



California ISO
Your Link to Power

Issue Paper

Standard Capacity Product II

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1. Executive Summary

Effective January 1, 2010, the ISO will implement the Resource Adequacy (RA) Standard Capacity Product (SCP) as approved by the Federal Energy Regulatory Commission (FERC) by order dated June 26, 2009 (ER09-1064-000).¹ FERC approved the SCP on the grounds that it will: (1) enable market participants to efficiently and flexibly buy, sell, and trade RA capacity without the burden of negotiating the availability requirements of each transaction; and (2) establish uniform metrics and provide market participants with a readily-available means to satisfy their RA requirements, which will enhance reliability. Under SCP, the ISO will, in broad terms, develop an availability standard for each month of the year that it will compare to the actual monthly availability of the RA capacity of each RA resource, which will be based on the resource's total hourly available RA capacity over all availability assessment hours of the month divided by its total hourly RA capacity for those hours. An RA resource whose actual monthly availability exceeds the target availability standard (plus a 2.5 percent tolerance band) will be eligible to receive an availability incentive payment. Conversely, an RA resource whose actual monthly availability falls below the target availability standard (plus a 2.5 percent tolerance band) will be subject to a non-availability charge for the month. The availability incentive payments will be funded by, and only to the extent of, the non-availability charges that are assessed for the same month.

As proposed by the ISO and approved by FERC, certain RA resources are temporarily exempt from the SCP availability charges and payments. Those exempt resources are: (1) demand response; and (2) resources whose qualifying capacity value is determined by the California Public Utilities Commission (CPUC) or a local regulatory authority (LRA) using historical output that has not been adjusted to correct for the possible double-counting of outages (this includes wind, solar, non-dispatchable cogeneration, non-dispatchable biomass and non-dispatchable geothermal facilities). In granting these exemptions, FERC's June 26 Order was clear that the exemptions are temporary and directed the ISO to work with stakeholders, the CPUC, and LRAs to end the exemptions in a timely manner. The ISO is undertaking this initiative, called Phase II of the SCP, or SCP II, for the purpose of designing metrics and developing provisions that enable the availability standard to apply to these temporarily exempted resources.

One key issue to be considered in this initiative is that the CPUC (and potentially other LRAs) RA counting rules recognize the poor historical performance of a resource through a reduction to its future qualifying capacity value, whereas SCP will take forced outages and temperature-related ambient de-rates of capacity into consideration in determining the actual availability of a resource in a given month. If both approaches are applied, a resource could be subject to a reduced qualifying capacity value and non-availability charges for the same outage or de-rate. The CPUC, other LRAs and ISO must resolve this "double counting" of outages issue so that the temporary exemption can be terminated and the ISO can proceed to apply SCP availability standards to wind, solar, and other non-dispatchable intermittent resources that are listed as RA resources in a load serving entity's RA plan as required by FERC's June 26 Order.

Second is the issue of how the ISO will integrate into its markets and systems the vast majority of demand response that participates in retail demand response programs, such as Emergency Triggered Demand Response and Price Responsive Demand Response. These retail demand response programs are included as RA resources by the CPUC's counting rules, but exist

¹¹ The FERC order is located on the CAISO website at: <http://www.caiso.com/23d9/23d9c3c11970.pdf>

outside of the ISO market. The ISO therefore has no ability to directly monitor the performance or availability of these resources. In addition, the CPUC's RA program applies different treatment to demand resources than other RA resources. For example, the performance and RA counting of demand response resources enrolled in retail demand response programs are not determined on a resource basis, but on a program basis through the application of a CPUC-approved Load Impact Protocol. The Load Impact Protocol determines the qualifying capacity of a retail demand response program, which is then "taken off the top" of the system RA obligation. In addition, the qualifying capacity taken "off the top" is multiplied by 115 percent to reflect the demand response program's reduction in load, which further reduces the RA requirement of CPUC jurisdictional load-serving entities. There is also an issue in determining the availability of wholesale demand response resources based on outage reporting information. At this time, outage reporting is not required for demand response resources, nor has the ISO established the rules or considered potential modifications to its outage reporting system to accommodate such a requirement.

