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 (Filed March 22, 2012)

REPLY TO RESPONSES TO PETITION FOR EXPEDITED MODIFICATION OF DECISION 13-02-015

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Pursuant to Rule 16.4(g) of the Commission's Rules of Practice and Procedure, Terra-Gen Power, LLC submits this reply to responses to Terra-Gen's petition for expedited modification of Decision (D.) 13-02-015, the decision in Track 1 of this proceeding. Permission to reply was granted by Administrative Law Judge David Gamson on June 24, 2014.

Terra-Gen's reply will focus on assertions made in the responses of Southern California Edison Company (SCE), the California Independent System Operator Corporation (CAISO), and Caithness Energy, L.L.C. (Caithness).

In this reply, Terra-Gen will address five main points:

- SCE's use of locational effectiveness factors (LEFs) in its evaluation of the bids submitted in the Track 1 Request for Offers (RFO) authorized by D.13-02-015 was fundamentally different from the use contemplated in that decision and described in SCE's Procurement Plan. SCE transformed its use of LEFs from a qualitative factor affecting the value of a project to

an eligibility requirement that eliminated shortlisted projects from further consideration, regardless of their value.

- If LEFs are as determinative of value as SCE claims, then the logical extension of SCE's argument is that procurement should occur in San Diego, rather than in the Southwest Los Angeles (LA) Basin zone. SCE's resistance to this conclusion undermines its position on the use of LEFs.
- SCE's presumption that **all** of the 1400 to 1800 MW of procurement authorized for SCE in the Track 1 decision, plus **all** of the additional 500 to 800 MW authorized for SCE in the Track 4 decision (D.14-03-004), must be sited in the Southwest LA Basin in order to address the identified contingency is not supported and has practical implications that may threaten reliability.
- SCE has failed to explain why it appears to use LEFs differently in its evaluation of preferred versus conventional projects. Effectiveness is not a matter of technology, and all supply sources should be treated the same.
- The lack of transparency about the determination and application of LEFs raises concerns about the legitimacy of the procurement process, the validity of the selections made by means of this process, and the potential additional costs for ratepayers due to inaccurate procurement decisions.

I.
SCE FUNDAMENTALLY AND IMPROPERLY CHANGED ITS USE OF LEFs AFTER BIDS WERE SUBMITTED

Both SCE and Caithness cite an example from SCE's Procurement Plan that was supposed to illustrate how SCE would use LEFs in its evaluation of bids in the Track 1 RFO:

> To ensure that LCR procurement addresses the CAISO identified local area reliability concern, SCE will calculate forecasted RA values (a component of the NPV) by adjusting the RA MW quantities by the difference between the CAISO-identified maximum LEF in a sub-area and *the assessed effectiveness factor of each offer*. For example, assume there is an offer with 100 MW of contract capacity, 60 MW of countable RA capacity, interconnecting at a location with an LEF of 30%, and based on the most up-to-date effectiveness ratings, is in a local area with a maximum LEF of 50%. In this example, the contract payments will be based on 100 MW, LCR counting MW benefits will be based on 60 MW, and the RA value component of the offer's NPV will be calculated assuming 48 MW (60 MW x (1-(50% - 30%)). Adjusting the RA MWs that receive RA value in the NPV calculation by the LEFs will direct procurement towards projects that more effectively address the CAISO-identified reliability concern.[1]

This example is consistent with how Terra-Gen and presumably other bidders understood LEFs would be used, *i.e.,* the LEF associated with each offer would be used to determine the Resource Adequacy (RA) value as part of the Net Present Value (NPV) assessment of a project, but that assessment would also consider factors like price, viability, status of interconnection, permitting status, Local Capacity Requirements counting value, and similar quantitative and qualitative considerations.[2] Thus, LEFs were to be **one factor** in an array of considerations that led to an assessment of the overall value of a project.

