

Docket:	R.12-03-014
Witness:	Bill Powers and Julia May
Exhibit No.:	

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

R.12-03-014

(Filed March 22, 2012)

APPENDIX

**DATA REQUESTS RELIED ON IN THE TESTIMONY OF
BILL POWERS AND JULIA MAY
ON BEHALF OF
THE CALIFORNIA ENVIRONMENTAL JUSTICE ALLIANCE**

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

JUNE 25, 2012

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Response of the California Independent System Operator Corporation to the California Environmental Justice Alliance Data Requests (“CEJA Requests 1”)

Request No. 1.

Please explain what input assumptions the OTC and AB 1318 reliability studies summarized on pages 237-239 and 247-249 in the 2011-2012 ISO Transmission Plan assumed for uncommitted energy efficiency for all local areas in the LA Basin and the Big Creek / Ventura Area.

ISO RESPONSE TO No. 1

The ISO has no basis for expecting that uncommitted energy efficiency can be counted upon for meeting local reliability needs beyond the committed programs that were included in the CEC’s officially adopted demand forecast.

Request No. 2.

Please explain what input assumptions the OTC and AB 1318 reliability studies summarized on pages 237-239 and 247-249 in the 2011-2012 ISO Transmission Plan assumed for demand response for all local areas in the LA Basin and the Big Creek / Ventura Area.

ISO RESPONSE TO No. 2

Demand response was not modeled in the analysis, but it could be used to reduce the replacement OTC needs if the demand response is in electrically equivalent locations, and if they materialize and are determined to be feasible for mitigation.

Request No. 3.

Please explain what input assumption the OTC and AB 1318 reliability study referenced on page 256 of the 2011-2012 ISO Transmission Plan used for uncommitted energy efficiency for all local areas in the LA Basin. In other words, please provide the input assumption for energy efficiency used in that sensitivity analysis. Please provide and state the basis for this assumption.

ISO RESPONSE TO No. 3

The ISO is currently drafting an addendum to Section 3.4.2 of the 2011-2012 ISO Transmission Plan to update the results to include combined heat and power information received after publishing the report and to clarify the study assumptions. The ISO will post the updated results and notify the parties as soon as the results become available.

Request No. 4

4. Please explain what input assumption the OTC and AB 1318 reliability study referenced on page 256 of the 2011-2012 ISO Transmission Plan used for demand response for all local areas in the LA Basin. In other words, please provide the input assumption for demand response used in that sensitivity analysis. Please provide and state the basis for this assumption.

ISO RESPONSE TO No. 4

Please see response to number 3.

Request No. 5

Please explain what input assumptions the OTC and AB 1318 reliability studies in the 2011-2012 ISO Transmission Plan assumed for incremental combined heat and power for all local areas in the LA Basin and the Big Creek / Ventura Area.

ISO RESPONSE TO No. 5

Please see response to number 3.

Request No. 6

Please explain what input assumptions the OTC and AB 1318 reliability studies in the 2011-2012 ISO Transmission Plan assumed for energy storage for all local areas in the LA Basin and the Big Creek / Ventura Area.

ISO RESPONSE TO No. 6

No new energy storage projects were assumed in the OTC studies for the LA Basin and the Big Creek / Ventura areas, and the ISO is not aware of any substantial planned or existing energy storage projects in those areas, that are included in the model.

Request No. 7

Please explain how transmission projects approved in the recent LCR study and contemplated in the next LCR study for the Ellis local area impact the local capacity need identified in the 2011-2012 Transmission Plan.

ISO RESPONSE TO No. 7

No transmission projects were approved in the 2013 LCR study, or in any LCR study. Updated results with the Del Amo-Ellis loop-in project approved in the 2011-2012 Transmission Plan have been included in the Robert Sparks testimony submitted for the LTPP.

Request No. 8

On page 229 of the 2011-2012 ISO Transmission Plan, CAISO describes the ability to assume 600 MW of either load curtailment or load transfer. Please whether state CAISO believes this mitigation is a feasible and reasonable scenario.