These are non-trivial technical and policy challenges that must be overcome in determining how SCP availability standards, and related payments and charges, will apply to wholesale and retail demand response programs. Again, these matters must be resolved so that the temporary exemption can be replaced with SCP availability standards for demand response resources that have RA capacity obligations consistent with the June 26 Order.

In the end, the goal of this market design initiative is to extend application of the standard capacity product so that it is the single standard for all RA capacity.

2. Introduction

2.1. Background

In the June 26 Order, FERC accepted in part and rejected in part the ISO tariff amendment to implement SCP. In that order, FERC granted temporary exemptions from the SCP availability charges and payments for:

1. Resources whose qualifying capacity value is determined by the CPUC or a LRA using historical output that has not been adjusted to correct for the possible double-counting of outages (this includes wind, solar, non-dispatchable cogeneration, non-dispatchable biomass and non-dispatchable geothermal facilities); and
2. Demand Response.

FERC directed the "CAISO to work with stakeholders, the CPUC, and Local Regulatory Authorities to determine when the proposed exemptions should ultimately sunset, and the CAISO and stakeholders should diligently work toward a sunset in a timely manner." This initiative, known as "SCP II", addresses the FERC order.

2.2. Definition of Deferred Resource Types

Section 40.9.2 of the Tariff² defines the types of resources that are currently exempt from the availability charges and payments of the Standard Capacity Product. Specifically subsection (4)

² Section 40 of the tariff which pertains to Resource Adequacy can be found at: <http://www.caiso.com/2471/24719720e850.pdf>

describes these types of resources that are temporarily deferred:

Demand response resources and resources whose Qualifying Capacity value is determined by historical output from the CPUC or a Local Regulatory Authority that does not adjust the historical output data to correct for the possible double-counting of Outages will not be used to determine Availability Standards, will not be subject to Non-Availability Charges or Availability Incentive Payments, and will not be subject to the additional Outage reporting requirements of this Section 40.9.

The FERC Order accepted this exemption, but offered the following guidance:

56. We accept the CAISO's proposal to exempt from the proposed availability standards resources whose qualifying capacity is determined by historical output. As the CAISO explains, existing resource adequacy rules treat certain resources differently in determining their amount of qualifying capacity. Under the existing CPUC market rules, resources whose qualifying capacity is determined by historical output are penalized for poor performance through a reduction of their qualifying capacity. Therefore, it would be a harsh result to apply the same availability standards, which are designed to penalize poor performance, to resources already subject to qualifying capacity adjustments. We find that doing so could potentially result in penalizing such resources twice for the same outage or de-rate. As long as this counting feature of the market continues, we find the proposed exemption to be permissible and not unduly discriminatory.

57. We also accept the CAISO's proposal to temporarily exempt demand response resources due to on-going efforts to enhance the manner in which demand response resources participate in the CAISO's markets. We acknowledge the CAISO stakeholder initiatives and CPUC proceedings to enhance the manner in which demand response resources participate in the CAISO's markets, and therefore we are not inclined to take any action in the instant proceeding that might disrupt these current processes or delay the filing of proposed demand response enhancements with the Commission. Accordingly, we find the CAISO's proposal to temporarily exempt demand response resources is supported and not unduly discriminatory.

58. To be clear, we find the CAISO's proposal to exempt these resources to be just and reasonable and not unduly discriminatory because these issues are being addressed in ongoing CAISO and CPUC proceedings and the exemptions are, therefore, temporary. To that end, we direct the CAISO to work with stakeholders, the CPUC, and local regulatory authorities to determine when the proposed exemptions should ultimately sunset, and the CAISO and stakeholders should diligently work toward a sunset in a timely manner. In this regard, we direct the CAISO to post a biannual status report relating to the application of availability standards to all resource adequacy resources on its internet web site. The CAISO should post the first such report within 45 days of the date of this order. The reports will serve as a means for the Commission and market participants to monitor the progress of these efforts to sunset the exemptions and as the basis for the market participants and the Commission to determine if the efforts to sunset the exemptions are unreasonably delayed.

