

40.9.3 Availability Assessment

40.9.3.1 Local and System RA Capacity Availability

(a) **Availability Assessment Hours**

(1) Prior to the start of each Resource Adequacy Compliance Year, the CAISO shall establish and publish in the Business Practice Manual the Availability Assessment Hours applicable for resources providing local and/or system Resource Adequacy Capacity for each month of that year.

Comment [A1]: Given the issues with changing AAH this past year, PG&E recommends that the CAISO specify how far in advance the CAISO plans to provide availability assessment hours to stakeholders in its next Tariff Clean-Up initiative.

(2) The Availability Assessment Hours shall be a pre-defined set of five consecutive hours for each month that –

Comment [A2]: PG&E recommends that the CAISO insert consistent a reference to 40.9.3.1a(1) in its next Tariff Clean-Up Initiative.

(A) correspond to the operating periods when high demand conditions typically occur and when the availability of Resource Adequacy Capacity is most critical to maintaining system reliability:

(B) vary by season as necessary so that the coincident peak load hour typically falls within the five-hour range each day during the month, based on historical actual load data; and

(C) apply to each Trading Day that is a weekday and not a federal holiday.

Comment [A3]: PG&E recommends the CAISO provide more detail in the tariff on how historical load data is used in setting AAH in its next Tariff Clean-Up initiative.

(b) **Must Offer Availability Assessment.** The CAISO shall determine the extent to which each resource providing local and/or system Resource Adequacy Capacity made that capacity available to the CAISO ~~each day during the in each~~ Availability Assessment Hours ~~of the day~~ by comparing –

Comment [A4]: Rewrite: “in each Availability Assessment Hour for each Trading Day that is a weekday and not a federal holiday”

Comment [A5]: The term “comparing” does not indicate how the two sub-sections interact. The section should be more clear that the assessment will divide (1) by (2). This term is used the same way two other times.

(1) the MWs of local and/or system Resource Adequacy Capacity for which the Scheduling Coordinator for the resource submitted Economic Bids or Self-Schedules in the Day-Ahead Market and the Real-Time Market on a given day; and

Comment [A6]: Seems like using “quantity” rather than “MWs” might be more clear. There are six instances of the use of “MWs” in these sections that could be changed.

(2) the MWs of local and/or system Resource Adequacy Capacity for which the Scheduling Coordinator for the resource was required to submit Economic Bids or Self-Schedules in the CAISO Markets under the must-offer requirements applicable under Section 40.6 on a given day.

Comment [A7]: How DA and RT bids are handled should be included here rather than in 40.9.4(b)

Comment [A8]: Seems like “had a performance obligation” rather than “was required” might be more precise. There are three instances of the use of “was required” in these sections that could be changed.

40.9.3.2 Flexible RA Capacity

- (a) **Availability Assessment Hours.** The Availability Assessment Hours for a Flexible RA Resource shall be the same period as the must-offer obligation for the Flexible Capacity Category that is designated on the Resource Flexible RA Capacity Plan for that month, as set forth in Section 40.10.6.
- (b) **Must-Offer Availability Assessment.** The CAISO shall determine the extent to which each Flexible RA Resource made that capacity available in each Availability Assessment Hour of the day by comparing –
 - (A) the MWs of Flexible RA Capacity for which the Scheduling Coordinator for the resource submitted Economic Bids in the **Day-Ahead Market and the Real-Time Market**; and
 - (B) the MWs of Flexible RA Capacity for which the Scheduling Coordinator for the resource was required to submit Economic Bids in the CAISO Markets under the must-offer requirements applicable under Section 40.10.6.
- (c) **Flexible Capacity Category.** If a Flexible RA Resource is designated to provide Flexible RA Capacity and/or RA Substitute Capacity in more than one Flexible Capacity Category on the same day, the CAISO will assess the availability of the resource using the must-offer obligation for the **highest quality of Flexible Capacity Category** designated.
- (d) **Start-Up Less Than 90 Minutes.** For resources with a start-up time less than 90 minutes, the CAISO will use the resource's **MWs of capacity from zero to the EFC value** to assess the availability of the designated Flexible RA Capacity; provided that the Scheduling Coordinator for the resource does not submit Self-Schedules for the capacity from zero to PMin or for any portion of the capacity under the must-offer obligation for Energy. If the Scheduling Coordinator for the resource submits a Self-Schedule, the CAISO will deduct the MW value of PMin from the calculation of the resource's Flexible RA Capacity availability,
- (e) **Start-Up Greater Than 90 Minutes.** For resources with a start-up time greater than 90 minutes, the CAISO will use the MWs of capacity between the resource's PMin and EFC

Comment [A9]: Add: on a given day

Comment [A10]: How DA and RT bids are handled should be included here rather than in 40.9.4(b)

Comment [A11]: Add: on a given day

Comment [A12]: The hierarchy of quality of Flexible Capacity Category should be defined here.

