. These resources have historically been considered as load modifiers and should continue to be. In addition, many other resources would be effective in reducing LCR need in the scenario that CAISO is forecasting. CAISO's modeling is based on a worst-case 1-in-10 day. On a 1-in-10 day, resources such as solar PV are highly effective during those peak times.³³⁶

In addition, as CAISO's witness admitted, there is general agreement that further analysis is needed before any renewable integration need determination is made.³³⁷ Indeed, CAISO's modeling in the 2010 LTPP, which was based on the same demand forecast that CAISO relies on here, showed no flexibility need for 2020.³³⁸

³³⁴ See Tr. 922:21- 927:23 (Fagan, DRA).

³³⁵ See D.09-06-028 (establishing local capacity procurement obligations and not including any flexibility requirements).

³³⁶ In fact, solar PV has been around 96% available during the top peak hours in the LA Basin. CEJA Ex. 1 (B. Powers Test.) at pp. 22-23.

³³⁷ Tr. 323:4-9 (Rothleder, CAISO).

³³⁸ D.12-04-046 at p. 7.

Furthermore, the majority of resources in the SCE area are currently “flexible” since much of SCE’s DR is dispatchable and SCE has a high percentage of conventional generation. CAISO’s modeling it is not based on flexible capacity needs and it would be inappropriate to procure resources that only meet the narrow definition of “flexible.”

VII. OTHER ISSUES

B. Coordination of Overlapping Issues Between R.12-03-014 (LTPP), R.11-10-023 (RA), and A.11-05-023.

The Commission needs to coordinate its consideration of overlapping issues to assure that the decision made in this proceeding does not conflict with the decisions made in the SDG&E PPTA proceeding (A.11-05-023) and the Resource Adequacy proceeding (R.11-10-023). The need to coordinate between proceedings is especially critical for the SDG&E proceeding. This Track and the SDG&E PPTA proceeding directly and substantially overlap. In fact, the Commission’s evaluation and consideration of the same CAISO’s transmission analysis is central to both proceedings.³³⁹ The overlapping issues of law and fact include:

- Whether it is appropriate for the Commission to rely on a 10 year projection with a 1-in-10 forecast that assumes several contingencies for authorizing long-term procurement.
- Whether it is just and reasonable to authorize ratepayer funds to procure new resources on the chance that an area has a 1-in-10 high temperature day with two contingencies.
- Whether and how uncommitted energy efficiency, demand response, energy storage, CHP, and distributed generation resources should be counted and considered when evaluating long-term LCR needs.
- What assumptions concerning retirements of OTC plants should be made for purposes of determining future local reliability needs.
- Whether the Commission should authorize new procurement of resources for local reliability concerns when possible transmission solutions have not been evaluated.

³³⁹ Compare A.11-05-023, March 12, 2012 Assigned Commissioner’s Amended Scoping Memo and Ruling in A.11-0-023 with R.12-03-014 May 17, 2012 Scoping Memo and Ruling of Assigned Commissioner and Administrative Law Judge, at pp. 4-5.

The Commission should ensure consistency in the adjudication of these overlapping issues that are central to determining the utilities' reliability requirements. Importantly, the Commission has previously recognized "the need to develop a consistent and transparent standard for the three IOUs to use in determining their system reliability responsibility."³⁴⁰ In addition, inconsistent decisions on these issues could call into question the validity of any such determination. Fundamental fairness issues are particularly concerning when some of the issues could potentially be adjudicated in the SDG&E proceeding before they are considered in the 2012 LTPP proceeding. When the limited issue of SDG&E's LCR need was transferred in January 2012, parties had no way to know that the SDG&E LCR issue would end up being virtually *identical* to the issues in the 2012 LTPP.³⁴¹ Parties in the 2012 LTPP were similarly unaware that issues in the 2012 LTPP could be adjudicated in the SDG&E proceeding before the 2012 LTPP. This raises potential problems of fundamental fairness to parties that were not on notice of the significant overlap between the two proceedings. Failure to coordinate these proceedings would result in inefficiencies at the Commission level because different ALJs may be required to grapple with the same issues in separate proceedings. Finally, the determination of these issues will be critical to deciding California's energy future, and inconsistent decisions will send unclear messages to stakeholders and operators.

When presented with similar types of overlapping facts and law, the Commission has recognized the need for consistency and has consolidated proceedings to efficiently adjudicate them. For example, the Commission consolidated the Low-Income Energy Efficiency projects³⁴² and Demand Response applications³⁴³ when it became evident that the proceedings overlapped. In the Smart Grid proceedings, the Commission consolidated the applications of the three utilities stating:

³⁴⁰ D.07-12-052 at p. 93.

³⁴¹ This is especially true since the 2012 LTPP had not yet started.

³⁴² A.08-05-022, A.08-05-024, A.08-05-025, A.08-05-026, R.07-01-042.

³⁴³ A.08-06-001, A.08-06-002, A.08-06-003.

