

# SWP's comments on Straw proposal on Standard Resource Adequacy Capacity Product

November 21, 2008

The California Department of Water Resources State Water Project (SWP) appreciates the opportunity to provide comments to the California Independent System Operator (CAISO) on its straw proposal entitled “Standard Resource Adequacy Capacity Product” dated November 11, 2008. SWP participated in the November 18 stakeholder meeting at the CAISO scheduled for discussion on the CAISO straw proposal. SWP respectfully submits following comments to the CAISO on the straw proposal:

SWP recognizes two major issues embedded into the straw proposal that have significant impact: 1) Standard Capacity Product (SCP) tags; 2) Performance standard including availability target for the RA resources; 3) Clarification issues.

## **1) Standard Capacity Product (SCP) tag attributes:**

The straw proposal defines SCP tags as:

**SCP Tag** *{Resource ID, RA capacity MW ≤ NQC, Month}*

This tag with three attributes as proposed can not accommodate resources that are potential RA resources for only certain hours of a day although Use Limited Resources (ULR) are allowed to offer only for certain hours according to the tariff. The notion that once RA capacity is procured the same capacity is for 24 hours of a day does not capture the resources that are available or can be made available only for some hours of a day.

Table -1

LSEs For “January” 2010	Local RA obligation	Local RA resource IDs, MW and daily available hours	Compliance Local RA	System RA obligation	System RA resource IDs, MW and daily available hours	Compliance System RA
LSE 1	40 MW	“LR1”=40 MW; HE01-HE24	Yes; one resource is available for 24 hrs	240 MW	“SR1”= 200 MW; all hours Plus “LR1”	Yes; one resource is available for 24 hrs
LSE 2	40 MW	“LR2”=40 MW; HE01-HE12 “LR3”=40 MW; HE13-HE24	Yes; two resources available half time covering a whole day	240 MW	“SR2”=100MW HE01-HE24 “SR3”=100MW(ULR) HE12-HE24 “SR4”=100 MW HE01-HE11 Plus “LR2”, “LR3”	Yes; three resources available covering the whole period

In the Table-1 two identical LSE1 and LSE 2 are shown. LSE1 makes RA compliance with just two resources where as LSE2 makes compliance with two or more resources that are available in temporal basis for a day thus covering the availability for the whole

day. The CAISO proposed tag only addresses LSE1 but not the LSE2 because the tag attribute is not on temporal basis but monthly. If the SCP tag includes monthly as well as daily and hourly attributes, the LSE 2 could have been supported for its compliance the way it does in the above table. To address the LSE 2's way of compliance, SWP proposes the SCP tag as following:

**SCP Tag** *{Resource ID, RA capacity MW≤NQC, Year range (yy-yy), Month range (mm-mm), Day range (dd - dd), time range (HE.-HE..)}*

Example in Table-1: The LSE 1 uses following tags of 240 MW covering January 2010 for full RA compliance:

["LR1", 40MW, 09-09,01-01,01-31,HE01-HE24]  
 ["SR1", 200MW, 09-09, 01-01, 01-31, HE01-HE24]

The LSE2 uses following tags of 240 MW covering January 2010 for full RA compliance:

["LR2", 40MW, 09-09,01-01,1-31,HE01-HE12]  
 ["LR3", 40 MW,09-09, 01-01, 01-31, HE13-HE24]  
 ["SR2", 100MW,09-09,01-01,01-31,HE01-HE24]  
 ["SR3", 100MW,09-09,01-01,01-31,HE12-HE24]  
 ["SR4", 100MW,09-09,01-01,01-31,HE01-011]

LSE1 (RAR=240 MW) for January 2010, all days (hours of days in the display)

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
"LR1" for all hours=40 MW (local)																							
"SR1" for all hours=200 MW (system)																							

LSE2 (RAR=240MW) for January 2010, all days (hours of days in the display)

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
"LR2"=40 MW (local)												"LR3"=40 MW (local)											
"SR2"=100 MW (system)																							
"SR4"=100 MW (system)												"SR3"=100 MW (system)-ULR											

The CAISO can validate above plans reconciling days and hours of the month and the required capacity and the RA resources for a particular LSE. The SWP proposed tag design also addresses the LSE1 which is submitting plans according to the CAISO proposed SCP tag.