ISO RESPONSE TO No. 8

The ISO has had preliminary discussions with SCE and based on those discussions the ISO believes it is a reasonable assumption to base the 2021 local area generation needs on the proposed mitigation. However, we still need to obtain a cost and schedule for these upgrades from SCE.

Request No. 9

For the limiting constraints identified in the LA basin, has CAISO evaluated whether transmission projects could mitigate or eliminate the constraints? Has CAISO evaluated the potential of adding reactive support to reduce or eliminate a need in the identified areas? Please explain the results of any analysis that CAISO has conducted.

ISO RESPONSE TO No. 9

As described in Robert Sparks' Direct Testimony submitted in the LTPP, an existing SPS was identified that could eliminate the Ellis sub-area need, but due to the critical need for these units if SONGS were no longer available, the ISO does not recommend that this SPS be relied upon. In addition, the overall LA Basin need could be reduced by 2000 MW to 3000 MW by installing sub-transmission facilities and 500/230kV transformers to facilitate load transfers between bulk substations within the LA Basin LCR area. In the Moorpark sub-area the local capacity need could possibly be reduced by approximately 300 MW by installing a large amount of reactive support.

Request No. 10

For the Moorpark subarea in the Big Creek/Ventura area, has CAISO evaluated whether transmission projects could mitigate or eliminate the constraints? Has CAISO evaluated the potential of adding reactive support to reduce or eliminate the identified need? Please explain the results of any analysis that CAISO has conducted.

ISO RESPONSE TO No. 10

Please see response to number 9.

Request No. 11

For the Moorpark subarea in the Big Creek/Ventura area, when does CAISO believe a local capacity issue arises in this area? Has CAISO evaluated the impacts of currently proposed transmission upgrades for the area? Please explain the results of any analysis that CAISO has conducted.

ISO RESPONSE TO No. 11

There is currently a local capacity need in the Moorpark subarea.

Request No. 12

For the Western LA area, what system readjustment did CAISO evaluate after the single contingency (Serrano-Lewis #1)? If CAISO did not readjust the system after the first contingency, explain why.

ISO RESPONSE TO No. 12

Available generation was dispatched to protect against the second contingency.

Request No. 13

In the 2011-2012 ISO Transmission Plan, CAISO states that “[t]he most critical contingency for the Western sub-area is the loss of Serrano-Villa Park #1 or #2 kV line followed by the loss of the Serrano-Lewis 230 kV line or vice versa, which would result in the thermal overload of the remaining Serrano-Villa Park 230 kV line.”

- a) Has the CAISO evaluated whether transmission projects could mitigate this thermal overload? If so, please explain the results of the evaluation.

ISO RESPONSE TO No. 13 (a)

The ISO has requested information from SCE to explore the possibility of increasing the rating of the Serrano-Villa Park 230 kV line.

b) What is the rating of the Serrano-Villa Park line?

ISO RESPONSE TO No. 13 (b)
1518 MVA

c) Did CAISO evaluate a load drop to mitigate this constraint? If not, why not?

ISO RESPONSE TO No. 13 (c)
There is no mechanism available to drop the load for this contingency.

d) Please state the basis for the finding that a thermal overload was caused on the remaining Serrano-Villa Park 230 kV line.

ISO RESPONSE TO No. 13 (d)
The most critical contingency for the Western L.A. sub-area is the loss of Serrano-Villa Park #1 or #2 230 kV line followed by the loss of the Serrano-Lewis 230 kV line or vice versa, which would result in thermal overload of the remaining Serrano-Villa Park 230 kV line. This constraint establishes the local area requirements for the four RPS portfolios as listed in the third row of Tables 2 through 5 of Robert Sparks' Direct Testimony in the LTPP.

Updated Response of the California Independent System Operator Corporation to the California Environmental Justice Alliance Data Requests First Set ("CEJA Requests 1 Update")

Request No. 3.

