Stakeholder Comments Template

Subject: Regional Resource Adequacy Initiative

Submitted by	Company	Date Submitted
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This template has been created for submission of stakeholder comments to the Second Revised Straw Proposal for the Regional Resource Adequacy initiative that was posted on May 26, 2016. Upon completion of this template, please submit it to initiativecomments@caiso.com. Submissions are requested by close of business on **June 15, 2016.**

Please provide feedback on the Regional RA Straw Proposal topics:

SUMMARY

CDWR appreciates the opportunity to comment on CAISO's Second Revised Straw Proposal for the Regional Resource Adequacy initiative. In these comments, CDWR urges CAISO to make the following modifications or clarifications to the proposal:

- CAISO should assure unique entities, such as CDWR, that it will not unilaterally change forecasts in the benchmarking and review process.
- CAISO should confirm that it recognizes that the 4% divergence threshold applied to 3 years of historical, weather normalized load data, should not be strictly applied to loads such as CDWR's, that are highly variable from year-to-year.
- CAISO should confirm that entities, like CDWR, that do not have retail customers will continue to be allowed to update load forecasts on a monthly basis in order to continue providing CAISO the same level of meaningful forecast data it receives

today. Monthly load forecast adjustments for such entities must not be limited only to quantifiable load migrations.

- CAISO should revise its proposal to continue deference to the jurisdiction of LRAs to determine PRM and resource counting criteria.
- CDWR supports CAISO's proposal to allow LSEs to forecast their loads with LRA-determined consideration for demand response and other load modifiers. CAISO should confirm that CDWR's forecasts of participating load, following the criteria laid out in the Participating Load Agreement with CAISO, will continue to be honored.
- CAISO should clarify its PMax methodology for resource counting. Specifically, it should provide details on which resources are considered participating hydro and pumped hydro, their testing methodology, and how often counting criteria can be updated.
- CAISO should confirm that Participating Load will receive its Registered Capacity Value as long as it meets the Resource Performance Verification standard, regardless of the four-hour sustained output criteria for RA eligibility.
- CAISO should allow non-resource specific imports to provide substitute RA.
- CAISO should clarify how existing inter-ties that are within the expanded BAA would be impacted by CAISO's MIC proposal.

INTRODUCTION

CDWR's operation of the State Water Project (SWP) is based on planning to ensure that sufficient resources are available to supply its pumping loads, which are a critical part of SWP's water delivery system. Since the beginning of CAISO's RA program, CDWR has served as the Local Regulatory Authority (LRA) for the SWP, and the SWP has consistently complied with CAISO's RA requirements.

CDWR appreciates CAISO's expressed willingness to be flexible with LSEs whose characteristics do not fit the usual parameters of the more typical retail utility LSE. However, the Regional RA Straw Proposal still requires some adjustments to avoid disruption of CDWR's

current RA program, and to adequately recognize the unique operating characteristics of the SWP. Thus, before addressing the specific elements of CAISO's proposal, CDWR offers some background information.

SWP's operating requirements make it unique among CAISO load-serving entities.

CDWR operates the SWP, which is the largest state-owned, multi-purpose water project in the country. SWP's operations are critical to the resources and economy of the state. SWP's system spans nearly the entire state, from Lake Oroville in Northern California to the Pyramid, Castaic, Silverwood, and Perris reservoirs in Southern California. SWP delivers an average of 3.3 million acre-feet of water per year to 29 public agency water contractors throughout California. Approximately 40 percent of the deliveries are used to irrigate some 750,000 acres of farmland. The rest of the deliveries serve the water needs of more than 24 million Californians.

SWP's water conveyance system includes 29 water storage facilities, approximately 675 miles of aqueducts and pipelines, 21 pumping plants, 3 pumping-generating plants, and 5 hydroelectric power plants. SWP's power generating sources have capacity of over 1,900 megawatts, and generate an average of 5 billion kilowatt-hours of energy per year. SWP's pumping facilities have a combined demand of approximately 2,600 megawatts, and consume an average of 9 billion kilowatt-hours of energy per year. SWP manages its power operation through self-generation, load management (including demand response, power exchanges, and purchase and sales transactions with other entities), and participation in the CAISO power markets.