3. Design Features and Issues to be Resolved

3.1. Scope and Overview of SCP II

Based on a data sample from 2009, approximately 12% of RA capacity from generating units is exempted from the 2010 availability standards based on their resource type.³ The intention of this proposal is not to change the current SCP rules provided in the Tariff, but to standardize the existing rules for all RA resources to the extent possible. The following summarizes the key features of the standard capacity product⁴:

- Availability Standard. Resource availability will be measured on a monthly basis and compared against a single availability standard or target based on the historic performance of the RA resource fleet during the peak hours of each month of the previous year.
- Availability Incentives. Each resource is expected to meet or exceed the target availability standard. On a monthly basis the ISO will assess financial penalties to resources whose availability falls short of the target, and will provide bonus payments to resources whose availability exceeds the target. Bonus payments are funded through the financial penalty revenues so that this mechanism is financially neutral on a monthly basis.
- Unit Substitution. A resource owner is able to substitute a non-RA resource for an RA resource on forced outage in order to avoid the outage being counted against the RA resource's availability. A pre-approval process is required to ensure that the replacement capacity is comparable to the original RA capacity in an operational sense.
- Transition to SCP. There are provisions for transitional grandfathering of existing RA contracts that were executed prior to June 28, 2009.

The following considerations are not within the scope of this initiative:

- Replacement rule. In the PUC RA proceeding, some stakeholders suggest that the standard capacity product should include forced and scheduled outages in the availability calculations. The scope of the current initiative is narrowly focused on FERC's requirement include all RA resources under a single availability standard; it is not to redefine the calculation of the standard.
- Implementation issues associated with SCP – To the extent that there is overlap with the implementation of the current SCP program, technical issues related to the 2010 implementation of SCP are outside the scope of this stakeholder process.

³ This estimate was performed using generation RA resources only; it excluded imports, which if included would have made the percentage smaller. Demand Response RA resources were also not available for this calculation.

⁴ For more information regarding the original SCP market design effort and stakeholder process, refer to the "2nd Draft Final Proposal, Standard Resource Adequacy Capacity Product" posted at <http://www.caiso.com/2362/2362736c18e60.pdf>

3.1.1. Resources Whose Qualifying Capacity Value is Determined by Historical Output from the CPUC or a Local Regulatory Authority

The following resources are temporarily exempt from the applicability of non-availability charges and payments due to the method used to calculate their qualifying capacity:

- Solar
- Wind
- Non-dispatchable biomass resources, non-dispatchable geothermal resources, and non-dispatchable cogeneration resources

Under the existing CPUC RA counting rules, resources whose qualifying capacity is determined by historical output are penalized for poor performance through a reduction of their qualifying capacity. Historical output is currently not adjusted to reflect the decrease in output that may arise during the period of a forced outage. Under SCP, the actual availability of a resource in a given month is determined based on the extent to which it has forced outages that impact its RA capacity. Applying both of these standards to these types of resources could be exceedingly severe because a resource potentially be penalized for the same outage (or de-rate) twice. The CPUC and ISO must resolve this “double counting” of outages issue.

3.1.2. Demand Response Resources

As mentioned above, FERC agreed to let the ISO temporarily exempt demand response resources from the availability standards because of current efforts underway to enhance these products. The following products fall under the demand response category.