Please explain what input assumption the OTC and AB 1318 reliability study referenced on page 256 of the 2011-2012 ISO Transmission Plan used for uncommitted energy efficiency for all local areas in the LA Basin. In other words, please provide the input assumption for energy efficiency used in that sensitivity analysis. Please provide and state the basis for this assumption.

ISO RESPONSE TO No. 3
2461 and 496 MW of uncommitted energy efficiency were modeled in SCE and SDG&E areas the OTC sensitivity analysis, based on information provided by the CPUC and CEC staff. 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.

The ISO is currently drafting an addendum to Section 3.4.2 of the 2011-2012 ISO Transmission Plan to update the results to include combined heat and power information received after publishing the report and to clarify the study assumptions. The ISO will post the updated results and notify the parties as soon as the results become available.

Request No. 4

Please explain what input assumption the OTC and AB 1318 reliability study referenced on page 256 of the 2011-2012 ISO Transmission Plan used for demand response for all local areas in the LA Basin. In other words, please provide the input assumption for demand response used in that sensitivity analysis. Please provide and state the basis for this assumption.

ISO RESPONSE TO No. 4

No uncommitted demand response was modeled in the OTC sensitivity analysis. The demand response programs are not certain to be responsive when needed.

With regard to the updated study results, please see response to number 3.

Request No. 5

Please explain what input assumptions the OTC and AB 1318 reliability studies in the 2011-2012 ISO Transmission Plan assumed for incremental combined heat and power for all local areas in the LA Basin and the Big Creek / Ventura Area.

ISO RESPONSE TO No. 5

An incremental 209 MW of uncommitted combined heat and power was added to the LA Basin and 14.3 MW in San Diego for the sensitivity study: 195 in Western LA Basin, 6 MW in Big Creek/Ventura, 8 MW is in Overall LA Basin but not Western.

With regard to the updated study results, please see response to number 3.

Response of the California Independent System Operator Corporation to the Second Set of Data Requests of the California Environmental Justice Alliance (“CEJA Requests 2”)

Request No. 2

What assumptions did CAISO use for OTC retirements in the analyses discussed in Mr. Sparks’ testimony? Please list retirement assumptions for each scenario if they are different.

ISO RESPONSE TO No. 2

The purpose of the OTC analysis was to determine which OTC units needed to be replaced in the LA Basin and Big Creek/Ventura areas. It was generally assumed, based on State Water Resources Control Board compliance dates, that all OTC generation except for SONGS would be retired or repowered by 2021. The compliance dates can be found on slide 9 of the ISO Presentation during the May 3, 2012 CPUC workshop on the long term procurement plan.

The OTC replacement needs were established in the OTC study by determining a plausible scenario where the local area needs would be met by repowering generation at existing OTC sites with generation that did not require once through cooling.

Request No. 3

Please confirm that the following resources are not included in the tables in Mr. Sparks’ May 23, 2012 Testimony: (a) demand response; (b) uncommitted energy efficiency; and (c) uncommitted combined heat and power.

ISO RESPONSE TO No. 3

Confirmed.

Request No. 5

On page 9 of Mr. Sparks' Testimony, Mr. Sparks states "the next worst contingency for the overall LA Basin area is the outage of Sylmar S-Gould 230 kV line and Lugo-Victorville 500 kV line. The limiting element is Eagle Rock-Sylmar S 230 kV line." Does that limitation drive the LCR need? In the testimony, Mr. Sparks states that the Western Basin contingency drives the LCR need. Is this correct? Explain the basis of your answer.

ISO RESPONSE TO No. 5

Data request number 5 has two questions. In response to the first question, the answer is yes.

Please clarify the second question or provide line and page numbers for the ISO statement referenced in the question.

Request No. 7

How much demand response does CAISO think it is appropriate to consider in the LA Basin? What is the total revised local capacity need for the LA basin if this demand response value is considered?