If SCE had acted consistently with the description of its Procurement Plan, when SCE decided to use different LEFs it would have informed bidders of the new LEFs, described how they were calculated, and allowed bidders to submit final bids that reflected the new LEFs. SCE would then apply the LEFs to evaluate the bids in the manner described above. Instead of

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[1] Procurement Plan, p. 47 (emphasis added); see SCE's Response, p. 4, fn.6, Caithness's Response, p. 10.
[2] SCE and Caithness fault Track 1 bidders for not foreseeing that LEFs would change with the retirement of SONGS Units 2 & 3. However, the CAISO notes that in its testimony issued on August 5, 2013, it "clearly explained the change from thermal to voltage stability constraints," which was the basis for its shift to zonal LEFs (CAISO Response, p. 4). That testimony was issued well before SCE submitted its Procurement Plan to the Energy Division and over a month before SCE issued its RFO. Apparently the significance of the CAISO's testimony escaped SCE.

following this approach, however, SCE now appears to use LEFs as an eligibility screen, *i.e.,* if a project is not interconnected to substations located in the Southwest LA Basin zone, it will no longer be considered, regardless of the value it may have when other evaluation factors are considered.

It is this transformation of the use of LEFs that is at the heart of Terra-Gen's petition. Nothing in SCE's Procurement Plan or other material that was available to bidders hinted that LEFs would be an eligibility screen; in fact, LEFs were identified as part of the qualitative analysis, not as an eligibility requirement.[3] It's doubtful that bidders would have committed the millions of dollars required to present a credible offer if they had known in advance of this threshold criterion.

In addition, this use of LEFs is contrary to the requirements stated in the Track 1 decision. In D.13-02-015, the Commission ordered SCE to "use existing Resource Adequacy (RA) program rules . . . to assess the effectiveness of proposed generation solutions for meeting the local capacity requirements need established in this Order."[4] The Commission did not authorize SCE to use LEFs to disqualify shortlisted projects from further consideration.

II.
OVEREMPHASIS ON LEFs LEADS TO INCONSISTENT POSITIONS AND RESULTS

Although SCE agrees with Terra-Gen that "LEFs are highly variable," it nevertheless continues to place a nearly unshakable faith in the CAISO's changing calculations of LEFs. SCE maintains this faith despite the lack of transparency surrounding the CAISO's calculation of LEFs and its development of two, and later three, zones. Even though Terra-Gen has asked the CAISO to explain the development of the zones in the West LA Basin subarea, the

[3] Transmittal Letter, p. 19. Conversely, one condition of eligibility was that a project had to be connected to one of 27 "acceptable" substations, most of which SCE no longer considers acceptable.
[4] D.13-02-015, Ordering Paragraph 3, p. 131.

CAISO has failed to provide an adequate explanation. In its response, the CAISO asserts that its zonal methodology is "reasonable and appropriate"[5] but still fails to provide any explanation to support its assertion. The CAISO has still not publicly revealed how it determined which substations would be include in each zone, why and how it switched from two zones to three zones, how it calculated an aggregated LEF for all the substations within a zone, and similar questions.[6]

On one key point, however, SCE appears not to trust the CAISO's results. SCE attempts to justify its exclusive focus on the Southwest LA Basin by reproducing **part** of a table prepared by the CAISO in its April 23, 2013 "Clarification to the ISO Board-Approved 2013-2014 Transmission Plan: Locational Effectiveness Factor Calculations in the LA Basin Area" (Appendix A to SCE's Response). The table, shown on p. 11 of SCE's response, appears to show varying LEFs for three zones of the LA Basin subarea under three different scenarios. SCE considers Scenario A, the scenario used in the CAISO's 2013-2014 Transmission Planning Process, "an extremely conservative outcome."[7] Scenario C, on the other hand, is "an extremely optimistic outcome,"[8] while Scenario B is "the middle case."[9]

However, the table in the CAISO's Clarification has an additional row that is omitted from SCE's response.[10] The complete table from the CAISO's Clarification is reproduced below.

