

**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

Rulemaking 12-03-014

**CITY OF REDONDO BEACH'S COMMENTS TO PROPOSED DECISION AUTHORIZING
LONG-TERM PROCUREMENT FOR LOCAL CAPACITY REQUIREMENTS DUE TO
PERMANENT RETIREMENT OF THE SAN ONOFRE NUCLEAR GENERATION STATIONS**

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OF THE CALIFORNIA PUBLIC UTILITIES COMMISSION**

14.3(a)2

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I. Introduction

Pursuant to California Public Utilities Commission (Commission) Rules of Practice and Procedure, rule 14.3(a), the City of Redondo Beach (the City) respectfully submits these comments to the February 11, 2014, Proposed Decision (PD) of Administrative Law Judge David M. Gamson on Track 4 of the above-captioned long-term procurement plan (LTPP) proceedings. The purpose of the Track 4 is to determine to what extent additional capacity is required to meet local capacity needs stemming from the retirement of the San Onofre Nuclear Generation Stations (SONGS).

The City appreciates the challenge facing the Commission in reviewing the testimony and briefs of the numerous parties in this proceeding, which involves highly technical matters. Regrettably, certain elements of the City's analysis and testimony have been misconstrued, overlooked, or not provided sufficient weight. On several points, the PD embraces criticisms of the City's study methodology without acknowledging that the City, in fact, used exactly the same methodology as those criticizing the City. Therefore, the Commission should more thoroughly consider the City's testimony and recommendations therein.

Specifically, the City recommends that the Commission prohibit any more than 1000 megawatts (MW) of Gas-fired Generation (GFG), combined between Tracks 1 and 4, for Southern California Edison Company (SCE). The Commission should authorize SCE to procure 1200 MW of preferred resources (including storage) in addition to the 800 MW of preferred resources authorized in Track 1. The Commission should also conduct further analysis to determine optimum preferred resources/GFG mix for the San Diego local capacity requirements (LCR) area before authorizing additional GFG for San Diego Gas & Electric Company (SDG&E).

Additionally, the Commission should require SCE and SDG&E to develop programs, such as SCE’s proposed “Living Pilot” program, to facilitate the development of preferred resources. The Commission should not allow the Investor-Owned Utilities (IOUs) to enter into, or even propose, contingency contracts, because option contracts are inherently risky and could have the effect of giving a competitive advantage to the development of additional GFG, as opposed to GHG-free alternatives.

II. The Track 4 Authorization for SCE Should Not Allow For Additional Procurement from GFG

The primary responsibility of the Commission is to ensure safety and reliability in the electrical system, however, that responsibility must be balanced with other statutory and policy considerations.¹ One such concern is the environment. The state’s Loading Order makes clear that IOUs must “procure renewable resources to the fullest extent possible.”² The PD’s determination to provide an opportunity for IOUs to procure additional GFG capacity conflicts with the Loading Order.

The City’s analysis has shown that a slightly higher increase in procurement authorization limited only to preferred resources meets the reliability standards identified by the California Independent System Operator (CAISO) and prevents unnecessary GHG emissions. Furthermore, if the Commission fails to direct the procurement of preferred resources in the amounts recommended by the City, California will be giving back what ground it has gained in curbing GHG emissions, at least in the Los Angeles Basin and San Diego areas.

The City’s analysis used the same power flow study methodology, load and resource assumptions and reliability criteria (N-1-1) as that used in the CAISO’s own analysis.³ Consistent with the CAISO, the City proposed a solution that does not require the use of controlled load drop. The City’s solution was tested under a number of contingencies, including the combined San Diego and Los Angeles Basin area (the SONGS area) contingency —comprised of the outage of the 500 kV Imperial Valley-Suncrest⁴ portion of the Sunrise Powerlink followed by the outage of the 500 kV ECO-Miguel portion of the Southwest Powerlink—identified by the CAISO.⁵ The City’s solution works. The City

¹ D.13-02-015 at 35.

² D.07-12-025 at 12.

³ City’s Opening Brief, p. 7-8.

⁴ The most limiting segment is actually the 500 kV link between the recently added Ocotillo substation and Suncrest substation.