[A] single proceeding involving SCE, PG&E and SDG&E will ensure the most efficient and thorough review of the initial Smart Grid Deployment Plans. Not only will a single proceeding process ‘help ensure some congruity’ in the Commission’s consideration of the baselines, plans, and technologies, but it will also allow interested parties to participate more easily.³⁴⁴

Here, because the proceedings have been separate, the Commission needs to take steps to ensure congruity in the Commission’s consideration as it did in the Smart Grid proceedings.

E. CAISO’s Assumption of Zero Megawatts of New Energy Storage is Unreasonable.

CAISO assumed that no new energy storage will be added to the grid before 2021.³⁴⁵

This is an unreasonable assumption that fails to consider recent California law and storage goals. CAISO’s assumption also ignores storage projects currently being planned by SCE.³⁴⁶

Specifically, CAISO’s assumption fails to incorporate the Governor’s Clean Energy Jobs Plan, which “envisions, accelerated development of energy storage capacity to support integration of renewable resources.”³⁴⁷ The Clean Energy Jobs Plan seeks to add approximately 3,000 MW of energy storage to the grid.³⁴⁸ This goal comports with the CEC’s finding that “California may require between 3,000 to 4,000 megawatts of fast-acting energy storage by 2020 to integrate the projected increase in renewable energy.”³⁴⁹ Assembly Bill 2514, signed into law in 2010, codifies the importance of storage development in California.³⁵⁰ The Commission has also recently revised the Self-Generation Incentive Program to include Advanced Energy Storage

³⁴⁴ D.10-06-047 at pp. 88-89.

³⁴⁵ CEJA Ex. 1 (B. Powers Test.) at p. 14; CEJA Ex. 3 (J. May Opening Test.) at p. 29; CEJA Ex. 4 (CAISO Data Request Responses) (“No new energy storage projects were assumed in the OTC studies for the LA Basin and the Big Creek /Ventura areas.”).

³⁴⁶ See CEJA Ex. 1 at pp. 15-18 (discussing SCE’s energy storage projects).

³⁴⁷ *Id.* at p. 3 (citing CEC, Renewable Power in California: Status and Issues on the Clean Energy Jobs Plan); see also CEJA Ex. 2 (B. Powers Selected Sources) at p. 18 (Clean Energy Jobs Plan).

³⁴⁸ CEJA Ex. 1 at p. 3 (discussing Clean Energy Jobs Plan); see also CEJA Ex. 2 at p. 18 (Clean Energy Jobs Plan). The Plan calls for energy storage equivalent to 5 percent of peak load. California peak load is approximately 60,000 MW. Five percent of 60,000 MW is 3,000 MW. See CEJA Ex. 1 at p. 3.

³⁴⁹ CEJA Ex. 1 at p. 14.

³⁵⁰ See Cal. Pub. Util. Code § 2835, *et. seq.*

as a qualifying facility.³⁵¹ In conjunction with FERC, CAISO is undertaking a variety of initiatives to facilitate energy storage participation in the market including revising its tariff requirements for ancillary services in order to allow resources such as storage to participate in the ancillary services market.³⁵²

SCE has a host of energy storage initiative and projects underway that will increase energy storage capacity in its territory. For instance, SCE's Tehachapi Wind Energy Storage Project is currently testing 8 MW of "large-scale lithium-ion batteries for storing intermittently-generated wind energy."³⁵³ Brightsource Energy has also added thermal energy storage capability to three of its power purchase agreements with SCE.³⁵⁴ Brightsource has stated that by adding storage, it will be able to forego building an additional 200 MW plant.³⁵⁵ SCE also has a contract for a 1 MW storage project on Catalina Island.³⁵⁶ In addition, the Commission has also directed SCE to solicit proposals for 11 MW of storage under the Permanent Load Shifting (PLS) program.³⁵⁷ Subsequently, SCE was granted an increase PLS budget of \$14 million for 19 MW of PLS.³⁵⁸

SCE's Smart Grid Demonstration Plan also sets forth multiple energy storage projects. This includes its Home Battery Pilot Project, designed to "integrat[e] home energy storage with Demand Response (DR) strategies, renewable energy generation (wind and solar) and SCE's

³⁵¹ D.11-09-015 at pp. 18-19.

³⁵² CEJA Ex. 1 at pp. 18-19 (The tariff changes were "designed specifically to enhance the ability of energy storage and other non-traditional resources to participate in the ISO's ancillary services markets.").

³⁵³ CEJA Ex. 2 (B. Powers Selected Sources) at pp. 169-170; *see also* CEJA Ex. 1 at pp. 17-18.

³⁵⁴ CEJA Ex. 2 at pp. 220-21; *see also* CEJA Ex. 1 at pp. 17-18 (discussing project).

³⁵⁵ CEJA Ex. 2 at p. 221.

³⁵⁶ *Id.* at p. 222.