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[5] CAISO's Response, p. 6.
[6] The CAISO's statements that under its prior evaluation "the variability of effectiveness factors within the LA Basin was relatively small" (CAISO's Response, p. 7) is inconsistent with the CAISO's LEFs shown in SCE's Procurement Plan. In the Procurement Plan (p. 7), the LEFs range from -0.3 to 0.56, which is a wider variation than two of the three scenarios presented in support of the CAISO's zonal analysis (see SCE's Response, p. 11).
[7] SCE's Response, p. 10.
[8] SCE's Response, p. 10.
[9] SCE's Response, p. 11.
[10] SCE's Response, Appendix A, p. 2.

Complete Table 1 from CAISO Clarification

SONGS Study Area		Scenario A	Scenario B	Scenario C
LA Basin Area	Northwest	0%	< 13.6%	56.9%
	Western Central	not studied	34.4%	66.6%
	Southwest	50%	71.7%	100%
San Diego Area	***San Diego***	***100%***	***100%***	***100%***

The omitted row shows that for all scenarios, generation interconnected to substations in a certain portion of the San Diego area have a 100% LEF, compared to a 71.7% LEF for the Southwest LA Basin under Scenario B. That means that under the scenario SCE considers most credible, addressing the CAISO-identified contingency will require procurement of roughly 40% **more** MW from resources located in the Southwest LA Basin than from resources located in San Diego. According to SCE's arguments, fewer MW procured should also mean lower costs for ratepayers and lower greenhouse gas emissions (to the extent that procurement of gas-fired resources is reduced).

SCE will undoubtedly object that its Track 1 authority is limited to the West LA Basin subarea, but that position only leads to additional inconsistencies. While it is true that the Track 1 decision authorizes SCE to procure resources "in the West Los Angeles sub-area of the Los Angeles basin local reliability area,"[11] it is also true that that authorization was based on a different critical contingency than the one SCE now cites as the basis for its decision to use LEFs as an eligibility threshold. If the changing critical contingency gives SCE license to change both the LEFs and the way it uses LEFs, why does SCE limit its procurement to the Southwest LA when resources in San Diego are even more effective at addressing the new critical contingency

[11] D.13-02-015, Ordering Paragraph 1, p. 130.

(assuming that LEFs are reliable for these purposes)? Why hasn't SCE petitioned the Commission to modify the Track 1 decision to authorize procurement in San Diego? In light of the changed critical contingency, perhaps the Commission should have considered acting on its own motion to address the critical contingency through procurement by SDG&E rather than SCE, instead of attempting to use the Track 1 framework to mitigate the Track 4 contingency.

SCE's position leads to other contradictions. For example, in the Procurement Plan approved by the Energy Division and resulting RFO documents, SCE provided nodal LEFs for 27 substations that were identified as "acceptable" for purposes of the bids. The LEFs ranged from less than zero to a high of 56% (contrary to CAISO's assertion that "the variability of effectiveness factors within the LA Basin was relatively small"). If locational effectiveness was to be a threshold criterion, why didn't the Energy Division, which approved the Procurement Plan, or SCE state a minimum effectiveness requirement for bid eligibility?[12] The plain answer is that locational effectiveness was never intended to be a threshold criterion, but instead was to be one factor in the overall bid evaluation process. This conclusion is supported by (1) SCE's description of a valuation methodology to account for locational effectiveness differences and (2) the fact that the Commission's Order never directed SCE to procure solely at the most effective location, but only to include the most up-to-date LEFs when SCE issued its RFO and to adjust the valuation of a bid to reflect a project's relative effectiveness.

If SCE's primary goal is to procure the minimum number of MW needed to address the identified contingency, why didn't SCE use nodal rather than zonal LEFs to evaluate projects connected to substations within the geographic target area? SCE's crude assumption is

[12] It is also interesting to note that in the initial RFO, not only was a minimum threshold not identified, but the highest LEF for any substation was 56%, which appears to be below the minimum threshold that is now being used.

that all of the nodes in an artificially created zone are equally effective. By contrast, a more granular nodal analysis would ensure that the minimum MW are procured.

Neither SCE nor the CAISO provides any evidence that all nodes within the Southwest LA Basin zone (or within the other zones created by the CAISO) are equally effective, but that is the assumption that is now guiding SCE's procurement decisions. In fact, both the LEFs provided by SCE in the Procurement Plan and the additional sets of LEFs SCE presented at the May 20, 2014, Clean Tech OC public meeting show a significant variation in LEFs among nodes within the Southwest LA Basin zone.