⁵ City’s Opening Brief, p. 7; CAISO Opening Brief, p. 17.

has explained why its two-step study process and conclusions are valid and applicable to determining LCRs for the SONGS area.⁶

The difference between the CAISO's requirement numbers and the City's requirement numbers is not a matter of different methodology. Rather the difference follows from the City's effort to find the least amount of capacity needed in the power flow model to solve the reliability problem identified, while observing all CAISO reliability standards.

a. The City's Calculated Total Requirements

The City's results show that a total of 2960 MW (2000 Preferred Resources + 960 GFG) in the Los Angeles Basin plus 1100 MW (320 Preferred Resources + 780 GFG (including the Pio Pico gas turbines)) of resources in the San Diego area are adequate to meet the SONGS area total LCR need through at least 2022 as presented in Table 1 below:

⁶ The two steps are (1) adding enough generation in the San Diego area to meet the reliability needs of the San Diego area (which are determined by the same N-1-1 contingency as for the larger SONGS LCR area), and then (2) determining the generation needed to meet the Western Los Angeles Basin LCR under the most critical contingency condition for that LCR sub-area. The reasoning for this process was described both technically and logically. (City's Reply Brief, p. 5-6.)

Table 1
Total Capacity Needs in 2022 (without the SONGS)

		Total Resources required in Los Angeles Basin (MW)	Total Resources needed in San Diego Area (MW)	Total Los Angeles Basin Plus San Diego Area Resources (MW)
Preferred Resources/ including Storage (NQC)	City	2000	$800 \times .40 = 320^8$	2320
	CAISO	--	--	
Gas-fired Generation	City	960	780^9 (including 300 MW from Pio Pico)	1740
	CAISO	--	--	
Total Identified Resource Need	City	2960	1100	4060
	CAISO	3022 ¹⁰	1485 ¹¹	4507 ¹²
	PD			4642 ¹³

Comparing the City’s proposed total resource requirements for the SONGS area to that proposed by the CAISO (above) shows that the City’s identified resource needs are lower; by 62 MW in the Los Angeles Basin (3022 - 2960) and 385 MW (1485 – 1100) in the San Diego area. Because the City’s solution (4060 MW = 2960 + 1100) uses the same power flow methodology and assumptions as the CAISO, but produces LCRs that are lower than the CAISO’s LCRs (4507 MW = 3022 + 1485), the Commission should examine why the City was able to solve the same power flow case with 447 MW less dependable capacity than the CAISO (447 MW = 4507 – 4060) identified.

b. City’s Proposal for Track 4 Authorization

Subtracting the Track 1 procurement authorization from the total need identified by the City in Table 1 shows the need for Track 4 procurement authorization in the Los Angeles Basin and San Diego

⁷ The Preferred Resources considered by the City include, incremental Energy Efficiency, incremental Demand Response, incremental Distributed Generation solar PV (DG) and incremental Combined Heat and Power.

⁸ Unlike the Western Los Angeles Basin LCR sub-area, the City did not attempt to optimize the mix of preferred and conventional resource additions in the San Diego LCR area. The City adopted the PD’s determination that 40% of new local capacity ($800 = 1100 - 300$) should come from preferred resources in the San Diego LCR area. See PD, p. 5.

⁹ $1100 - 320 = 780$.

¹⁰ PD, p. 26 ISO Table 13 (The CAISO’s 2/3 - 1/3 (LA/SD) scenario: $3022 = 1800$ Track 1 + 1222 Track 4).

¹¹ PD, p. 26 ISO Table 13 (The CAISO’s 2/3 - 1/3 (LA/SD) scenario: $1485 = 308$ Track 1 + 1177 Track 4).

¹² PD, p. 26 ISO Table 13 (2/3 - 1/3 (LA/SD) scenario).

¹³ PD, p. 26 ISO Table 13 (80/20% (LA/SD) scenario).

areas. The City’s proposed Track 4 procurement authorizations for the Los Angeles Basin and San Diego areas are shown on Table 2 below:

Table 2
Track 4 Procurement Authorizations for SCE and SDG&E
(Rounded Numbers)

	SCE			SDG&E		
	Track 1 Authorization (MW)	Additional Track 4 Authorization (Total need – Track 1) (MW)	Total Authorization required in Los Angeles Basin (MW)	Track 1 Authorization (MW)	Additional Track 4 Authorization (Total need – Track 1) (MW)	Total Authorization required in San Diego Area (MW)
Preferred Resources including Storage	800	1200	2000	--	320	800 x .40 = 320 ¹⁴
Gas-fired Generation	1000	0	960	300 (Pio Pico)	480	780
Total Resource Need		1200	2960		800	1100
PD	1400-1800	500-700	1900 to 2500	300	500-700	800-1000