Comment [A13]: There are several places in these sections of the Tariff that state "MWs of capacity" or "MWs in the Variable Energy Forecast" where the "MWs of" seems unnecessary. There are also several places where it seems like "capacity" should be used instead of "MWs".

value in the availability assessment and validate whether the Scheduling Coordinator for the resource submitted Economic Bids for all MWs designated on the Resource Flexible RA Capacity Plan.

(f) **Variable Energy Resources**

- (1) **Flexible RA Capacity Equal to EFC.** If the Flexible RA Capacity designated on the monthly Resource Flexible RA Capacity Plan is equal to the resource's EFC value, the CAISO will assess the availability of the designated Flexible RA Capacity based on the Economic Bids for Flexible RA Capacity the Scheduling Coordinator for the resource submitted up to the MWs in the Variable Energy Resource forecast applicable under Section 4.8.2.
- (2) **Flexible RA Capacity Less Than EFC.** If the Flexible RA Capacity designated in the monthly Resource Flexible RA Capacity Plan is less than the EFC value for the resource, the CAISO will assess availability using the ratio of the amount shown on the monthly plan to the relevant EFC value, and applies that ratio to the MWs of Economic Bids and the Variable Energy Resource forecast.
- (3) **VER Forecast Less Than Flexible RA Capacity.** If the MWs in the Variable Energy Resource forecast are less than the MWs of Flexible RA Capacity designated in the monthly Resource Flexible RA Capacity Plan, and the Economic Bids are greater than or equal to the forecast amount for that hour, the resource is 100 percent available up to the forecast amount.
- (4) **VER Forecast Greater Than Flexible RA Capacity.** If the MWs in the Variable Energy Resource forecast are greater than the MWs of Flexible RA Capacity designated in the monthly Resource Flexible RA Capacity Plan, the Scheduling Coordinator for the resource must submit Economic Bids equal to the forecast amount. If the Scheduling Coordinator for the resource submits Economic Bids for MWs above the forecast, or the resource generates above the forecast, the CAISO will limit the calculated availability to the forecast amount.
- (5) **No Day-Ahead Market Obligation.** For Variable Energy Resources that do not

Comment [A14]: the MWs of economic bids and the variable energy forecast are two separate measures. Is this ratio applied to the difference between the two?

Comment [A15]: rewrite: "the resource is considered 100 percent available"

have an obligation to submit Economic Bids into the Day-Ahead Market, the CAISO will base the availability assessment of the Flexible RA Capacity only on the resource's Economic Bids in the Real-Time Market.

Comment [A16]: This section should be included in 40.9.3.2(b)

40.9.3.3 Availability for Overlapping Local/System and Flexible RA Capacity

(a) **Overlap Determination.** The availability assessment for overlapping Resource Adequacy commitments shall apply to those MW hours in which a resource was subject to the must-offer obligations for local and/or system Resource Adequacy Capacity and Flexible RA Capacity in any Availability Assessment Hour and for any portion of the same capacity.

Comment [A17]: PG&E recommends the CAISO either create a different subsection (a) that defines "Overlapping Resource Adequacy Commitment" or create a defined term – this definition would indicate that overlapping capacity is only assessed once and that all overlapping resource adequacy commitments shall be treated as a commitment to provide Flexible RA Capacity.

(b) **Must-Offer Availability Assessment.** The CAISO shall determine the extent to which each resource with overlapping Resource Adequacy commitments made that capacity available to the CAISO in each overlapping Availability Assessment Hour of the day by comparing –

Comment [A18]: Since overlap can only occur with generic/flexible overlap, PG&E suggests a rewrite of "for each Trading Day that is a weekday and not a federal holiday"

- (1) the MWs of local and/or system Resource Adequacy Capacity and Flexible RA Capacity for which the Scheduling Coordinator for the resource submitted Economic Bids in the Day-Ahead Market and the Real-Time Market; and
- (2) the MWs of local and/or system Resource Adequacy Capacity and Flexible RA Capacity for which the Scheduling Coordinator for the resource was required to submit Economic Bids in the CAISO Markets, in accordance with the applicable must-offer requirements in Sections 40.6 and 40.10.6.

Comment [A19]: How DA and RT bids are handled should be included here rather than in 40.9.4(b).