SWP is an integrated water and power operation, with the primary focus of delivering water safely to Californians. SWP's participation in the CAISO markets is thus primarily driven by water delivery needs, hydrology, and environmental restrictions. At the same time, to the extent water delivery requirements permit, it is the policy of SWP to contribute to grid reliability during CAISO system-wide, coincident-peak load hours. FERC has consistently recognized the unique nature of SWP's hydroelectric facilities, and has previously directed CAISO to modify its RA proposals to ensure that such facilities could participate in CAISO's RA program.[1]

[1] *Cal. Indep. Sys. Operator Corp.*, 149 FERC ¶ 61,042, P 100 (2014) ("Hydroelectric resources and other use-limited resources are constrained by environmental conditions as well as other obligations imposed by California state law. We agree with SWP that these constraints make an ancillary service must-offer obligation problematic for use-

Many of CDWR's pumping facilities participate in CAISO's markets pursuant to the Participating Load Agreement ("PLA"), under which CDWR is able to schedule its Participating Loads in the CAISO markets. The Commission recognized CDWR's need for waivers from standard provisions that would allow CDWR to fulfill its primary water management mission first and participate in CAISO markets second, and has done so from the early days of the CAISO.[2] The PLA was last revised in July 2015.[3] Under the PLA, CAISO has the obligation to "consider the impact on [C]DWR and [the Participating Load] Agreement" whenever it is "making amendments to the CAISO Tariff that concern Participating Load Services."[4]

Under its existing RA Program, CDWR ensures that sufficient resources are available to meet the needs of SWP's pumping load during CAISO's system-wide coincident-peak.

SWP complies with the Resource Adequacy Program established by CDWR. Like all other LSEs, SWP submits annual and monthly RA Plans and Supply Plans to CAISO to demonstrate compliance with RA requirements. A few features of SWP's Resource Adequacy Program are noteworthy for the current stakeholder process.

Load Forecasting: CDWR does not serve residential, commercial or industrial load, so its consumption patterns do not track the typical assumptions and patterns usually assumed to underlie a typical forecast. SWP's load forecasts reflect water delivery needs, current reservoir and aqueduct levels, current and planned outages, forecast hydrology, environmental restrictions, etc. Thus, SWP's need for power is driven primarily by when it rains, where it rains and how much it rains, all factors that can be difficult to predict, especially a year in advance. SWP's water planning simulations factor the impact of hydrologic, structural, and regulatory changes on SWP water operations. SWP updates its forecasts on a monthly basis to reflect changes in weather, hydrologic cycles, environmental restrictions, water delivery requirements, carryover

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limited resources due to the uncertainty as to how often such bids will result in energy production."); *Cal. Indep. Sys. Operator Corp.*, 127 FERC ¶ 61,298, PP 122-24 (2009) (finding that it would be unreasonable to impose an A/S must-offer obligation "because such resources may, as a result of these other duties, not participate in the resource adequacy program thereby making resource adequacy capacity more expensive."); *San Diego Gas & Elec. Co. v. Sellers*, 95 FERC ¶ 61,115 (2001) ("The Commission, however, recognizes the difficulty in applying the must-offer requirement to hydroelectric power, because of its multipurpose limitations (e.g., irrigation, recreational, and power production), and therefore will exempt them from the must-offer obligation.).

[2] *California Independent System Operator Corporation*, 88 FERC ¶ 61,182 (1999).

[3] Letter Order accepting Revised Participating Load Agreement (July 29, 2015), Docket No. ER15-1805-000, eLibrary No. 20150629-3010.

[4] Participating Load Agreement, Section 4.9.

reservoir storage levels, and operation of joint-use facilities. Recognizing that these circumstances can change significantly from year-to-year and month-to-month, SWP's forecasts reflect the best information available at the time they are made. SWP submits annual, monthly demand forecasts to the CEC in accordance with all relevant rules.