The City’s recommendation for total authorization in Track 4 is higher than the PD for two reasons. First, the City has not used the controlled load drop SPS to mitigate N-1-1 overloads, nor made any other adjustments to the need. Second, the effectiveness of preferred resources distributed in proportion to substation loads is less than the GFG, which is more optimally located to mitigate the critical N-1-1 contingency—as explained in section V below, based on analysis of the effectiveness of preferred resources the City determined that Distributed Generation (DG) modeled in proportion to substation loads in the Western Los Angeles Basin LCR sub-area¹⁵ are over 70%¹⁶ effective in reducing

¹⁴ The City did not attempt to optimize the mix of preferred and conventional resource additions in the San Diego LCR area. The City adopted the PD’s determination that 40% of new local capacity should come from preferred resources in the San Diego LCR area. See PD, p. 5.

¹⁵ City’s Testimony, p. 17.

the LCRs as compared to coastal resources, which are more optimally located. Additionally, the City proposes that a higher percent of the total Los Angeles Basin LCR come from preferred resources than the PD. For the Los Angeles Basin, the City recommends a ratio of 2/3 preferred resources (2000 MW) and 1/3 gas-fired resources (1000 MW). The City's studies show that this mix of resources would be effective in mitigating the most critical N-1-1 contingency condition identified.¹⁷

The City's results shown on Table 2 indicate that with a total of 2000 MW of dependable capacity (Net Qualifying Capacity or NQC) from preferred resources in the Los Angeles Basin (including storage) there would be a need for less than 1000 MW of GFG generation in the Los Angeles Basin. Therefore, the City believes the PD—which authorizes SCE to procure 100 to 300 MW “from any resource”—should be revised to prevent SCE from purchasing more gas-fired generation than needed. Instead the City recommends the PD be revised to authorize SCE to procure 1200 MW of preferred resources.

Table 3 below shows the total amount of preferred resources forecast by the CAISO (and referenced in the PD) to be available in 2022 in the Los Angeles Basin LCR area and the San Diego LCR area. This amount is adequate to meet the City's proposed preferred resource additions in the SONGS area by 2022 without the use of temporary load drop. This level of dependable capacity from preferred resources is feasible as demonstrated by Table 3 below.

¹⁶ The CAISO's results shows that 2460 MW of coastal gas-fired generation would satisfy LCRs in the Los Angeles Basin. The City's results indicated that about 2000 MW of distributed generation plus 1000 MW of coastal GFG could accomplish the same thing. $2460 / (2000 + 1000) = 73\%$.

¹⁷ City's Opening Brief, p. 2.

Table 3
Preferred Resources Discussed in the PD
Projected to be Available in Year 2022

Preferred Resources Forecast	MW	Source
CAISO's Incremental Demand Response (DR)	198	CAISO Testimony Table 13, PD, p. 26
CAISO's Incremental Energy Efficiency (EE)	983	CAISO Testimony Table 13, PD, p. 26
CAISO's Incremental Distributed Generation (DG)	457	CAISO Testimony Table 13, PD, p. 26
CAISO Error	152	CAISO Testimony Table 13, PD, p. 26
Storage	75	PD Authorization
Subtotal based on numbers in PD	1865	
Additional Preferred Resources	460	PD, p. 126 (Finding of Fact No. 66)
Total Available Preferred Resources (including Storage)	2325	

Consistent with the City's testimony, if achievement of the City's proposed amounts of preferred resources are not certain enough for the Commission, then a controlled load shedding SPS could be implemented until the City's recommended amount of preferred resources can be achieved. This is consistent with the PD's treatment of controlled load drop in the San Diego area.¹⁸ Adopting the PD's methodology for reducing the Track 4 LCR need to reflect the impact of a controlled load shed SPS, the need for preferred resources in the Los Angeles Basin plus San Diego areas would be reduced by at least 588 MW.¹⁹ The resulting need for preferred resources would then be 1737 MW (2325-588).