(c) **Calculation.** The CAISO's calculation of the Availability Assessment for overlapping RA commitments shall count-

- (1) any portion of the overlapping MW only once; and
- (2) the total MWs of capacity at the higher of the Resource Adequacy Capacity commitment or the Flexible RA Capacity commitment.

Comment [A20]: Higher seems to indicate a numerical measurement. PG&E suggests a rewrite to "the performance obligation of overlapping capacity as a commitment to provide Flexible RA Capacity."

40.9.4 Additional Rules on Calculating Monthly and Daily Average Availability Assessment

(a) The CAISO shall determine a resource's monthly average availability on a percentage

Comment [A21]: Subsection eliminated with a definition for "Overlapping Resource Adequacy Commitment"

Comment [A22]: Rewrite: "Aggregated Availability Assessment Methodology"

basis, based on—:

(1) the availability assessment of the resource's minimum daily availability of local and/or system Resource Adequacy Capacity under Section 40.9.3.1, Flexible RA Capacity under Section 40.9.3.2, and overlapping Resource Adequacy commitments under Section 40.9.3.3, in the Day-Ahead Market and Real-Time Market;

Comment [A23]: Seems like it would make sense to make this a defined term.

(2) separately-calculated availability assessments for local and/or system Resource Adequacy Capacity in one category and Flexible RA Capacity in a second category, with availability in a hour with overlapping commitments under Section 40.9.3.3 accounted for in the Flexible RA Capacity category availability assessments;

Comment [A24]: Rewrite: "included in the second"

Comment [A25]: Rewrite: assessment

(3) the relative daily proportion of capacity provided as local and/or system RA Capacity and Flexible RA Capacity, including both overlapping and non-overlapping commitments based on the Availability Assessment Hours

Comment [A26]: This is fairly vague. Proportion of what to what? These ratios seem fairly important.

(4) including the capacity, duration, and must-offer requirement for local and/or system Resource Adequacy Capacity or Flexible RA Capacity on an Outage, except to the extent the resource provides RA Substitute Capacity for the outage in accordance with Section 40.9.3.6, the Outage is approved by the CAISO without requiring RA Substitute Capacity under other authority of Section 9 or Section 40, or the Forced Outage is excluded from RAIM under Section 40.9.3.4; and

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(5) including the capacity, duration, and must-offer requirement for any RA Substitute Capacity or CPM Capacity the resource is committed to provide.

Comment [A27]: This section does not distinguish how these 5 sub-sections interact with each other. PG&E recommends particular focus on this section.

It seems like defining Minimum Daily Availability with a definition that describes how each of the sub-sections interact with each other would eliminate the need for sub-sections (2)-(5).

(b) If the resource's minimum daily availability is the same in the Day-Ahead Market and the Real-Time Market, the CAISO will use the availability in the Real-Time Market in the calculation of the monthly average availability.

Comment [A28]: Eliminated when included in Must Offer Availability Assessment sections above.

(c) If the resource is committed to provide local and/or system RA capacity and Flexible RA Capacity in a month, but is not committed to does not provide both for the full month, the

CAISO prorates the number of days that local and/or system Resource Adequacy Capacity and Flexible RA Capacity was provided against the total number of days in the month.

40.9.5 Availability Standard

- (a) **Percentage.** The Availability Standard shall be 96.5 percent each month.
- (b) **Availability Range.** The CAISO shall apply the Availability Standard with a bandwidth of plus and minus two percent, which produces a range with a lower bound of 94.5 percent and an upper bound of 98.5 percent.

40.9.6 Non-Availability Charges and Availability Incentive Payments

- (a) **Non-Availability Charges.** A resource providing local and/or system Resource Adequacy Capacity, Flexible RA Capacity, or CPM Capacity that is subject to the availability assessment in accordance with Section 40.9.3 and whose monthly availability calculation under Section 40.9.4 is below the lower bound of the monthly Availability Standard of 94.5 percent will be subject to a Non-Availability Charge for the month.
- (b) **Availability Incentive Payments.** A resource providing local and/or system Resource Adequacy Capacity, Flexible RA Capacity, or CPM Capacity that is subject to the availability assessment under Section 40.9.3 and whose availability calculation under Section 40.9.4 is above the upper bound of the monthly Availability Standard of 98.5 percent will be eligible for an Availability Incentive Payment for the month.
- (c) **No Payment or Charge.** A resource providing local and/or system Resource Adequacy Capacity, Flexible RA Capacity, or CPM Capacity that is subject to the availability assessment under Section 40.9.3 and whose monthly availability calculation under Section 40.9.4 is equal to or between the lower bound of 94.5 percent and the upper bound of 98.5 percent of the Availability Standard will not be assessed a Non-Availability Charge nor paid an Availability Incentive Payment.