ISO RESPONSE TO No. 7

The ISO does not have a position on the amount of demand response that it thinks is appropriate to consider. At this point in time the ISO's concern is that any demand response that is to be considered should be durable, generation-substitutable demand response resources that can be procured and planned on like other resource types.

Response of the California Independent System Operator Corporation to the First Set of Data Requests of the Sierra Club California ("Sierra Club Requests 1")

Request No. 2

Confirm that there is no local capacity requirement ("LCR") need in the PG&E Territory.

ISO RESPONSE TO No. 2

There are several local capacity areas in the PG&E area which require the procurement of local capacity. However, the Once Through Cooling (OTC) study documented in Chapter 3 of the 2011"2012 ISO Transmission Plan studied the potential retirement of all of the remaining OTC generation in the PG&E area. The study found that with the assumed addition of several new generation projects currently under development, the retirement of the remaining OTC units in the PG&E area did not result in projected installed capacity deficiencies in the local areas within PG&E in the year 2021.

Request No. 5

Provide the amount of energy storage capacity, if any, used as an input for each of the following LCR grid areas: Greater Bay Area; Big Creek/Ventura (Moorpark Subarea); LA Basin; Western LA Basin; and El Nido.

- a.) During the workshop, Robert Sparks stated that there were no energy storage projects in the LA Basin LCR area? Confirm the accuracy.

ISO RESPONSE TO No. 5 (a)

There were no new energy storage projects assumed in any of these areas.

- b.) If there are projects known to CAISO, list each project and its capacity.

ISO RESPONSE TO No. 5 (b)

Please see response to 5a.

Request No. 6

Provide the amount of energy efficiency used as an input for each of the following LCR grid areas: Greater Bay Area; Big Creek/Ventura (Moorpark Sub-area); LA Basin; Western LA Basin; and El Nido.

ISO RESPONSE TO No. 6

The 2009 California Energy Commission adopted load forecast was used for the 2013 and 2021 local capacity need studies. Please review the CEC load forecast report <http://www.energy.ca.gov/2009publications/CEC-200-2009-012/index.html> for the information requested above.

Request No. 7

Provide the amount of demand response used as an input for each of the following LCR grid areas: Greater Bay Area; Big Creek/Ventura (Moorpark Sub-area); LA Basin; Western LA Basin; and El Nido.

ISO RESPONSE TO No. 7

There was no demand response assumed in the OTC analysis.

Request No. 8

Has CAISO run any studies to determine if the LCR need identified in the studies can be provided, in whole or in part, by transmission fixes or other means?

ISO RESPONSE TO No. 8

Yes

- a.) If yes, please provide each potential fix, the corresponding reduction in LCR need, and any all cost estimates.

ISO RESPONSE TO No. 8 (a)

As described in Robert Sparks' Direct Testimony submitted in the LTPP, an existing SPS was identified that could eliminate the Ellis sub-area need, but due to the critical need for these units if SONGS were no longer available, the ISO does not recommend that this SPS be relied upon. In addition, the overall LA Basin need could be reduced by 2000 MW to 3000 MW by installing sub-transmission facilities and 500/230kV transformers to facilitate load transfers between bulk substations within the LA Basin LCR area. In the Moorpark sub-area the local capacity need could possibly be reduced by approximately 300 MW by installing a large amount of reactive support. The ISO does not have cost estimates for these transmission upgrades.

- b.) Other than the generation solution identified in the transmissions, what solutions address, in whole or in part, the voltage collapse constraint in the Moorpark Subarea?

ISO RESPONSE TO No. 8 (b)

Please see response to 8a.

Request No. 11

Provide all documents that contain estimates of the incremental amount of energy efficiency, demand response, energy storage, and CHP in each LCR grid area.

ISO RESPONSE TO No. 11

The 2009 California Energy Commission adopted load forecast was used for the 2013 and 2021 local capacity need studies. Please review the CEC load forecast report <http://www.energy.ca.gov/2009publications/CEC-200-2009-012/index.html> for the information requested above.