The table below reproduces the four sets of LEFs presented by SCE.

Generation Site	Effectiveness to Resolve Critical Violations			
	Serrano	Vincent	Johanna	Viejo
Huntington	***27%***	***10%***	***-17%***	***11%***
Alamitos	***24%***	***13%***	***-7%***	***4%***
Lighthipe	19%	18%	-5%	3%
Rio Hondo	14%	24%	-4%	2%
Mesa	15%	20%	-4%	2%
Johanna	***24%***	***10%***	***72%***	***15%***
Santiago	***21%***	***9%***	***58%***	***19%***
San Onofre	***8%***	***7%***	***35%***	***33%***
North SD	7%	6%	34%	32%

Further, some of the LEFs within the Southwest zone are negative for a particular contingency. If LEFs are to be given such importance in the final selection of resources, the

Commission should not endorse SCE's use of such coarse and inaccurate effectiveness information to make billion-dollar procurement decisions. These inconsistencies highlight the mercurial[13] and non-transparent manner in which the initial Procurement Plan was developed and this RFO is being conducted.

SCE concludes this portion of its response by arguing, "The simple, commonsense approach for SCE is to follow the Commission's direction and focus its procurement of new resources in the most effective area determined by CAISO's most recent studies."[14] Contrary to SCE's conclusion, however, the most effective area determined by CAISO's most recent studies is San Diego, not the Southwest LA Basin zone. If SCE really believes that LEFs should carry so much weight in its procurement decisions, the logical outcome would be to target procurement in San Diego to most effectively address the critical contingency.

A better position, however, it to recognize that LEFs are highly volatile, and they should not be a determinative factor or eligibility criterion in the evaluation of projects that are considered to meet long-term need. In light of their changeable nature, LEFs should be considered only as one factor in the valuation of the project, consistent with how SCE described their use in the Procurement Plan. By focusing so intently on LEFs, SCE risks overlooking other valuable attributes of projects, such as viability and access to Emission Reduction Credits, that should be considered as part of a least-cost/best-fit approach to procurement.

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[13] In an effort to provide a well-structured, viable project, Terra-Gen has incurred over $12 million in development costs specifically to address the need authorized by the Commission in Track 1, and Terra-Gen incurred $9 million of exposure *after* the shortlist selections were made. Terra-Gen would not have made such material financial commitments had it known that the rules would be modified in the middle of the solicitation process.

[14] SCE's Response, p. 12.

Caithness and SCE apparently fail to see the irony of their accusation that Terra-Gen's requests fail to strike a reasonable balance between reliability, reasonable rates, and a clean environment. SCE's conversion of LEFs from a valuation criterion to an eligibility threshold denies ratepayers access to a broader set of alternative supply solutions, including preferred resources, from a wider geographic area. Balance, in the form of a bid valuation that considers **all** of the key performance attributes of a project, and not merely its LEF for a single contingency, is the essence of Terra-Gen's petition.

Moreover, SCE's embrace of the CAISO's zonal approach could increase both ratepayer costs and adverse environmental effects. Terra-Gen's analysis demonstrates that all else being equal (price, technology, and performance), procurement of projects connected to the Alamitos substation would cost ratepayers 20% more than procuring resources in San Diego. The zonal approach masks the differences between the LEFs of substations within the zone, and all substations are erroneously assumed to have equal effectiveness. At a minimum, the CAISO should calculate the LEFs for substations within the Southwest LA Basin to ensure that the least-cost/best-fit projects are identified based on consistent and accurate data; for a more thorough consideration of the least-cost/best-fit resources, the CAISO should perform a detailed nodal analysis for at least those substations that have a valid interconnection request at that location.

