



California ISO
Your Link to Power

White Paper

Standard Resource Adequacy Capacity Product

**White Paper
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1 INTRODUCTION

This purpose of this white paper is to clarify and update specific topics related to the Standard Capacity Product (SCP) in preparation for the Final Draft Final Proposal which is scheduled for posting on February 27, 2009. That document will reflect the complete Standard Capacity Product proposal which will be used to prepare for the ISO Board of Governors meeting scheduled for March 26, 27, 2009.

The SCP topics discussed in this paper are:

- Clarification to the Target Availability Value calculation;
- Additional information regarding the Availability Standard and Incentives;
- Updated discussion regarding the availability target for the Non-Resource Specific Imports;
- Clarifications regarding Ambient Outages relative to the determination of a resource's actual availability.
- Additional details about the Unit Substitution Process;
- Updated Grandfathering proposal to facilitate the transition to SCP.

The ISO is requesting that stakeholders submit their comments on this proposal to SCPM@caiso.com by February 20, 2009.

2 AVAILABILITY STANDARD, CHARGES AND CREDITS

Target Availability Value

There will be a unique target availability value established for each month of the compliance year (12 values for each year), calculated using the actual RA fleet availability for the RA resources (excluding Use Limited Resources and non-resource specific imported RA) during each respective month over each of the past three years. In its previous proposal, the ISO proposed a single annual target value. The ISO now proposes a unique value for each month of the year as this will provide a more equitable target for resources to be measured against as different months of the year have different outage profiles. This change should mitigate stakeholder concerns that a single annual target value is unfair and may not be nearly revenue neutral to a resource that actually achieves an actual annual availability that is equal to the target annual availability.

The target availability value will be calculated using an RA fleet that includes RA resources that have been grandfathered so that there are ample RA resources in the calculation (if we exclude grandfathered RA resources, then the RA fleet may be only a few hundred RA resources and not comparable to the 600-resource RA fleet that is currently supplying RA capacity).

Two types of resources will be excluded from this calculation, Use Limited Resources (ULR) and non-resource specific imported RA. The reason for excluding ULRs from the availability target calculation hinges on the fact that the historical outage data for these types of resources does not differentiate between forced outages and outages due to energy limits. At the point when ULR outage data provides this type of distinction, it will be included in the target calculation. The non-resource-specific RA import resources will

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not be included in the calculation of the target availability value (these types of resources have their own unique metric).

Availability Standard and Incentives

The financial penalties and bonus payments will be settled all within the same settlement month. After consulting internally with its Finance department, the ISO has concluded that there is no need to wait until the penalty funds are received to later pay out the bonus payments.

The ISO clarifies the following regarding the payment of incentives: The ISO expects the amount of any excess funds in a month beyond what is paid out as bonus payments to be very small, if any, as the cap is three times the financial penalty rate; the ISO believes it is efficient to establish a simple mechanism to pay out this small amount of funds each month if there are any funds to pay out as excess; and the ISO has chosen to pay the funds to load because load is the entity that is paying for RA capacity (both RA procurement and backstop procurement).

The ISO will change the nomenclature in the SCP from “financial penalties” and “bonus payments” to “non-availability charges” and “availability credits.”

Non-Resource-Specific RA Imports

The ISO clarifies that non-resource-specific RA imports are to be separated into a distinct SCP category. This category will have its own self-funded account where monies that come in from non-availability charges assessed to non-resource-specific RA imports will be used to fund availability credits to non-resource-specific RA imports. Separate accounting is necessary as the metric for non-resource-specific RA imports is different than the metric for other types of SCP RA resources and needs to be treated separate from the other SCP capacity.

The target availability for non-resource-specific RA imports will be set at 100% with no dead band.

The incentive mechanism for this category will use the same \$/MW/hour penalty rate as for internal generators (i.e., the mechanism that will apply generally to SCP capacity for which non-availability charges and availability credits are applicable).

The money collected from non-availability charges assessed to non-RA imports will be used to provide availability credits to non-resource-specific RA import resources that achieve 100% for the period, with a ceiling rate comparable to the rate for internal generators. If there are excess funds, then the same approach will be used as for internal generators.

The non-resource-specific RA import resources will not be included in the calculation of the target availability value for other RA capacity as these resources have their own unique metric.

It is assumed that any resource-specific imported RA capacity will be treated like internal generators for purposes of SCP - they would use SLIC to report Outages, and the ISO would insert default bids for them if these resources fail to offer their RA capacity and are not on an Outage.