Request No. 12

Provide all documents that relate to CAISO's position that "that there is no basis assume incremental [energy efficiency] and [demand response] amounts will materialize."

- a.) Explain this position.

ISO RESPONSE TO No. 12 (a)

According the CEC report on *INCREMENTAL IMPACTS OF ENERGY EFFICIENCY POLICY INITIATIVES RELATIVE TO THE 2009 INTEGRATED ENERGY POLICY REPORT ADOPTED DEMAND FORECAST, May 2010, CEC-200-2010-001-CTF*, "there is no assurance that efficiency savings from any of the three scenarios [discussed in the report] will be realized."

Request No. 21

Provide all documents and communications that relate to CAISO's disagreement with CEC and/or PUC regarding the incremental capacity amounts proposed by CEC and PUC.

ISO RESPONSE TO No. 21

Please see e-mail below:

From: Le, David
Sent: Thursday, January 19, 2012 11:07 AM
To: 'Skinner, Nathaniel'
Cc: Sparks, Robert
Subject: RE: AB 1318 - follow up DR question

Hi Nat,

As mentioned at the meeting yesterday, for AB 1318 studies, we didn't model DR at specific buses due to various concerns regarding uncertainty on how these programs are available to us or how they are actually activated when needed. We're also concerned whether the LSE/PTOs are committed to the levels of DR that were provided, and how they are made available to us when we need them. These are the issues that we hope can be further clarified or resolved in the future.

If the above issues are resolved, we could apply the same methodology as described below using effectiveness factors to determine the level of generation reduction that could be achieved given the amount of DR provided by the state agencies at specific load buses. This is for LA Basin LCR area. For San Diego LCR area, I reviewed what we've done in the past (i.e., South Bay retirement analysis) and it appears that once we confirmed the level of DR that could be activated, we reduced the generation requirement with the amount of confirmed DR. This is because that the effectiveness factors for the DR in San Diego were more effective (i.e., 1 for 1 MW) in mitigating the identified constraint that we had for San Diego. Please keep in mind that as transmission topology changes with new transmission projects being installed to improve import capability into a given LCR area, we would need to re-run the studies to make sure that the same assumptions above apply.

Regards,

David

From: Skinner, Nathaniel [mailto:nathaniel.skinner@cpuc.ca.gov]
Sent: Wednesday, January 18, 2012 9:31 PM
To: Le, David
Cc: Sparks, Robert
Subject: RE: AB 1318 - follow up DR question

Hi David,

That makes sense. Is this same approach being done in the AB 1318 studies, given the earlier discussion about discounting DR on the call today? Or is the effectiveness factor being assumed to be 0%, even though it is higher (presumably) in other LCR analyses?

Thanks,
Nat

-----Original Message-----

From: Le, David [mailto:DLe@caiso.com]
Sent: Wed 1/18/2012 8:35 PM
To: Skinner, Nathaniel
Cc: Sparks, Robert
Subject: RE: AB 1318 - follow up DR question

Hi Nat,

DR is considered as resources, to the extent that we can count on it to reduce loads at peak time. In the example that you provided below, DR, even though spread evenly among load buses in a given LCR area, is only as effective as its effectiveness factor, similar to how we calculated the generator's effectiveness factor, is in mitigating the overriding constraint in the LCR area. For example, if the DR identified is only 30% effective in mitigating the identified constraint, then you can only count 30% of its total capacity (MW). In your example, let's say hypothetically that the DR is only 30% effective across the board, then for 500 MW of DR in the area, you can only count 150 MW toward potential reduction of generation capacity that would have been otherwise needed to mitigate identified constraint.

Hope this helps,

David Le
California ISO
Regional Transmission - South
E-mail: dle@caiso.com
(916) 608-7302

From: Skinner, Nathaniel [mailto:nathaniel.skinner@cpuc.ca.gov]
Sent: Wednesday, January 18, 2012 2:03 PM
To: Le, David
Subject: AB 1318 - follow up DR question

Hi David,

I had a follow up question regarding DR. Is my understanding correct, that in other Local Area studies, DR is utilized after running the analysis to help meet the LRC requirement?