Planning Reserve Margin: SWP uses a 15% planning reserve margin for all firm loads (i.e., those pumping loads not providing ancillary services and/or load drop). SWP adds that planning reserve margin to its forecast of the demand of its firm load at the forecasted monthly coincident-peak to calculate its monthly Resource Adequacy Requirement. SWP then adds its forecasted non-firm load (i.e. those pumping loads that are self-providing RA, as described below) to calculate its total monthly Resource Adequacy Requirement.

Participating Loads: In accordance with the Participating Load Agreement and CAISO Tariff, Participating Loads can self-supply RA. The amount of qualifying capacity from a Participating Load resource is the lesser of the resource's capacity (as specified in the PLA) or the forecast of pumping load for the month at the maximum capability. When a Participating Load provides RA capacity, it must bid contingency-only, non-spin operating reserves.

Resource Availability: When SWP self-provides RA for Participating Load, those resources are not subject to energy must-offer obligations, but participate in the ancillary services market as contingency-only when the pumps are operating. When the pumps are not operating, there is no need for CDWR to self-provide RA for those loads, and thus they do not bid any load reductions or ancillary services. In addition to self-providing RA for Participating Load, some of SWP's resource adequacy requirement is provided by SWP's hydroelectric power plants or pump-gen plants. Those resources, when providing RA, comply with the relevant must-offer and availability requirements by bidding or self-scheduling energy in accordance with their designated capacity for a month. CAISO's tariff allows those use plans to be updated intra-monthly, in recognition of the forecasting limitations mentioned above.

1. Resource Adequacy Unit Outage Substitution Rules for Internal and External Resources

The ISO proposes to allow an external resource to substitute for an internal resource that is on a forced or planned outage as long as the substitution meets the following conditions:

1. The external resource has similar operating characteristics of the outage resource;
2. The external resource/entity has sufficient MIC allocation to be used for substitution; and
3. The external resource has the capability to fulfill the RA must-offer obligation of the outage resource.

CDWR supports the concept of allowing external resources to substitute for internal resources on outage, and further believes that non-resource specific imports should also be eligible to provide substitution. CDWR requests clarification of whether Condition 1 (external resource has similar operating characteristics) would prevent a non-resource specific import contract (which typically does not specify a particular resource) from providing substitute RA, since it may not be possible to identify a resource in the import contract in order to determine the similarity of characteristics as that of an outage resource. If CAISO clarifies that Condition 1 is intended to exclude non-resource specific imports, CDWR urges CAISO to revise its proposal to allow non-resource specific imports to provide substitute RA.

2. Discussion of Import Resources that Qualify for RA Purposes

CDWR has no comment at this time, but requests that CAISO provide additional details.

3. Load Forecasting

As noted above, SWP's load forecasts reflect water delivery needs, current reservoir and aqueduct levels, current and planned outages, hydrology, and environmental restrictions. Unlike other LSEs, CDWR does not serve residential, commercial or industrial load, so its consumption patterns do not track the typical assumptions and patterns that are usually assumed to underlie a forecast by a typical LSE. CDWR believes that several elements in CAISO's proposal on load forecasting must be adapted to accommodate CDWR's operations.

Hourly Demand Forecast Requirement and Benchmarking

The ISO proposes that all LSEs provide the ISO with mid-term (one year forward) hourly load forecasts. The ISO will also use the system-wide forecast to determine each LSE's contribution to the coincident system peak forecast. The ISO intends to create a process under which the California Energy Commission ("CEC") would continue to determine the load

forecasts for its jurisdictional LSEs in the existing ISO BAA, and entities outside of the current BAA would continue to develop their own load forecasts.

As CDWR has previously explained, its demand forecast is not weather normalized, and uncertainty in hydrology and water demand makes it difficult for CDWR to forecast hourly loads within the benchmarks proposed by CAISO a year in advance.[5] CDWR reiterates that, due to the highly variable nature of its operations, any hourly load forecast CDWR would produce a year in advance would not be meaningful.