Terra-Gen reiterates that the CAISO's LEF modeling contains a methodological error. Under the CAISO's methodology, the addition of resources at more effective nodes, like Viejo and Santiago, in the Southwest LA Basin has the two-fold effect of (1) masking the impact of other lesser effective nodes (like Alamitos) within the zone and (2) bolstering the effectiveness of the Southwest LA Basin zone. This results in an apples-to-oranges comparison in the CAISO's analysis when the LEFs of the Southwest LA Basin, Western Central LA Basin

and Northwestern LA Basin zones are compared for relative effectiveness. In order to provide an apples-to-apples comparison between zones, the CAISO should have modelled all of the resources at the Alamitos node (located in the Southwest LA Basin zone), similar to what was done at the Center node (located in the Western Central LA Basin zone). There are no transmission or other practical constraints preventing the CAISO from modeling the resources at Alamitos, which will result in a true measure of relative effectiveness.

The arbitrary resource analysis and zonal boundary determination underscores the lack of transparency and accountability in the procurement process and reaffirms the need for a stakeholder process to properly vet the calculation and application of LEFs. The approach recommended and implemented by WHEnergy Consulting results in a clear determination of the effectiveness at any node, and allows for an apples-to-apples comparison between nodes, which can then be used to assemble the least-cost/best-fit portfolio for the benefit of ratepayers. Attachment A to this reply provides a comparison of the results of WHEnergy Consulting's analysis and the CAISO's analysis.

Moreover, the CAISO has not explained its reluctance to perform nodal LEF studies. If the CAISO is concerned about resource limitations, Terra-Gen can report that its independent consultant, WHEnergy Consulting Inc., developed the modeling tool that is currently being utilized by the CAISO to analyze LEFs, and as a result it took the independent consultant only a few days to run a complete nodal analysis once the CAISO model was made available for review and once he worked through the modeling assumptions and calibration with the CAISO.[15] In order to assure a balanced procurement approach, the CAISO should complete

[15] WHEnergy Consulting is an independent consultant hired by Terra-Gen to perform detailed nodal analysis for the CAISO identified N-1-1 voltage collapse contingency. The sole proprietor of WHEnergy is Mr. Chuck Wu. Mr. Wu is the original developer of the post-transient tool used by the CAISO for modeling system contingencies.

a detailed nodal analysis for at least those substations (nodes) that have either an existing generator or a valid interconnection request. In the event the CAISO does not have the resource available to complete this study, the Commission should engage WHEnergy Consulting Inc. or another credible independent consultant to complete the analysis with agreed upon assumptions and using the results of the procurement proceeding.

III.
ONCE THE IDENTIFIED CRITICAL CONTINGENCY IS MITIGATED, ADDITIONAL LOCATIONS SHOULD BE CONSIDERED TO ADDRESS OTHER NEEDS

Even if we assume that SCE is acting properly by focusing all of its procurement activities on the Southwest LA Basin zone, it is far from clear that all of the up to 2500 MW of the procurement authorized in Track 1 and Track 4 should be located in that zone.

Track 1 of this proceeding was focused on the local capacity requirements needed to respond to the "retirement of thousands of MW from the current once-through cooling generators due to compliance with State Water Quality Control Board regulations."[16] Track 4 focused on the local capacity requirements resulting from the retirement of SONGS Units 2 and 3. The Track 1 decision authorized SCE to procure up to 1800 MW to respond to the retirement of once-through cooling units, while the Track 4 decision authorized SCE to procure up to an additional 700 MW and SDG&E to procure up to 800 MW to address the effects of the SONGS retirements.

SCE's focus on resources located in the Southwest LA Basin zone reflects the fact that Track 4 and the 2013-2014 Transmission Plan identified a different critical contingency than the contingency identified in Track 1. Specifically, both Track 4 and the 2013-2014 Transmission Plan identify the critical contingency as the sequential loss of the ECO-Miguel

[16] D.13-02-015, p. 2.

section of the Southwest Powerlink 500 kV line and the Ocotillo Express-Suncrest section of the Sunrise Powerlink.[17]

But SCE does not need to locate **all** of its authorized 2500 MW in the Southwest LA Basin zone (in addition to up to 800 MW procured in San Diego by SDG&E) in order to mitigate the identified critical contingency. Using the calculations SCE presented in its response, only 1,931MW [(13.6/100)x 14,200] would be necessary to solve the contingency if new resources were sited in San Diego where they are most effective. Further, WHEnergy Consulting's analysis identifies a total need of only 1,400 to 1,670 MW of new generation is needed to satisfy the N-1-1 voltage collapse contingency. The detailed analysis was included as Attachment B to SCE's Response to Terra-Gen's Petition, and a summary is presented in the following table.