**Pros of SWP proposed SCP tag design:**

- 1) Provides flexibility in counting resources for RA in temporal basis: Use Limited Resources (ULR) as RA resources are exempt from 24 hours availability requirement. However, an LSE that uses ULRs as RA resources that are available only for, let's say, super-peak hours (HE15-HE19), may still need other resources to cover for the rest of the hours for which those ULRs are not available, in order to satisfy its on-peak demand as RA compliance for the whole day. The LSE may use either ULRs or non-ULRs that are available for hours other than super-peak

- hours to meet its on-peak demand. This temporal flexibility does not exist in the CAISO proposed tag. With the CAISO tag design, the LSE2 would have procured total of  $(40+40+100+100+100=380)$  MW capacity to satisfy its obligation of 240 MW. This could be expensive for LSE2. In addition, if they are non-ULRs, all 380 MW would have to be offered for 24 hrs to satisfy RA requirement of 240 MW except for the ULR, “SR3”.
- 2) Provides room for trades of excess RA capacity on temporal basis: LSEs that have excess generation capacity may sell or trade excess capacity on temporal basis on any day and any hour. LSEs can shop around for capacities based on their requirement rather than buying capacity from the same resource for a whole month or a year. With the CAISO proposed tag, LSEs may not opt for buying on-peak only capacity from ULRs because they can not be available for 24 hours; they would rather choose to buy from resources that are available for 24 hours. The CAISO SCP tag would preclude on-peak capacity available from such resources because capacity procured from non-ULR on top of capacity from ULR would need to be offered 24 hours. In example, LSE2 uses ULR resource “SR3”. However, with the proposed design, non-ULR resource “SR4” needs to be offered for 24 hours including the hours covered by the ULR (“SR3”). So why would LSE2 procure ULR resource “SR3”? LSE2 would look for resources like “SR2” only that are available for 24 hours. So, the proposed design eliminates participation of resources like “SR3” and “SR4” in the RA capacity market.
  - 3) Sends price signal: CAISO proposed tag undermines the price signal for RA capacity. Just as on-peak and off-peak energy price varies by hour, so does the capacity. This concept is addressed by the SWP proposed tag. Entities can trade tags at varying prices depending on the hour they need.
  - 4) When no load exists, no RA resource should be forced to be available: It may be possible that for an LSE load at a local area during some days or months may not exist or for an LSE total load may be zero during off-peak hours. In such case, making RA resource available is just an unnecessary burden for the LSE. This tag avoids that situation.
  - 5) The tag attributes itself contains the expected availability taking into account the outages except forced outages.
  - 6) Expected availability can be updated intra-monthly for ULRs linking to the Use Plan.
  - 7) Outage replacements: outage units can be replaced with the tag intra-monthly.
  - 8) Addresses multi-year commitments.
  - 9) Enhances the very purpose of capacity market design i.e. pave the way for selling excess capacity efficiently.
  - 10) Question of uniformity of tag: The tag is not uniform because of varying durations. This should not limit the ability of trading capacity. Buyer can buy the needed capacity for the hour it needs from the seller. Buying and selling of capacity would rather be efficient based on varying prices with season or time.

**Cons of SWP proposed tag:**

MRTU requirement of RA resource to be available for 24 hours except for ULRs is a challenge. If the RA resource is bid or self-scheduled for a few hours of a day unless it is

an ULR, the CAISO automatically inserts “**generated bids**” for the rest of the hours. If a RA resource (non-ULR) is planned for only a certain hours of a day and the CAISO inserts bids for the remaining hours of the day, this proposed tag would be inconsistent. If the CAISO modifies the requirement of 24 hrs scheduling for the same resource and replace by LSE’s portfolio RA compliance (supplier can schedule any hour the resource is deployed as a RA resource and cover the whole day with sufficient RA capacity from different resources for the LSE; like LSE 2 in example), then this tag should work.

## **2) Availability target and the performance standard:**

The CAISO proposes that initial target availability be based on the average outage of past 5 years and the planned outage for the compliance year. The following compliance year would refer to the past year’s actual outage data for the availability target. This proposal may fit certain resources such as thermal. However, this proposal does not fit hydro resources including hydro generating units and pumping loads. Specifically, these resources for SWP depend on the water demand, hydrologic conditions, and environmental constraints. Past 5 years data does not represent the ever changing operational scenario of these resources. The straw proposal at section 5.5 identifies that certain resources need different approach than proposed and the CAISO seeks input. SWP suggests that the resources that need different approach should include Use Limited Resources including hydro generating units and demand response such as hydro pumps along with the CAISO identified Imports and Liquidated damaged contracts. With respect to the Use Limited resources availability target and performance standard SWP proposes as following.

- 1) If SWP proposed tag is used: the target availability should be measured every month. The target availability is the hours displayed in the tag for the month. Availability measurement may be monthly or annually. Threshold for penalty may be the ICPM proposed 95% of the target. “Forced is forced” concept should remain. Bonus for better than target performance should be established.
- 2) If the CAISO proposed tag is used: The target availability should be the monthly submitted expected availability hours (taken into account maintenance and overhaul outage) along with the monthly RA plans (availability derived from the most recent updated intra-monthly or monthly forecast for ULRs). ULRs availability is uncertain and the more close to the compliance month, the better is the availability forecast. “Forced is forced” concept should remain. Availability for ULRs should be updated with the intra-monthly update of Use Plans. Bonus for better than target performance should be established.
- 3) When there is no load during the compliance month in the updated forecast that was accounted for in the annual RA plan or monthly RA plan, the RA resource serving that load should not be required to be available. The SCP design should be inclusive of this provision.
- 4) In some instances such as the outage of an aggregated RA resource, only one unit may be in outage. As an aggregated resource, the resource may be available with reduced output by the size of the outage unit, for the time it is supposed to be

available. The CAISO final design should provide clarity in defining the performance standard in those circumstances.