In response to CDWR's concerns, CAISO stated that it "understands that a *one-size-fits-all* approach to load forecasting may not work for some LSEs" and committed to "have the flexibility to work with" unique entities like CDWR in reviewing load forecasts. Moreover, CAISO explained that it "has proposed to leave the development of those [hourly] forecasts up to those LSEs… and will revisit the need for other arrangements if it is apparent that would be necessary." Finally, CAISO stated that it "would not unnecessarily adjust a load forecast and would discuss any review with the entities involved."

CDWR appreciates CAISO's accommodative approach for CDWR's unique circumstances. However, CDWR requests that CAISO provide more clarity and details on what flexibility would be considered to prevent unique entities (such as CDWR) from having their forecasts unilaterally changed by the ISO in the benchmarking and review process.

Components of Demand Forecast:

The proposal states, "The ISO proposes that all LSE load forecast submittals should also include impacts from behind-the- meter or *load modifying* Demand Response ("DR"), Energy Efficiency ("EE"), and Distributed Generation ("DG"). The ISO believes that entities conducting load forecast in an expanded BAA should retain the flexibility to treat adjustments to their load forecasts how they choose and accept what methods best represents the needs of their situation. In other words, LSEs conducting load forecasts may determine the assumptions utilized for their own load forecasts and decide how to incorporate impacts from DR, EE, DG, and other load forecast modifiers."

CDWR supports CAISO's proposal to continue giving LSEs flexibility to treat load adjustments using methods that best represent the needs of their respective situation. In CDWR's

[5] *See* Second Revised Straw Proposal at 50 (summarizing CDWR's previous round of comments).

case, that would mean continuing to apply the 115% PRM to its firm load and the portion of its participating load that provides local RA, but not to the portion of its non-firm participating load that can be reduced to provide system RA. CDWR understands that the participating load providing local RA is still subject to the full PRM because the local RA obligation cannot be reduced.

Example: A (Participating load does not provide RA)

Total RA demand forecast= 100 MW

Participating load providing system RA in the forecast = 0 MW

PRM = 115%

System RA Requirement (RAR) = (100-0)*1.15+0 = 115 MW

Participating load in supply plan = 0 MW

Example: B (Participating load provides system RA)

Total RA demand forecast = 100 MW

Participating load providing system RA in the forecast = 10 MW

PRM = 115%

System RA Requirement (RAR) = (100-10)*1.15+10 = 113.5 MW

Participating load in supply plan = 10 MW

Example: C (Participating load does provides local RA)

Total RA demand forecast = 100 MW

Participating load providing local RA in the forecast = 10 MW

PRM = 115%

System RA Requirement (RAR) = (100)*1.15= 115 MW; 115% applies to all because local RA cannot be reduced for an LSE.

Participating load in supply plan = 10 MW

Because the percentage of participating load providing system and local RA each month varies with changing conditions, CDWR must continue to be able to adjust its forecasts on a monthly basis.

Monthly Demand Forecast Adjustments

The proposal states, "The ISO believes that the only monthly load forecast adjustments should be based on quantifiable and demonstrated load migrations, i.e., changes in customer base due to direct access or the projected addition or removal of customers for other reasons."

CDWR does not have retail customers, so it does not experience load migration. As explained above, CDWR's monthly load forecast varies drastically from the annual forecasts due to the inherent variability in hydrology and other operational needs. CDWR must continue to be able to update its load forecast on a monthly basis as it does now, in order to continue to provide CAISO with the same level of accurate forecast data it receives today. CDWR recognizes that its forecast situation is likely unique, but the Regional RA proposal must contain the flexibility to recognize LSE's with unique operational needs, such as CDWR. CDWR requests that CAISO affirm its recognition that CDWR's current practices can be accommodated under this Regional RA proposal.

Load Forecasting Review Criteria

The ISO previously proposed to use a 4% divergence threshold in a LSE's average year-over-year change in the previous 3 years of weather normalized load data. The ISO believes this is appropriate criteria to trigger an ISO performance review of the submitted load forecast. The ISO will have the ability to evaluate forecasts using a trigger criteria based on historical normalized data.