³⁵⁷ *See* D.12-04-045 at p. 146. "Generally speaking, PLS involves storing electricity produced during off peak hours and using the stored energy during peak hours to support loads. Examples of PLS technologies include battery storage and thermal energy storage." *Id.*

³⁵⁸ D.12-04-045 at p. 147, 150-51.

advanced metering infrastructure.”³⁵⁹ The pilot project will include storage at up to 50 sites by the end of 2012.³⁶⁰ Similarly, SCE’s Irvine Smart Grid Demonstration project is a \$79 million pilot project that “will comprehensively test various storage operational uses and applications within a Smart Grid over a 3 year time frame.”³⁶¹

These projects are part of the growing energy storage market in California. “Investments in energy storage have increased by 13 fold over the past year, accounting for 11 percent of total investment dollars in clean technology in 2011.”³⁶² SCE has also received federal stimulus funds “totaling \$620 million explicitly for energy storage projects with a further \$3.5 billion in related smart grid investment.”³⁶³

Numerous parties to the proceeding have elaborated on the importance of energy storage development.³⁶⁴ Both SCE and CAISO agree that energy storage will play a major role in California’s changing grid. SCE has also found that storage is two to three times more effective than conventional generation in meeting ramping requirements.³⁶⁵ CAISO itself has acknowledged that storage could provide some of the need.³⁶⁶ Yet, CAISO did not even review the interconnection process to see whether any storage projects were slated for the L.A. Basin.³⁶⁷

³⁵⁹ CEJA Ex. 2 (B. Powers Selected Sources) at p. 181 (“The program assumes that peak power demand can be reduced by up to 4 kW per home for up to two hours per day.”); *see also* CEJA Ex. 1 (B. Powers Test.) at p. 17 (discussing project).

³⁶⁰ CEJA Ex. 2 at p. 181.

³⁶¹ *Id.* at p. 193; *see also* CEJA Ex. 1 at p. 17 (discussing project).

³⁶² CEJA Ex. 1 at p. 16.

³⁶³ *Id.* at p. 17 (quoting SCE Report: Moving Energy Storage from Concept to Reality).

³⁶⁴ *See e.g.*, CESA Ex. 1 (J. Lin Test.) at p. 3 (“Energy storage technologies may be paired with a number of grid-based or local generation resources, and may be placed in multiple locations on the grid. Depending on design and location, energy storage may be used to meet a number of policy goals, from load leveling to voltage regulation.”); *see also id.* at p. 3 (“Looking forward, this evolving grid will require increasing flexibility, intelligence, and diversity to remain reliable, sustainable, efficient, and effective. Energy storage is a crucial asset in this energy future.”).

³⁶⁵ CEJA Ex. 2 (B. Powers Test.) at p. 151; CEJA Ex. 3 (J. May Opening Test.) at p. 30; *see also* CEJA Ex. 7 (J. May Selected Sources) at p. 151 (SCE Report: Moving Energy Storage from Concept to Reality).

³⁶⁶ CEJA Ex. 3 at p. 30 (quoting CAISO stating in a data request response that “The ISO has not performed an analysis to determine the effectiveness of using storage to meet the LA Basin LCR need. However, it is likely that some of the need could be met by the storage specified in the question.”).

³⁶⁷ Tr. 404:17 - 405:2 (Millar, CAISO).

Similarly, SCE did not consider its own storage projects when evaluating the reasonableness of CAISO's analysis.³⁶⁸ The failure to consider *any* storage projects that are on-line or being constructed as an available resource makes CAISO's analysis unrealistically conservative. These resources need to be considered since they are a viable way to meet load requirements and are an integral part of SCE's Smart Grid plan.

Given the Governor's 3,000 MW storage goal, the initiatives being taken by FERC and CAISO to improve the storage marketplace, the storage programs laid out in SCE's Smart Grid Plan, and the storage projects in the works, it is unreasonable to assume zero MW of energy storage by 2020. The Commission should make a reasonable energy storage assumption that reflects the noted importance of storage in California's changing energy sector. CEJA recommends the reasonable assumption of *at least* 100 MW of energy storage for 2020 in the LA Basin.

CONCLUSION

For the reasons stated above, CEJA urges the commission to find there is no need for new procurement in the SCE territory at this time.

Respectfully submitted,

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/s/ Shanna Foley
DEBORAH BEHLES
SHANNA FOLEY
CATHERINE DICKSTEIN,* MABEL YEE,*
CELESTE YOUNG,* ADELE SCHAFER*
Environmental Law and Justice Clinic
Golden Gate University School of Law
536 Mission Street
San Francisco, CA 94105-2968
Telephone: (415) 442-6647
Facsimile: (415) 896-2450
dbehles@ggu.edu; sfoley@ggu.edu

³⁶⁸ See Tr. 948: 1-25 (Minick, SCE).

Attorneys for the California Environmental Justice
Alliance

* Certified Law Students practicing under supervisor Deborah
Behles pursuant to California's PTLs Rules