For example:
Model is run without DR, has a local need of 2,000 MW.
There are 500 MW of DR in that local area. This is spread evenly across busbars and subtracted from the 2,000 MW need.
A "final" need of 1,500 MW thus exists.

If this is incorrect, can you please tell me how DR has been considered in or after other studies? Also, how does that methodology compare to the AB 1318 studies?

Thanks,
Nat

Nathaniel W. Skinner

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Request No. 23

A March 15, 2012, CAISO memo by Keith Casey states that The Flex Alerts could generate 1,000 MW or more of conservation this summer if the level of funding for the program is significant.

- a.) Is any of this 1000 MW included in the estimate of demand response for the LA Basin? If yes, how much?

ISO RESPONSE TO No. 23 (a)

The following provides information about demand response for the SCE area, including the LA Basin. Flex Alerts are not part of this DR estimates.

<http://www.cpuc.ca.gov/NR/rdonlyres/28942C6A-2D2D-40D0-B74A-3E5778D71A43/0/2012IOUDRProgramTotalsFinal728.xls>

- b.) Provide any other CAISO estimates and/or documents related to incremental Demand Response that was not included in the LCR Studies.

ISO RESPONSE TO No. 23 (b)

Section 3.4.2 of the 2011-2012 ISO Transmission Plan provides DR information included in an OTC sensitivity study. The ISO is currently drafting an addendum to Section 3.4.2 of the 2011-2012 ISO Transmission Plan to update the results to include combined heat and power information received after publishing the report and to clarify the study assumptions. The ISO will post the updated results and notify the parties as soon as the results become available.

- c.) Provide all CAISO estimates and/or documents related to incremental energy efficiency that was not included in the LCR Studies.

ISO RESPONSE TO No. 23 (c)

Section 3.4.2 of the 2011-2012 ISO Transmission Plan provides EE information included in an OTC sensitivity study. The ISO is currently drafting an addendum to Section 3.4.2 of the 2011-2012 ISO Transmission Plan to update the results to include combined heat and power information received after publishing the report and to clarify the study assumptions. The ISO will post the updated results and notify the parties as soon as the results become available.

- d.) Provide all CAISO estimates and/or documents related to incremental CHP that was not included in the LCR Studies.

ISO RESPONSE TO No. 23 (d)

The ISO is currently drafting an addendum to Section 3.4.2 of the 2011-2012 ISO Transmission Plan to update the results to include combined heat and power information

received after publishing the report and to clarify the study assumptions. The ISO will post the updated results and notify the parties as soon as the results become available.

Request No. 24

Did the LCR study consider controlled load drop?

a.) If no, why not?

ISO RESPONSE TO No. 24 (a)

Please see response to 8a.

b.) If yes, please list the amount for each LCR grid area.

ISO RESPONSE TO No. 24 (b)

Please see response to 8a.

Request No. 26

For the purpose of analyzing LCR need, does CAISO consider distributed generation located in an LCR area “electrically equivalent?” If no, what capacity factor is assigned to this type of distributed generation?

ISO RESPONSE TO No. 26

Distributed generation was modeled in the OTC studies and counted towards meeting the local needs. A capacity factor of approximately 25% was assumed.

Request No. 27

List the flexibility characteristics of the existing fleet and provide references for each item on the list.

ISO RESPONSE TO No. 27

Please see the following documents for the response to this data request:

2013 Flexible Capacity Procurement Requirement, Supplemental Information Proposal
http://www.caiso.com/Documents/2012-03-02_R11-10-023_Subm_Supp_Info_Prop.pdf

Refer to appendix A of the Supplemental August 2010 Report on Renewable Integration Requirements.

http://www.caiso.com/Documents/Supplement_August2010Report_Integration_RenewableResourcesOperationalRequirements_GenerationFleetCapability_20RPS.pdf

Request No. 28

Slide 21 of Robert Sparks, May 3, 2012 workshop presentation states: “local capacity needs under the base portfolio DG and committed EE and DR amounts in the following slides are the basis for prudent long-term procurement decisions.”