Retail Programs:

- Emergency Triggered Demand Response
- Price Responsive Demand Response

Wholesale Products:

- Participating Load
- Proxy Demand Resources

There are several challenges in applying availability charges and payments to these types of resources which the ISO and CPUC must resolve. The most significant challenge is integrating into the ISO markets and systems the vast majority of demand response that participates in retail demand response programs. These retail demand response programs, although considered RA resources, exist outside of the ISO market and, therefore, the ISO has no ability to directly monitor the performance and, therefore, availability of these resources. The second challenge is how the demand response resources are treated under the CPUC’s resource RA program. Currently, the “performance” and resource adequacy counting of demand response resources enrolled in retail demand response programs is not determined on a resource basis, but on a program basis through the application of a CPUC approved Load Impact Protocol (*D.08-04-050, April 24, 2008*). The Load Impact Protocol determines the net qualifying capacity of a retail demand response program which is “taken off the top” of the system RA obligation. This “off the top” megawatt quantity translates into a resource adequacy counting credit that reduces the resource adequacy requirement of CPUC jurisdictional load-serving entities. Furthermore, the net qualifying capacity associated with retail demand response programs and

claimed as a credit by CPUC jurisdictional load-serving entities is multiplied by 115% to reflect the demand response program's reduction in load translating into an additional reduction in the system RA obligation. Thus, there are two non-trivial technical and policy challenges to overcome in determining how SCP availability and payments will apply to retail demand response programs, that is 1) the integration of retail demand response programs into ISO markets and systems and 2) how retail demand response programs are essentially treated as a special type of RA resource that is "taken off the top," reducing the RA requirement of CPUC jurisdictional load-serving entities.

Apart from these challenges, emergency triggered demand response resources are a unique type of the retail demand response programs whose design and use are being addressed through Phase 3 of the CPUC demand response proceeding (R.07-01-041).

The ISO offers wholesale demand response products, specifically the participating load product and proxy demand resource product. Both of these products are designed to fully integrate into the ISO markets and systems, comparable to a generator. Tracking performance of these resources is straightforward because the ISO settles these demand response resources participating in the wholesale market based on their performance. However, a challenge exists in determining the availability of wholesale demand response resources based on outage reporting information. At this time, outage reporting is not required for demand response resources, nor has the ISO established the rules or considered potential modifications to its outage reporting system to accommodate such a requirement.

3.2. Role of the CPUC and other Regulatory Authorities

As mentioned previously the goal of this market design effort and stakeholder process is to amend the tariff to extend the SCP availability charges and payments to all RA resources. In order to streamline this change, it will be important for the CPUC, other LRAs, and the ISO to engage in a coordinated and collaborative effort, with input from stakeholders, to address the issues raised in the SCP II initiative. Two main issues must be examined and considered:

- Counting conventions for qualifying capacity for deferred RA resources types
- Demand response eligibility and counting for RA

The CPUC has recently issued its Order Instituting Rulemaking (OIR) for the RA program for the 2011 compliance year (R.09-10-032). Addressing these two issues will be critical to the outcome of that proceeding. A foundational principle of this issue paper and the SCP II initiative as a whole is that counting rules will be addressed by the CPUC and other LRAs.

Over the years, the CPUC has modified its counting rules to better align with current resource adequacy needs; this enhancement will eliminate the "double counting" of outage concerns of stakeholders. By establishing dependable qualifying capacity values, SCP availability standards can be extended to the temporarily exempt resources without undue penalty.

4. Schedule of Key Dates

December 11, 2009 – Stakeholder conference call to discuss issue paper

December 14, 2009 - CPUC Workshop on SCP

December 18, 2009 – Stakeholder comments due on issue paper

January 13, 2010 – Post Straw Proposal

January 20, 2010 – Stakeholder Meeting to discuss Straw Proposal

January 27, 2010 – Stakeholder Comments due on Straw Proposal

February 3, 2010 – Post Draft Final Proposal

February 10, 2010 – Stakeholder conference call to discuss Draft Final Proposal

February 17, 2010 – Stakeholder comments due on Draft Final Proposal

March 25, 26 – Board of Governors meeting