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Ambient Outages

An *Ambient* Outage is a type of Outage where the cause is due to ambient conditions outside of the resource operator's control. Its purpose is to classify an Outage in such a way that it does not require a submittal of a 48-hour Forced Outage report per the ISO tariff and is not publicly posted as a *Forced* Outage if it would be considered *Forced* according to the request timeline for submitting Outages.

In order for an Outage to be classified as an *Ambient* Outage, it must fall in the Forced Outage timeframe *and* it must use predefined cause codes that describe ambient conditions.

The ISO proposes that Ambient Outages, with the exception of those caused by Uncontrollable Forces (as defined in Appendix A to the Tariff) will count against the availability of all SCP resources. Uncontrollable Forces are defined as "Any act of God, labor disturbance, act of the public enemy, war, insurrection, riot, fire, storm, flood, earthquake, explosion, any curtailment, order, regulation or restriction imposed by governmental, military or lawfully established civilian authorities or any other cause beyond the reasonable control of the CAISO or Market Participant which could not be avoided through the exercise of Good Utility Practice."

Consideration will be made in assessing the actual availability of SCP resources that qualify as use-limited resource under the ISO Tariff. The ISO proposes that ambient outages for use limited resources (ULR) will be counted against their availability as they would for any other SCP resource, but only up to a point. Once a use limited resource encounters an energy limit constraint, ambient outages would no longer count against the SCP availability determination for the relevant month. The rationale for this exemption is as follows. Use limited resources provide monthly advisory use plans to the ISO that indicate their energy limitations. The ISO uses this information to determine how to best utilize the resources to meet system needs. These resources are expected to provide the full amount of RA capacity that they are contracted to supply within the energy limit constraints of the resource. Therefore, until an energy limit constraint is encountered, the resource is expected to provide the full amount of RA capacity that it has sold.

To ensure that ULRs provide reasonably accurate use plans to the ISO, the ISO will assess the accuracy of resource use plans compared to actual operation of the resource. The chronic submittal of inaccurate use plans will be brought to the attention of the resource and any relevant LRAs.

The following is a summary of the SCP Application of Ambient Outages:

- Ambient Outages caused by Uncontrollable Forces will not be counted against availability
- Ambient Outages that are due to the fact that the ISO has requested a resource to run up to the total of their operational environmental limit will not be counted against availability
- Calculation of the amount of ambient derate that will be applied toward a non-availability charge (penalty)
 - During the month, the number of MWs of ambient derates will be totaled for each resource.

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- Ambient de-rates due to Uncontrollable Forces will be subtracted from the total
- Ambient de-rates due to exceeding use-limited limits will be subtracted from the total
- The remaining amount will be applied toward the non-availability charge

For each resource each month:

Ambient Outages counted against availability = Total Ambient Outages – Uncontrollable Forces – exceeding set limits

The ISO will review the current ambient outage SLIC codes and will modify them as necessary for implementation of the SCP policy described above.

3 UNIT SUBSTITUTION

The ISO's Draft Final Proposal included a provision to allow a supplier of RA capacity that is tied to a specific generating resource the ability to substitute an alternative resource in the event the RA resource is on an outage, and by means of such substitution to avoid counting the outage of the RA resource toward the monthly availability assessment. This provision will offer reliability benefits by encouraging the availability of otherwise non-RA capacity when RA resource outages occur, provided the substitute is comparable to the original RA resource. Comparability will be determined based on a pre-approval process by the ISO for potential replacement units. This will be done so that the ISO would not need to assess the acceptability of the substitute in real time. In addition, the ISO will allow such substitution only in the day-ahead time frame. As such the supplier would need to submit a request for substitution before the close of the IFM. The ISO would have the discretion of approving this request.

Clarifications to the Draft Final Proposal

- Resources designated to meet local RA needs will need to pre-qualify the units that could be substitutable in the event of a forced outage. A template will be developed for submitting these requests to the ISO. It is contemplated that they will be required with the annual showing and will be approved prior to the beginning of the year.
- For local substitutions, an ISO evaluation will be done to ensure that the substitute resource is electrically equivalent (connected at the same bus or otherwise suitable).
- Resources designated for system RA needs will not be required to pre-qualify alternate units for substitution. When a system RA unit has an outage that may count against its availability, the supplier, prior to the close of the IFM, may request the use of a non-RA unit to be used in the place of the original unit. The ISO will make every effort to accommodate these requests to the extent that they provide the same level of reliability as the originally designated resource. For example if a supplier requests a substitute unit that would still cause the ISO need to procure backstop capacity, that unit substitution request would be denied.
- SCs for resources could request unit substitution in the event of a forced outage to avoid non-availability charges. Also, the ISO, at its discretion, could contact the SC of a resource and request a substitution in order to avoid backstop procurement.