- 5) The straw proposal uses “SLIC Outage” as the measurement parameter for performance for each resource. RA compliance with respect to the requirement is to measure whether the resource has been offered (bid or self-scheduled) or not rather than whether the unit has been reported as outage. All the RA resource that has been offered (bid or self-scheduled) may not be committed in IFM or RUC and how “SLIC Outage” applies to such un-committed RA resource is an issue to look at. In the example, RA resources for LSE2 can be tracked for their “offer (bid or self-schedule)” during the compliance month. The “offer” hours can be counted and assessed against the availability target set in the tag and performance standard can be assessed. Measures may have been in place for dispatched RA units for tracking their performance just like any other committed units.
- 6) Performance should be measured only for “RA peak hours (as proposed by the CAISO)”<sup>1</sup> for penalties rather than for all hours. “RA peak hours” should be the focus of RA compliance rather than 24 hours. For reserve sharing LSEs RA must offer obligation should be limited to these “RA peak hours” only.
- 7) With regard to penalties for performance, the CAISO can provide the MW capacity and hours the resource was not offered (or SLIC outage) for the month discounting the forced outages. The traders of the capacity can determine themselves the price the buyer would get back from the non-performing capacity without disclosing the price of bilateral capacity transaction to the CAISO. Physical derates for the ULRs should not be applied because their performance is dependent on several uncertain factors and the past records does not represent the upcoming compliance year.

**3) In addition to above two major design issues, SWP has following clarification items:**

- 1) At section 3.1 (Current Resource Adequacy Framework: Use Limited resources), the proposal indicates that hydroelectric resources are not required to be registered. Such statement should be in-line with the tariff<sup>2</sup> which includes participating load also for exemption.

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<sup>1</sup> April *through* October – HE14-HE18  
Nov-Dec-January- *through* March - HE17-HE21

<sup>2</sup> **40.6.4.1 Registration of Use-Limited Resources.**  
Scheduling Coordinators for Use-Limited Resources, **other than for hydroelectric Generating Units and Participating Load, including Pumping Load**, must provide the CAISO an application in the form specified on the CAISO Website requesting registration of a specifically identified resource as a Use-Limited Resource. This application shall include specific operating data and supporting documentation including, but not limited to;  
(1) a detailed explanation of why the resource is subject to operating limitations;  
(2) historical data to show attainable MWs for each 24-hour period during the preceding year, including, as applicable, environmental restrictions for NOx, SOx, or other factors; and  
(3) further data or other information as may be requested by the CAISO to understand the operating characteristics of the unit.  
Within five (5) Business Days after receipt of the application, the CAISO will respond to the Scheduling Coordinator as to whether or not the CAISO agrees that the facility is eligible to be a Use-Limited

- 2) The section 3.1 further indicates that Use Plan for Hydro can be updated intra-monthly. This statement should be in line with tariff<sup>3</sup> which includes pumping load as well.
- 3) The section 3.1 of straw proposal states that Hydro, pumping load, and non-dispatchable ULRs are not committed in RUC process, but they should offer into RUC if available. This is confusing. If such resources are not committed in the RUC process then why should they be required to be offered for RUC?
- 4) The straw proposal at page #8, the second last box of the flow chart, indicates that exemption from offering every hour applies to ULRs and Extremely Long Start resources. Does this exemption apply to RA Imports with multi-block hour bids? i.e. can imports be made as an RA offer for those block-hours only?

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<sup>3</sup> **40.6.4.2 Use Plan.**

The Scheduling Coordinator shall provide for the following Resource Adequacy Compliance Year a proposed annual use plan for each Use-Limited Resource that is a Resource Adequacy Resource. The proposed annual use plan will delineate on a month-by-month basis the total MWhs of Generation, total run hours, expected daily supply capability (if greater than four hours) and the daily Energy limit, operating constraints, and the timeframe for each constraint. The CAISO will have an opportunity to discuss the proposed annual use plan with the Scheduling Coordinator and suggest potential revisions to meet reliability needs of the system. The Scheduling Coordinator shall then submit its final annual use plan. Scheduling Coordinators for Use-Limited Resources must submit the proposed and final annual use plans in accordance with the schedule set forth in the Business Practice Manual. The Scheduling Coordinator will be able to update the projections made in the annual use plan in the monthly Resource Adequacy Plans. Hydroelectric Generating Units and Pumping Load will be able to update use plans intra-monthly as necessary to reflect evolving hydrological and meteorological conditions. The annual use plan must reflect the potential operation of the Use-Limited Resource at a level no less than the minimum criteria set forth by the Local Regulatory Authority for qualification of the resource.