Although the City applauds the PD's support of SCE's "Living Pilot" and agrees that SDG&E should be encouraged to do the same, the City believes that procurement authorization specifically for preferred resources provides the push necessary to move SCE and SDG&E in a direction that conforms to California's public policy preferences. In replacing the SONGS' GHG-free generation, the Commission should consider the use of GHG-free replacement resources; preferred resources, not additional GFG.

The City has proposed, and the PD should be revised to authorize, a total of 2320 MW of dependable preferred resource capacity (including storage) for the combined Los Angeles Basin and San

¹⁸ See PD, p. 45.

¹⁹ See PD, p. 46 ("Therefore, we conclude that it is reasonable to subtract 588 MW from the ISO's forecasted LCR need because our policy decision entails a certainty that resources will not be procured at this time to fully avoid the remote possibility of load-shedding in San Diego as a result of the identified N-1-1 contingency.").

Diego areas under Tracks 1 and 4. These resources would replace a significant portion of SONGS' GHG-free energy. If the Commission fails to direct the procurement of preferred resources in the amounts recommended by the City, California will be giving back ground it has gained in curbing GHG emissions, at least in the Los Angeles Basin and San Diego areas.

The City's proposal meets the reliability standards identified by the CAISO. Additionally, the City's proposal does not add any more GHGs than necessary to the area and is therefore better environmentally for California. The City's proposal also reduces the ability of owners of existing coastal generating sites to exercise market power in the provision of new GFG. Preferred resources are not controlled by a handful of owners and can be added in smooth increments, which provides more flexibility and therefore reduces the risk of under- or over-procurement (as compared to large central station gas-fired resources which may be added in lumpy increments).

III. Factual Errors Regarding the City's Testimony

The proposed decision incorrectly states, "No party attempted to estimate the probability that two sets of low probability events – i.e., very high peak load and loss of both 500 kV lines in sequence – would occur at the same time on the same day."²⁰ The City provided an estimate of the probability of this outage occurring during peak hours of one in ten years, indicating the extremely low probability, as follows:

"The contingency conditions under which the LCRs are estimated assume the worst case overlapping outage of two transmission lines (an N-1-1 contingency condition). This Contingency condition has a very small probability of occurrence. Roughly speaking, the outage of one line has less than a 1% (0.01) probability of occurrence. The probability of an overlapping outage of two lines is therefore 0.01% (0.0001 = 0.01 x 0.01). The probability that the foregoing worst case N-1-1 contingency condition will occur during a 1-in-10 peak load condition is several orders of magnitudes smaller and therefore very remote. While the N-1-1 contingency condition must be studied under reliability standards, the likelihood that this condition will ever occur approaches statistical insignificance. The probability of an N-1-1 contingency occurring at the peak hour of a 1-in-10 load forecast is .0001 x 1/ 8760 = 0.000000001, which is about 1 in a billion for the peak hour. Because surrounding hours are likely to approach the peak hour load levels, there will be more than one hour of very high load level during the ten-year period, e.g., 200 hours. Multiplying the single-instance probability by 200 yields a probability of 1 in 5 million for the need."²¹

Additionally, the PD incorrectly states that Redondo Beach's witness, Ms. Firooz, asserted that the N-1-1 contingency was a Category D contingency. The PD states, "Several parties argue that the

²⁰ PD, p. 43.

²¹ Redondo Beach Report, page 13; City's Testimony submitted on August 26, 2013, p. 5; City's Opening Brief, p. 14.

Category C contingency in San Diego modeled by the ISO is functionally a Category D contingency under WECC reliability standards, using a probabilistic analysis. Sierra Club witness Powers, CEJA witness May, POC witness Peffer and Redondo Beach witness Firooz presented extensive technical testimony on this point.”²² In fact, the City’s witness Firooz has never contested the Category C designation of the critical N-1-1 contingency event. This misnomer is likely carried over from the rebuttal testimony of the CAISO, which also inappropriately lumped Ms. Firooz’s testimony in its critique of other parties’ testimonies.²³

IV. Customer-Side Solar PV

The PD notes, “The revised Scoping Memo designates incremental customer-side solar PV as a ‘second contingency’ resource because it is difficult to predict the location where customer-side PV will get built.”²⁴ The PD goes on to find, “We are hopeful that solar PV can be useful in reducing LCR needs in the future, but it is too speculative to make any changes to the ISO study results on this basis at this time.”²⁵