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4 TRANSITION ISSUES

This section begins with a summary of the grandfathering proposal that was presented in the January 7 Draft Final Proposal followed by most recent revisions to that proposal.

January 7 Draft Final Proposal.

Contracts signed:	Grandfathering Status
Before January 1, 2009	Exemptions will be provided to RA contracts for which the contracting parties certify that the availability standards and incentives in their contracts are at least equal to the requirements set forth in the SCP tariff language. This exemption lasts for the life of the contract. The RA capacity in these contracts will not be tradable.
Between January 1, 2009 and FERC approval of SCP	Exemptions will be provided to RA contracts for which the contracting parties certify that the availability standards and incentives in their contracts are at least equal to the requirements set forth in the SCP tariff language. This exemption lasts for 5 years, until the 2014 annual RA showing. After that point the RA capacity from these contracts will be required to comply with the SCP tariff language. Until this time, the RA capacity in these contracts will not be tradable.
After FERC approval of SCP	No grandfathering will be available for these contracts.

Updated Proposal

Contracts signed:	Grandfathering Status
Before January 1, 2009	Exemptions will be provided for the term of the RA contracts. Renewals and evergreen type extensions will not extend the term of the grandfathering. Resources will be required to certify the start date of the contract, the expiration date and the amount of capacity that will be grandfathered.
After January 1, 2009	No grandfathering will be available for these contracts.

In addition to the revisions provided in the table above, the ISO has also considered the case of a resource that has RA capacity for grandfathered contracts along with RA capacity that is not grandfathered and is subject to availability standards, charges and credits of the Standard Capacity Product. The follow examples show how the availability will be impacted when a resource with this type of arrangement has an outage that counts against availability.

Sample Resource Data:

- Pmax = 600 MW
- Sold RA Capacity = 400 MW made up of:
 - Grandfathered RA Capacity (non-SCP MW) = 300 MW

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- SCP MW = 100 MW

Calculation to determine the SCP MW subject to count against availability:

$$\text{Max } \{0, (\text{Total Outage MW} - [\text{Pmax} - \text{Total RA Sold}])\} * (\text{SCP MW} / \text{Non-SCP MW})$$

Outage example 1 – 50 MW forced outage

In this example the capacity of the unit has been reduced from 600MW to 550 MW. The total RA Capacity that was sold (SCP MW and Non-SCP MW) is equal to on 400 MW of the unit. Because the total RA capacity that was sold is not affected by the outage, it would not count against the SCP availability standard.

$$\begin{aligned} & \text{Max } \{0, (50 \text{ MW} - [600\text{MW} - 400 \text{ MW}])\} * 100\text{MW}/300\text{MW} \\ & 0 \text{ MW} * 25\% = 0 \text{ MW of SCP subject to count against availability} \end{aligned}$$

Outage example 2 – 400 MW forced outage.

In this scenario the capacity of the unit has been reduced from 600 MW to 200 MW. The total RA capacity that was sold will be affected by this outage by 200 MW. The first 200 MW of the outage were not sold as RA capacity, but the last 200 MW of the outage will be applied to the sold RA capacity pro-rata between the SCP and Non SCP MW.

$$\begin{aligned} & \text{Max } \{0, (400 \text{ MW} - [600\text{MW} - 400 \text{ MW}])\} * 100\text{MW}/300\text{MW} \\ & 200 \text{ MW} * 25\% = 50 \text{ MW of SCP subject to count against availability} \end{aligned}$$

Outage example 3 – 600 MW forced outage

In this scenario the entire unit is forced out and all of the RA MW sold as SCP will be counted against availability.

$$\begin{aligned} & \text{Max } \{0, (600 \text{ MW} - [600\text{MW} - 400 \text{ MW}])\} * 100\text{MW}/300\text{MW} \\ & 600 \text{ MW} * 25\% = 100 \text{ MW of SCP subject to count against availability} \end{aligned}$$

5 NEXT STEPS

This is the current schedule:

February 6 – Publish White Paper

February 13 – Conference Call

February 20 - Written comments due to SCPM@caiso.com

Week of February 23 – Publish Updated Draft Final Proposal

March 26, 27 - Board of Governors Decision

April – File Tariff language.