As noted above and in previous comments, CDWR cannot predict how much rain will fall on a particular watershed on a particular date a year in advance and therefore how much pumping will be needed downstream in a particular hour. Given the inherent uncertainty of hourly forecasts a year in advance, it is unlikely that CDWR would meet the 4% divergence limit CAISO proposes.

The proposal further states, "The ISO reiterates that the ISO is proposing that it would only request adjustment to the load forecast submittal after a subsequent discussion between the ISO and LSE and any state commission or LRA that is overseeing load forecasts submitted by the LSE in question, and only if the LSE cannot demonstrate the drivers of forecast variances".

CDWR appreciates CAISO's expression of flexibility, and requests confirmation that CAISO recognizes that a higher level of deviation will not trigger forecast adjustments.

4. Maximum Import Capability

The ISO proposes to limit the initial allocations of MIC capability to only those sub-regions of the ISO that are defined by the Regional TAC sub-regions on a load ratio share basis of only the LSEs serving load within those sub-regional TAC areas. CAISO believes that, under this new proposal, LSEs in the current BAA will still be receiving similar allocations of MIC capability that are made available by the current BAA interties today, and those same current BAA LSEs would only be able to nominate MIC on those interties into the current BAA (sub-regional TAC area). CAISO further explains that LSEs serving load within the PacifiCorp footprint will receive all of the MIC capability that is provided by its current system's capability, with the ability for entities in that sub-region to nominate only on interties into that PacifiCorp sub-region area.

CDWR seeks clarification on how existing inter-ties and their allocation would be impacted by this proposal. If today's inter-ties are within the expanded BAA, will they remain treated as inter-ties? If an existing external inter-tie becomes internal because it is within the expanded BAA, will it be treated in the same manner as path 26 allocations are treated today? How many inter-ties will remain inter-ties with the expanded BAA?

5. Monitoring Locational Resource Adequacy Needs and Procurement Levels

CDWR supports CAISO decision to remove zonal RA requirements from the proposal.

6. Allocation of RA Requirements to LRAs/LSEs

CDWR has no comment at this time.

7. Reliability Assessment

a. Planning Reserve Margin for Reliability Assessment

The CAISO is proposing to develop the option of a probabilistic study to determine a system-wide PRM target. The CAISO notes that the major considerations in moving in the direction of developing a probabilistic PRM methodology is that probability concepts such as

loss of load expectation (LOLE) provide the ability to quantitatively incorporate uncertainty in the assessment of power systems, which cannot be done using deterministic methods. In previous proposals the CAISO explained how many other regions utilize a 1 day-in-10 years or "1-in-10" LOLE criterion. The LOLE concept was described in the ISO's Revised Straw Proposal.

At this time, CDWR has no comment on the level of LOLE needed for CAISO system requirements. But it would be prudent for the CAISO to conduct study runs on LOLE with varying levels including industry standard (1 in 10), before making any decisions for a particular level. Monthly PRMs may also be useful, perhaps providing more value on reliability and costs.

CDWR understands that the CAISO proposal allows LRAs to maintain their own PRM and counting criteria and that the CAISO will use the uniform counting criteria in RA showings and reliability assessments. Will the CAISO require the standard PRM for RA showings also? Or, will the CAISO allow LSEs to use their own PRM set by LRA for RA showings?

As discussed above, CDWR currently applies the planning reserve margin only to firm loads. It would be inappropriate and unnecessary to add a planning reserve margin to Participating Load that is self-providing RA, since that load can be dropped during a contingency event. Any validation mechanism should incorporate these criteria.

b. Resource Counting Methodologies for Reliability Assessment

The CAISO proposes to develop uniform counting methodologies that would be applied for resource adequacy showings and the proposed reliability assessment.

CDWR continues to maintain its position that the ISO should continue the present tariff policy of deference to the jurisdiction of LRAs to determine PRM and resource counting criteria.

ISO proposes 5 different methods of resource counting based on the type of resource, namely, Pmax, exceedance methodology, historical methodology, four hour test method, and registered capacity value method.