- a.) List each assumption that comprises “the basis for prudent long-term procurement decisions.”

ISO RESPONSE TO No 28 (a)

The 2009 California Energy Commission adopted load forecast was used for the 2021 local capacity need studies. Please review the CEC load forecast report [http://www.energy.ca.gov/2009publications/CEC"200"2009"012/index.html](http://www.energy.ca.gov/2009publications/CEC) for the information requested above.

Specifically form 1.5d:

California Energy Demand 2010-2020 Staff Revised Forecast 1-in-10 Net Electricity Peak Demand by Agency and Balancing Authority

http://www.energy.ca.gov/2009publications/CEC-200-2009-012/adopted_forecast_forms/Chap1Stateforms-Adopted-09.xls

- b.) List each assumption that was not considered because it did not meet CAISO’s criteria for “prudent long-term procurement decisions.”

ISO RESPONSE TO No 28 (b)

Uncommitted energy efficiency, uncommitted demand response, and uncommitted combined heat and power assumptions did not meet CAISO’s criteria for prudent long-term procurement decisions.

- c.) State the basis for each rejection.

ISO RESPONSE TO No 28 (c)

All three are uncommitted. The specific uncommitted energy efficiency and demand response programs are not proven to be effective for reducing load or to be responsive when needed.

Request No. 33

Did CAISO consider any scenarios that would explicitly reduce the need for dispatchable fossil generation? If yes, describe.

ISO RESPONSE TO No. 33

The Environmentally Constrained scenario, modeled in both the local area studies and the renewable integration studies, assumed high levels of DG that reduces the need for dispatchable fossil generation. The ISO did not consider any other scenarios that were designed to reduce the need for fossil generation.

Request No. 34

Does CAISO agree that assessing the potential need for gas-fired generation to meet local capacity requirements requires assessing the combined impacts of demand growth, energy

efficiency, demand response and DG at a much finer geographic resolution than was needed for traditional resource planning?

ISO RESPONSE TO No. 34

Generally, yes, the ISO agrees.

a.) If yes, list the inputs in the studies that provide this finer analysis.

ISO RESPONSE TO No. 34 (a)

A load forecast down to the nodal level is needed which is adopted by the CEC and has been allocated to the nodes by the load serving entities. The demand response should be as dependable as the existing OTC generation.

Request No. 35

The minimum OTC need for the Western LA Basin is the least under the environmentally constrained scenario.¹ Explain why the environmentally constrained scenario requires significantly less OTC needs.

ISO RESPONSE TO No. 35

The models assumed that a large amount (more than the other three RPS scenarios) of distributed generation was installed and connected to nodes within the Western LA Basin area and was producing during the peak load period.

a. Would the OTC need decrease further if the environmentally constrained scenario included additional distributed solar sited in the Western L.A. Basin?

ISO RESPONSE TO No. 35 (a)

As mentioned in the May 3, 2012 LTPP workshop, the ISO is concerned that if too much of the OTC generation is replaced by resources or load reductions that only provide benefits during summer peak load period, the other seasons may require more OTC replacement generation than the summer peak load period.

b. If yes, estimate the reduction in OTC need if an additional 200 MW and 400 MW of distributed solar were sited in the basin?

ISO RESPONSE TO No. 35 (b)

The ISO believes that more comprehensive studies are necessary if the OTC replacement needs are to be based on scenarios other than the Trajectory or the Base portfolio cases that the ISO studied.

Request No. 36

If the environmentally constrained scenario included additional distributed solar sited in the Moorpark subarea, would the LCR need in that area decrease? Would the OTC decrease in that area? Please explain.

¹ Transmission Plan, p.236.