(d) Separate Calculation of Payments and Charges for Flexible RA Capacity. The CAISO will calculate separate Non-Availability Charges and Availability Incentive Payments for Resource Adequacy Resources providing Flexible RA Capacity.

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Comment [A29]: What is the purpose of this sub-section?

~~(d) **Advisory Period.** During the advisory period of March 1, 2016 through April 30, 2016, the CAISO will show the Non-Availability Charges and Availability Incentive Payments on Settlement Statements but will not include these Non-Availability Charges and Availability Incentive Payments on Invoices for financial settlement.~~

40.9.6.1 Determination of Non-Availability Charge

(a) **Calculation**

(1) **RA Capacity.** The Non-Availability Charge for a Resource Adequacy Resource providing local, system, or Flexible RA Capacity shall be determined by the resource's average monthly RA and Flexible RA MWS multiplied by the difference between the lower bound of the monthly Availability Standard of 94.5 percent and the resource's monthly availability percentage, and multiplying the product by the RAAIM price.

(2) **CPM Capacity.** The Non-Availability Charge for a Resource Adequacy Resource providing CPM Capacity shall be determined by the resource's average monthly CPM MWS multiplied by the difference between the lower bound of the monthly Availability Standard of 94.5 percent and the resource's monthly availability percentage, and multiplying the product by the maximum of the resource's CPM price and the RAAIM price.

(b) **RAAIM Price.** The RAAIM price shall be 60 percent of the CPM Soft-Cap Price in Section 43A.4.1.1.

~~(c) **Separate Collection of Non-Availability Charges for Flexible RA Capacity.**
Separately-calculated Non-Availability Charges collected for Resource Adequacy Resources providing Flexible RA Capacity will be held separate from other Non-Availability Charges assessed for Resource Adequacy Resources.~~

40.9.6.2 Determination of Availability Incentive Payment

(a) **Self-Funding.** The Availability Incentive Payment will be funded entirely through the monthly Non-Availability Charges assessed. Availability Incentive Payments for Resource Adequacy Resources providing Flexible RA Capacity will be funded exclusively

Comment [A30]: The use of the term average is not clear, since it appears that the CAISO is averaging averages. This is particularly complicated by the fact that the performance on each product affects which obligation takes precedence due to section 40.9.4. PG&E recommends particular focus on this sub-section.

For example, one can read the section as multiplying the average monthly RA capacity and multiplying the average flexible RA capacity separately. Alternatively, one can read the generic RA and Flexible RA as being averaged before being multiplied.

Please clarify how this performance obligation is being determined, and perhaps cite another section to help the reader understand the method being used.

Comment [A31]: Isn't the CPM Capacity a single quantity per month? It does not appear that average belongs here.

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Comment [A32]: What is the purpose of this sub-section? This is not documented on any stakeholder policy document and was not discussed during stakeholder process.

by Non-Availability Charges assessed against Resource Adequacy Resources providing Flexible RA Capacity.

(b) **Eligible Capacity.** The capacity of a Resource Adequacy Resource providing local, system or Flexible RA Capacity that is eligible to receive an Availability Incentive Payment shall be the resource's average monthly MWs of capacity that exceed the upper bound of the Availability Standard.

(c) **Calculation.**

(1) The monthly Availability Incentive Payment rate will equal the total Non-Availability Charges assessed for the month plus any unpaid funds under Section 40.9.6.2(d), divided by the total Resource Adequacy Capacity eligible to receive the Availability Incentive Payment that month.

(2) The Availability Incentive Payment rate shall not exceed three times the Non-Availability Charge rate.

(3) The Availability Incentive Payment the CAISO shall pay to each eligible resource shall equal the product of its eligible capacity and the Availability Incentive Payment rate.

(d) **Unpaid Funds.** Any Non-Availability Charge funds that are not distributed to Resource Adequacy Resources eligible to receive Availability Incentive Payments in a month will be added to the funds available for Availability Incentive Payments in the next month and will continue to roll over to the successive month until paid out or December 31, at which time the funds will be distributed to Load Serving Entities based on their load ratio share for the year. The CAISO will maintain a separate pool of undistributed Non-Availability

Charge funds collected and assessed for Resource Adequacy Resources providing Flexible RA Capacity.

Comment [A33]: What is the purpose of this change? This is not documented on any stakeholder policy document and was not discussed during stakeholder process.

Comment [A34]: What is the purpose of this change? This is not documented on any stakeholder policy document and was not discussed during stakeholder process.

Comment [A35]: Does the CAISO envision using the same load ratio share for both pools of funds?