Pmax method: The Pmax methodology is an evaluation of a resource's maximum output which is verified by the CAISO. The CAISO proposes to apply the Pmax methodology for the following resource/fuel types:

Thermal: Nuclear, natural gas, oil, coal, geothermal, biomass, and biogas.

Participating hydro

Pumped hydro

Since the CAISO's proposal no longer allows LRA counting criteria for RA showings, CDWR believes more details need to be provided on this option on what resources are considered participating hydro and pumped hydro, their testing methodology, and how often counting criteria can be updated.

CDWR appreciates the CAISO's accommodative approach on participating load counting criteria with regard to performance testing based on the existing operating procedure. CDWR notes that the existing Resource Performance Verification standard does not include a four-hour sustained output for resources providing ancillary services. CDWR requests that CAISO confirm that Participating Load will receive its Registered Capacity Value as long as it meets the Resource Performance Verification standard, regardless of the four-hour sustained output criteria for RA eligibility.

If CAISO intends to impose the four-hour requirement on Participating Load, CAISO should revise its proposal to eliminate that requirement. Requiring Participating Load to sustain output for four hours would be unreasonable for the following reasons:

a) Participating load as a supply resource meets its RA requirement by offering non-spin with contingency flag. A contingency may not last for four hours and therefore four-hour sustained output may not be required;

b) By imposing such a stringent requirement of four hour dispatch (that may not be needed at all), important resources that can provide significant grid support in times of contingencies would not be able to participate in the CAISO market resulting in higher costs of RA procurement to LSEs that could have utilized such resources efficiently to for the grid reliability support;

c) The fast ramping capability of Participating Load makes it a viable resource to provide instant grid support for a shorter duration and should not have to meet more stringent requirements than a conventional generator for testing as well as dispatch. CDWR understands the CAISO's reasoning for imposing a four-hour test for NGRs, but participating load is not modeled as NGR and should not be compared to NGR for test and dispatch;

d) The CAISO Tariff (Section 8.4.3(a)) only requires resources providing non-spin operating reserves to sustain output for 30 minutes. The requirement for Participating Load to provide RA should be consistent with the requirement to provide non-spin reserves.

8. Other

If CAISO decides to pursue its "two-step" regulatory approval process, any conceptual filing at FERC should be comprehensive. As CDWR has previously commented, a piecemeal approach to seeking regulatory approval of the various regional stakeholder initiatives prevents consideration of all the interacting pieces. At minimum, any conceptual filing should be sufficiently detailed to allow meaningful review, and it should address how CAISO proposes to treat load forecasts, planning reserve margins, and counting rules for CDWR, and any impact of the proposal on the Participating Load Agreement. Specifically, a conceptual filing at FERC should state the following principles:

- Forecasts by unique entities, such as CDWR, will be protected from unilateral changes by the CAISO in the benchmarking and review process.
- Flexibility should be offered for highly variable loads of entities such as CDWR which are easily able to meet the 4% divergence threshold applied to 3 years of historical, weather normalized load data,
- Entities without retail customers, like CDWR, should be allowed to continue to update load forecasts on a monthly basis in order to continue providing CAISO the same level of meaningful forecast data it currently receives and monthly load forecast adjustments for such entities must not be limited only to quantifiable load migrations.
- The current practice of deferring to the jurisdiction of LRAs to determine PRM and resource counting criteria should be retained.
- When calculating a Planning Reserve Margin for the reliability assessment, CAISO should not add a planning reserve margin to participating load that is self-providing RA, since that load is non-firm and can be dropped during a contingency event.
- LSEs should be allowed to forecast their loads with LRA-determined consideration for demand response and other load modifiers, and CDWR's forecasts of participating load, following the criteria laid out in the Participating Load Agreement with CAISO, will continue to be honored.
- The PMax methodology for resource counting should provide details on what which resources are considered participating hydro and pumped hydro, their testing methodology, and how often counting criteria can be updated.

- Participating Load should receive its Registered Capacity Value as long as it meets the Resource Performance Verification standard, regardless of the four-hour sustained output criteria for RA eligibility.
- Non-resource specific imports should be eligible to provide substitute RA.