The City believes the decision not to include customer-side solar PV should be reconsidered. Lack of specific locations for DG (such as customer-side solar PV) is similar to the lack of specific locations for Energy Efficiency (EE). If EE can be modeled and counted on—as the CAISO’s LCR modeling of substation loads implicitly does—so should DG. The CAISO’s assertion that DG is a load modifier²⁶ attests to its similarity to EE. Furthermore, whether DG is modeled as a distributed resource, as the City has done, or as a load modifier, it is similar to EE and can easily be modeled as proportional to substation loads in the area. While there would be some inaccuracy associated with approximation of DG locations, the error introduced would be similar to modeling EE and is relatively small compared to the other approximations in the model. The City has performed such proportional spreading.²⁷

²² PD, p. 46.

²³ See Opening Brief of the CAISO, p. 19; City’s Reply Brief, p. 10.

²⁴ PD, p. 62.

²⁵ PD, p. 63.

²⁶ PD, p. 63 (referencing “RT 1456”).

²⁷ City’s Testimony, p. 17.

V. There Is Data to Determine LCR Effectiveness of Preferred Resources

The PD states that there is no “data to determine LCR effectiveness for uncommitted energy efficiency, energy storage, ‘second contingency’ demand response or total ‘second contingency’ solar PV.”²⁸ Contrary to the PD findings, the City has performed analysis of the effectiveness of preferred resources and determined that DG modeled in proportion to substation loads in the Western Los Angeles Basin LCR sub-area²⁹ is over 70%³⁰ effective in reducing the LCRs as compared to coastal resources, which are more optimally located.

VI. The City’s Study Did Analyze the Impacts of the Greater SONGS Study Area

The PD states, “The record shows that Redondo Beach only studied the Western Los Angeles Basin and did not perform a study to analyze the impacts on the greater SONGS study area. We agree with SCE that Redondo Beach’s study is incomplete in this regard.”³¹ The PD misinterprets the City’s study. The City’s study is complete and has considered both Los Angeles Basin and San Diego area LCRs. As a matter of fact, it is impossible *not* to consider an area that is part of a power flow analysis. The question that the PD needs to answer is whether the City’s proposed solution works to mitigate the possible overload under the worst N-1-1 contingency identified by the CAISO. That answer is “yes.”

To prove that the City’s solution met LCRs for the SONGS area (both the Los Angeles Basin and San Diego areas), the City provided a supplemental analysis that, based on a request by SCE, was stricken due to the timing of the supplemental analysis. Even without the supplemental analysis, however, it is possible to determine that the City’s solution satisfied all applicable LCRs. The City’s analysis was performed in two steps: (1) adding enough generation in the San Diego area to meet the reliability needs of the San Diego area (which are determined by the same N-1-1 contingency as for the larger SONGS LCR area), and then (2) determining the generation needed to meet the Western Los Angeles Basin LCR under the most critical contingency condition for that LCR sub-area.³²

²⁸ PD, pp. 71 and 75.

²⁹ City’s Testimony, p. 17.

³⁰ The CAISO shows that 2460 MW of coastal gas-fired generation would satisfy LCRs in the Los Angeles Basin. The City’s results indicated that about 2000 MW of distributed generation plus 1000 MW of coastal gas-fired generation could accomplish the same thing. So, $2460/(2000+1000)=73\%$.

³¹ PD, p. 79.

³² City’s Reply Brief, p. 5-6.

Additionally, contrary to the PD, the City’s study does not, and the PD provides no examples of how the City “rel[ies] on interpretations of N-1-1 contingencies that are at odds with the ISO’s studies....”³³ The City has interpreted the N-1-1 contingencies in exactly the same way as the CAISO, SCE and SDG&E.

VII. The Most Effective Locations for Mitigating the Critical N-1-1 Contingency in the Los Angeles Basin Are in Places other than Redondo Beach

The PD states, “At the same time, we agree with ORA’s observation that it may be possible to extend OTC deadlines if it is necessary to ensure reliability. Any such action will occur through the appropriate process.”³⁴ The PD should acknowledge that the most electrically effective locations for mitigating the critical N-1-1 contingency for the Los Angeles Basin are the existing Huntington Beach OTC and Alamitos OTC power plant locations. The existing Redondo Beach power plant location is less effective. Locating new generation at the most effective locations reduces the amount of GFG procurement authorization that will be needed to meet capacity requirement as compared with less effective locations.³⁵

VIII. The Commission Should Not Allow Contingency Contracts for GFG

The PD leaves open the possibility that IOUs could enter into contingency contracts for GFG.³⁶ The City does not support SCE’s contingency contract proposal. In addition to the questions posed in the PD the following should be answered:

- How are SCE and SDG&E going to assure steel in the ground as opposed to a promise?
- Could marketers participate?
- Should the Commission, at this time, give implicit support to the permitting of more GFG?