Nodal LEF Results for LA Basin Area

Node/Substation	CAISO Sub-Area	Incremental Resource Addition (MW)(1)	Total Resource Addition (MW)(2)	Nodal LEF (WHEnergy analysis)	Sub-Area LEF (CAISO analysis)
Center	Western Central LA	1070	1670	75%	67%
Alamitos	Southwest LA	990	1590	81%	100%
San Luis Rey	SDG&E	800	1400	100%	100%
	(1) Resource addition is incremental to 600 MW of preferred resources assumed distributed equally across Viejo, Santiago, and Johanna substations in Orange County. These preferred resources are meant to replicate the CAISO base resource additions described in the CAISO report for the Southwest LA Basin subarea. (2) Total Resource is Incremental Resource Addition plus base 600 MW preferred resources assumed in the Southwest LA Basin subarea. (3) This table represents Scenario C in the CAISO's 2013-2014 Transmission Planning Process. The transmission plan approved by the CAISO Board and utilized by the CAISO in its current 2014-2015 TPP and Generator Interconnection study process (Cluster 6 Phase-2 and Cluster 7 Phase-1). Further, on June 5, 2014 CAISO announced the results of its continued analysis on the specific technology to be implemented for the Imperial Valley flow controller thus removing prior uncertainty that the CAISO seems to have alluded to in its April 23 Clarifications.				

[17] D.14-03-004, pp. 37, 49, 127; CAISO Response, p. 3.

Since not all of the 2500 MW are needed to mitigate the identified critical contingency, procurement from resources in the Southwest LA Basin should be limited to only the MW needed to address the contingency. The remaining authorization should then be used to address the retirement of once-through cooling plants, as Track 1 contemplated, or to mitigate the next critical contingency once the Track 4 contingency is resolved.

In addition, focusing all of the new gas-fired generation procurement in the Southwest LA Basin will result in an overconcentration of resources in a small geographic area, allowing other development criteria to play an important role (for example, the need for Coastal Emission Reduction Credits (ERCs)). An increased need for Coastal ERCs could lead to controversial and unnecessary maneuvers to press the South Coast Air Quality Management District (SCAQMD) to allow access to the District's bank of credits that would otherwise be available for essential services. In the past, tapping the District's banked credits for new generation was extremely controversial and resulted in protracted litigation and ultimately a failure to access the banked credits. If SCE procures resources that depend on access to the SCAQMD's banked credits to operate, an inability of those resources to access those credits could lead to the reliability problems that Track 1 and Track 4 were intended to address.

IV.
LEFs SHOULD BE USED CONSISTENTLY FOR ALL SUPPLY RESOURCES

Terra-Gen continues to be concerned about the indications that SCE is using a different set of LEFs for preferred resources than for conventional resources, as discussed on page 10, footnote 16 and Attachment B of Terra-Gen's petition. SCE's failure to either deny or clarify this concern only increases Terra-Gen's suspicion that SCE is not using the same LEFs, and is not using LEFs in the same way, for preferred resources as opposed to conventional resources. LEFs are a function of location in relation to the transmission system, not generation

or other supply technology. There should be no discrimination among technologies in the application of LEFs, and preferred resources should be evaluated in relation to the same critical contingency as conventional resources. If SCE is using different LEFs for preferred resources, as SCE's presentation indicates, that not only underscores the fragility of LEFs and the imprudence of making procurement decisions on such a volatile basis, but also demonstrates an inconsistency in how the RFO is being conducted.