ISO RESPONSE TO No. 36

The ISO believes that more comprehensive studies are necessary if the OTC replacement needs are to be based on scenarios other than the Trajectory or the Base portfolio cases that the ISO studied.

Response of the California Independent System Operator Corporation to the First Set of Data Requests of the Vote Solar Initiative (“Vote Solar Requests 1”)

Request No. 2

Regarding the CAISO Once Through Cooling (OTC) analysis/study:

- a. List all years that are included in the OTC analysis/study.

ISO RESPONSE TO No. 2 (a)

The ISO OTC study focused on the year 2021

- b. For each year listed in 2.a, above, and for each of the four OTC scenarios, provide each and every assumption that went into formulating load-flows (e.g. production cost studies, historical data, etc.).

ISO RESPONSE TO No. 2 (b)

Please see chapter 2, 3, and 4 of the ISO 2011"2012 Transmission Plan at the link that has previously been provided to the parties. Also, the ISO has previously advised the parties, the underlying base case information with all power flow assumptions is available on the ISO's secure website. Please note that the ISO's OTC studies did not include production cost simulations.

Request No. 4

The OTC study identifies specific problematic contingencies connected to a given constraint. For example, Table 2 in of Robert Sparks' May 23rd testimony states a problematic contingency of the Chino-Mira Loma East #3 230 kV line + Mira Loma West 500/230 kV Bank #2 down, with the associated binding constraint or limiting element of Mira Loma West 500/230 kV 10 bank #1 (24-hour rating). For each of these contingencies:

- a. Provide any data that reflects the likelihood of the contingency

ISO RESPONSE TO No. 4 (a)

This contingency scenario is classified as a Category C contingency in the NERC Transmission Planning Standards. According to those standards, the ISO must demonstrate that its portion of the interconnected transmission systems is planned such that the network can be operated to supply projected customer demands, at all demand Levels over the range of forecast system demands, under the contingency conditions during Category C contingencies.

- b. Provide any data that reflects the specific load conditions, hours and seasons under which the limiting element becomes binding.

ISO RESPONSE TO No. 4 (b)

Please see chapter 2, 3, and 4 of the ISO 2011-2012 Transmission Plan. The OTC studies focused on summer peak load conditions.

- c. Provide any data that assists in ascertaining the likelihood, frequency and duration of events where proposed new generation in the OTC study is necessary to maintain stability and reliability.

ISO RESPONSE TO No. 4 (c)

As indicated in response to 4(a), the ISO is required to meet certain criteria for this outage, and does not have the option to perform a probabilistic assessment that would lead to not meeting the criteria. As such, the ISO does have the requested information.

- d. Which contingencies could conceivably be addressed with a finite (2-8 hours) number of hours of 50-500 MW storage?

ISO RESPONSE TO No. 4 (d)

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.

Request No. 8

What modeling, if any, did the CAISO perform that indicates the potential emissions profile for replacement OTC generation? If the replacement OTC generation is assumed to be CCGTs or CTs, is the CAISO aware of the impacts this creates on local air standards? If yes, describe the impacts.

ISO RESPONSE TO No 8

The attached file contains the emission profiles of the generic CCGT and GT modeled in the local areas.

Request No. 11

With regard to CAISO's ongoing operating flexibility analysis:

- a. How much total demand response is included?

ISO RESPONSE TO No. 11 (a)

A total of 4,817MW of demand response is modeled as supply. 327 MW of non-event is modeled as load reduction instead of supply.

- b. What are the characteristics of this demand response?

ISO RESPONSE TO No. 11 (b)

The detailed characteristics of the demand response model are available to download from the ISO FTP site.

- c. How much of this demand response resource is located in the local load pockets relevant for the needs identified in the OTC studies?

ISO RESPONSE TO No. 11 (c)

The renewable integrations studies do not model the local areas to the same geographical level as the OTC planning studies. Of the 4817MW of modeled demand response, 302MW is modeled in the SDGE area and 2827MW is modeled in the SCE area.