Overall, the idea of contingency contracts for GFG is unattractive because options are generally more risky than hard commitments to the underlying assets. Furthermore, “options” come with a cost; no insurer would offer insurance if it was a great deal for the buyer. Finally, the City believes it is

³³ PD, p. 79.

³⁴ PD, p. 83.

³⁵ City’s Opening Brief, p. 7 (citing, CAISO LCT 2018 Draft Report, March 2013).

³⁶ PD, p. 99.

premature for the Commission to take any action that would have the effect of giving a competitive advantage to the development of additional GFG (which the proposed Contingency Contracts would appear to do).

IX. Conclusion

For all the foregoing reasons, the Commission should authorize SCE to procure an additional 1200 MW of preferred resources (including storage) in addition to the 800 MW of preferred resources authorized in Track 1 and make other changes as set forth in these comments.

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Appendix A

Findings of Fact, Conclusions of Law, and Ordering Paragraphs

Findings of Fact:

13. Other parties performed power flow models. The City of Redondo Beach’s modeling conformed to the requirements of the revised Scoping Memo. ~~While these~~ These studies were useful for analytical purposes, ~~they did not conform to the requirements of the revised Scoping Memo.~~
51. The incipient nature of energy storage resources, uncertainty about location ~~and effectiveness~~, and unknowns concerning timing provide ~~insufficient information~~ uncertainty at this time ~~to assess how and~~ to what extent energy storage resources can reduce LCR needs in the future. However, similar to distributed demand reduction and other distribution-level resources, the locational effectiveness of storage can be determined from power flow analysis.
55. It is likely that Commission programs and the marketplace will increase the amount of solar PV in the future. However, there is no specific data or analysis in the record to determine where solar PV will locate, or the impacts of solar PV on LCR needs. The City of Redondo Beach analyzed the ability of incremental solar PV additions to meet LCRs.
61. Redondo Beach’s study analyzed the entire SONGS service area and is incomplete because it does not analyze the entire SONGS service area. complete.
77. ~~Between~~ The ISO’s analysis indicates that between 67% and 80% of procurement needed to address LCR needs in the SONGS service area by 2022 must be in the Los Angeles Basin, which is in SCE territory. The remainder would be in the SDG&E service territory. Redondo Beach’s analysis shows that only 60% of the required procurement needs to be in the Los Angeles Basin.
82. D.13-02-015, Finding of Fact 30 continues to be valid: “It is necessary that a significant amount of this procurement level be met through conventional gas-fired resources in order to ensure LCR needs will be met.” In contrast, Redondo Beach’s solution determined that less than 50% of the LCRs need to be supplied by conventional gas-fired resources.
84. It is not necessary to require any specific incremental procurement for SCE from gas-fired resources, beyond that specified in D.13-02-015 and SCE should not procure any additional gas-fired resources beyond that specified in D.13-02-015. ~~However, expanding the range of potential gas fired procurement from 1,000 – 1,200 MW (per D.13-02-015) to 1,000 – 1,500 MW provides greater flexibility to SCE to meet reliability needs.~~ Requiring SCE to procure a larger amount of preferred resources will provide more flexibility in meeting the reliability needs than gas-fired generation, because preferred resources can be added in smooth increments with a much shorter lead time.
94. The effectiveness of new generation at the Huntington Beach and Alamitos generating stations in mitigating the critical N-1-1 contingency conditions is higher than new generation at the Redondo Beach generating station.