If, however, SCE is using LEFs for preferred resources in the same way it is now using LEFs for conventional resources, then the procurement of preferred resources is also being restricted to a small geographic area. Instead of imposing this restriction on the procurement of preferred resources, SCE should be consistent and use the methodology described in the Procurement Plan to include LEFs as part of the valuation of a project, not as a threshold eligibility requirement. In this way, the extreme geographic constraints introduced by SCE's changed approach would be eliminated, allowing for a larger target area for procurement while still considering the relative electrical effectiveness of different projects. This would allow for a consideration of more preferred resources. (SCE's apparent use of a different sets of LEFs for preferred resource procurement suggests that SCE is aware of this problem and is resolving the issue by simply using different LEF criteria for different technologies.)

V.
TRANSPARENCY IS OF PARAMOUNT IMPORTANCE IN A LEGITIMATE PROCUREMENT PROCESS

Concerns about a lack of transparency about the determination and application of effectiveness factors is a theme that runs through this reply, and this lack of transparency raises concerns about the legitimacy of the procurement process and the validity of the selections made by means of this process. This theme is echoed in the recent Petitions for Modification relating to SDG&E's Track 4 procurement plan. The need for transparency in the procurement process,

from the development of the procurement plan, through the evaluation of bids and the final selection of projects, is even more relevant and applicable to the current procurement processes in light of the permanent shutdown of SONGS and its reverberating effect on system contingencies and resource planning. Now, more than ever, the Commission should ensure that the procurement process is transparent, so that all parties may have faith in the fairness of the process and the legitimacy of the projects selected through that process.

VI.
CONCLUSION

For the reasons stated in this reply and in Terra-Gen's petition for modification, Terra-Gen respectfully urges the Commission to reject the opposing responses and to grant Terra-Gen's petition for expedited modification.

Respectfully submitted, June 26, 2014.

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ATTACHMENT

Comparison of CAISO Zonal Analysis to WHEnergy Nodal Analysis

The table below represents a comparison of analysis and results between the broad brush CAISO assessment of LEFs and the nodal specific assessment employed by Terra Gen's third party independent consultant WHEnergy Consulting. This comparative analysis highlights two important distinctions:

- Nodal analysis highlights how LEFs are not homogenous within a zone and therefore a detailed nodal analysis is necessary to appropriately consider the value contribution of a resource in mitigating a specific contingency
- The highlighted text below identifies how the CAISO applied different resource additions across multiple nodes. A resource's contribution to mitigating a specific contingency can only be isolated and measured if supply is added only to node in question while holding all other variables constant. By simultaneously varying other factors, the true cause and effect is masked of the specific resource/node being analyzed. The CAISO analysis did adequately isolate the effect of a new incremental resource.

	CAISO Analysis – Inconsistent Resource Assumptions		WHEnergy Analysis – Consistent Resource Assumptions	
	Scenario C LEF	**Incremental Resource Additions**	**Scenario C LEF**	**Incremental Resource Additions**
Northwest LA Basin	56.9%	• Resource additions at Redondo and El Segundo to satisfy contingency	Not studied	Not studied
Western Central LA Basin	66.6%	• All resource additions at Center substation to satisfy contingency	Center Substation LEF: 75%	• Added 1,070MW at Center to resolve contingency
Southwest LA Basin	100%	• 2/3 Resource addition at Alamitos and • 1/3 evenly distributed among Johanna, Santiago and Viejo to satisfy contingency	Alamitos Substation LEF: 81%	• Added 990MW at Alamitos to resolve contingency
San Diego Area	100%	• Unclear from CAISO report as to incremental resources need to resolve the contingency	San Luis Rey LEF: 100%	• Added 800MW at San Luis Rey to resolve contingency
Base Assumptions Applied	• San Diego – 945MW of resource assumed (45MW Escondido, 300MW Pio Pico, 600MW Track 4 Authorization) • 200MW preferred/storage in SDG&E		• 200MW each at Johanna, Santiago, and Viejo (based on 1/3 evenly distributed among Johanna, Santiago and Viejo to satisfy contingency per CAISO clarification). This is a reasonable assumption given the loading order preference. • San Diego – 945MW of resource assumed (45MW Escondido, 300MW Pio Pico, 600MW Track 4 Authorization) • 200MW preferred/storage in SDG&E	

Source: CAISO Clarification published April 23, 2014