Conclusions of Law:

20. While the LCR effect of potential energy storage resources ~~cannot be quantified~~ is not known at this time, the targets and requirements of D.13-10-040 lead to a conclusion that energy storage resources will reduce LCR needs in the SONGS service area to some extent in the future. Given assumed locations, power flow modeling can be used to quantify the LCR effect of storage similar to how the CAISO determined the LCR effects of EE and DG.
24. ~~It is too speculative to make any changes to the ISO study results to account for solar PV.~~ It is possible to make changes to the ISO study results to account for incremental solar PV, incremental demand response and incremental Combined Heat and Power, similar to the way the CAISO accounted for EE.
34. Authorizing a procurement range takes into account a) uncertainties about supply and demand conditions; b) the ability to process new information during the procurement process; c) the need to provide the utilities with flexibility to procure resources which may only be available in large increments; d) increases in requirements to procure preferred resources (as discussed below); ~~and~~ e) the need to provide utilities and the Commission with the ability to protect ratepayers by not forcing certain less economic procurement decisions; and f) recognition in the "Loading Order" that preferred resources may be selected over other resources even if preferred resources are more expensive.
39. Consistent with D.13-02-015, it is reasonable to provide a level of flexibility to SCE and to ensure procurement consistent with ISO reliability standards by ~~expanding~~ augmenting the range of procurement specified in D.13-02-015 for gas-fired resources, by preferred resources and energy storage.

Ordering Paragraphs:

1. In combination with procurement authorizations totaling 1,400 to 1,800 Megawatts (MW) in Ordering Paragraph 1 of Decision 13-02-015, Southern California Edison Company is authorized to procure between ~~2,600~~ 1,900 and ~~2,500~~ 3,000 MW of electrical capacity in the Los Angeles Basin local reliability area to meet long-term local capacity requirements by the end of 2021. Procurement must abide by the following guidelines and table:
 - a. ~~At least~~ No more than 1,000 MW, ~~but no more than 1,500 MW~~, of local capacity ~~must be~~ from conventional gas-fired resources, ~~including~~ excluding combined heat and power resources;
 - b. At least 50 MW of local capacity must be procured from energy storage resources (as defined in Decision 13-10-040);
 - c. At least 550 MW of local capacity must be procured from preferred resources consistent with the Loading Order of the Energy Action Plan (beyond the requirement of subsection b of this Ordering Paragraph). Bulk energy storage and large pumped hydro facilities shall not be excluded.
 - d. ~~At least 300 MW, but no more than 500 MW~~, Up to 1200 MW of local capacity, beyond the minimum amounts specified in subparagraphs (a), (b) and (c), must be procured and can be from any resource, other than conventional gas-fired generation, able to meet local capacity requirements.
 - e. Subject to the overall cap of ~~2500~~ 3000 MW, any additional local capacity, beyond the amounts specified in subparagraphs (a), (b), (c) and (d), may only be procured through preferred resources (including bulk energy storage and large pumped hydro facilities) consistent with the Loading Order of the Energy Action Plan. Such preferred resources shall be in addition to preferred resources already required by the Commission to be procured or obtained through decisions in other relevant proceedings, and/or energy storage resources.

Resource Type	Track 1 LCR Resources (D.13-02-015)	Additional Track 4 Authorization	Total Authorization
Preferred Resources Minimum Requirement	150 MW	400 MW	550 MW
Energy Storage Minimum Requirement	50 MW		50 MW
Gas-fired Generation (including <u>excluding</u> CHP) Minimum Requirement	1000 MW		1000 MW
Optional Additional: Only From Preferred Resources /Energy Storage	Up to 400MW	Up to 800 MW	Up to 400 MW <u>1200 MW</u>
Additional from Any Resource	200 MW	100 to 300 MW	300 to 500 <u>200³⁷</u> MW
Total Procurement Authorization	1400 to 1800 MW	500 to 700 <u>1200 MW</u>	1900 to 2500 2600 to 3000 MW

³⁷ Assumes preferred resource procurement.

2. San Diego Gas & Electric Company is authorized to procure between 500 Megawatts (MW) and ~~700~~800 MW of electrical capacity in its territory to meet long-term local capacity requirements by the end of 2021. Procurement must abide by the following guidelines:
 - a. At least 25 MW of local capacity must be procured from energy storage resources (as defined in Decision 13-10-040);
 - b. At least ~~175~~ 320 MW of local capacity must be procured from preferred resources consistent with the Loading Order of the Energy Action Plan (beyond the requirement of subparagraph (a) of this Ordering Paragraph). Bulk energy storage and large pumped hydro facilities may be procured through preferred resources in addition to the 320 MW subject to the overall 1100 MW authorization. ~~shall not be excluded from this category.~~