Pacific Gas and Electric Company

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Regional Resource Adequacy – Load Forecasting Working Group, June 22, 2016

Submitted by	Company	Date Submitted
Alan Wecker (415) 973-7292	Pacific Gas & Electric	July 15th, 2016

Pacific Gas and Electric Company (PG&E) offers the following comments on the California Independent System Operator's (CAISO) Load Forecasting Working Group for the Regional Resource Adequacy initiative that was held on June 22, 2016.

PG&E offers comments on the following topics:

1. PG&E continues to support using an hourly load forecast to determine system and flexible RA obligations and allocations.
2. PG&E does not support the CAISO's load forecasting approaches provided in the stakeholder comments template. Instead, PG&E provides an alternative load forecasting approach that will allow for multiple different regulatory load forecasting processes.
3. Monthly Load Forecast Adjustments based on hydrological pumping load should be reviewed carefully to avoid creating unintended perverse incentives.

1. PG&E continues to support using an hourly load forecast to determine RA obligations and allocations.

In the June 22, 2016 Load Forecasting Working Group, the CAISO explained that it was moving away from an hourly load forecast due to concerns raised by stakeholders. These concerns relate to potential inaccuracies that stakeholders perceive to be a significant downfall to hourly load forecasting a year forward. PG&E understands that this perceived inaccuracy is associated with the potential for a load forecast with hourly granularity to increase forecast error rates. Additionally, the CAISO expressed concern that smaller entities may not have the capability to provide hourly load forecasts a year ahead of delivery.

PG&E continues to support using an hourly load forecast to better estimate the impact of Distributed Generation on load forecasts. As PG&E's analysis presented at the California Energy Commission shows, the coincidental peak load hour can have a large impact on the capacity that Behind the Meter Solar PV provides to meet CAISO peak load. [1] Using an hourly load forecast will improve the accuracy of load forecasts by better approximating the correct coincidental peak hour after the impacts

[1] Slide 7 of PG&E Presentation - Behind the Meter Solar PV in CA Load Forecasting and Planning http://docketpublic.energy.ca.gov/PublicDocuments/16-IEPR-05/TN211941_20160622T160619_Forecasting_Photovoltaic_Adoption_at_PGE.pdf

of Distributed Generation and other load modifying adjustments are included. As a result, using hourly load forecasts will eliminate the need for LSE-specific coincidental factors.

PG&E recognizes the concerns that other parties expressed in their Regional RA comments. Instead of reverting back to using coincidental factors, PG&E asks the CAISO to support additional work to determine the impact of moving to an hourly load forecast on load forecasting error rates. The CAISO should reach out to utilities to understand how they are forecasting future peak hours. This information will provide important data to determine whether an hourly load forecast is worth the investment in new tools and processes. On the issue of smaller LSEs not having the capability to conduct hourly load forecast, smaller entities themselves did not adequately explain why they are not capable of providing annual hourly forecasts, despite the CAISO requesting this type of information on the working group call. PG&E is looking forward to reviewing stakeholders' comments on this topic to better understand these concerns. PG&E believes that the availability of load forecasts at an hourly granularity is quickly becoming necessary to system reliability planning, particularly since flexible RA obligations are dependent on hourly load shapes at the LSE level. The CAISO should not constrain the availability of this information simply to reduce the burden on smaller LSEs.

2. <u>PG&E does not support the CAISO's load forecasting approaches provided in the stakeholder comments template. Instead, PG&E provides an alternative load forecasting approach that will allow for multiple different regulatory load forecasting processes.</u>

In its stakeholder comments template, the CAISO provides two alternatives that it asks stakeholders to comment on, and provides stakeholders an opportunity to provide their own alternative approaches. PG&E outlines its concerns associated with the two options provided and describes its recommended approach to allow for multiple different regulatory load forecasting processes.

a. Option 1) Allowing individual LSEs (or local/state forecasting agencies, including the CEC for California LSEs) to have the ability to provide both their Non Coincident Forecasts (no coincidence adjustment) and Coincident Peak Forecasts to the ISO (no ISO specified Coincidence Factor methodology, LSEs can utilize coincidence forecast calculation method suited for their needs individually, and this option is still subject to ISO coincidence method guidelines that would be provided, as well as ISO review).

PG&E does not believe the CAISO's Option 1, called the "MISO Approach" during the conference call, is appropriate for a broader regional ISO. This approach is not appropriate because LSEs have different requirements and different obligations to include in their load forecast depending on their LRA. Investor Owned Utilities, Community Choice Aggregators, Direct Access Customers, or Publicly Owned Utilities all have different regulatory structures that create inconsistencies between load forecasting methodologies. In a regional ISO, these inconsistencies increase as different states add other regulatory structures. Without a clear indication of when the regional ISO coincidental peak will occur, each LSE will have to forecast when the other LSEs' load will peak to determine a

coincidence factor. Using historical data is not likely to be accurate as Behind the Meter Solar PV growth increases at a rapid rate, as shown by the CEC in its peak shift analysis.[2] Providing an hourly load forecast allows each LSE to provide its most accurate forecast of its load (before and after load adjustments), and removes the need to approximate other LSEs' load forecasts.

b. Option 2) Requiring individual LSEs (or local/state forecasting agencies, including the CEC for California LSEs) to have the ability to only provide their Non Coincident Forecasts (no coincidence adjustment) and the ISO would apply a specified Coincidence Factor formula to all individual LSE load forecast submittals uniformly in order to determine the Coincidence Peak forecasts for individual LSEs (ISO specified Coincident Factor methodology with actual formula to be determined through this stakeholder process).

PG&E does not believe it has the information needed to address the CAISO's Option 2. Without an understanding of the ISO specified Coincident Factor methodology, it is not clear how useful providing the non-coincidental peak will be. If this methodology uses historic data, as suggested in the "Three year historic average CF method" presented during the Working Group meeting, PG&E believes this approach will be suboptimal as load migration and increasing DER penetration are not addressed.

c. If your organization does not support any of these potential options and believes there are other possible proposals that the ISO should consider please provide a detailed description of an alternative approach.

In addition to our support for an hourly load forecast, PG&E suggests the CAISO should take a compromise approach to load forecasting oversight. The CAISO should only fulfill an oversight role in load forecasting when there is not alternative LRA oversight that already occurs in other regulatory arenas. Therefore, PG&E proposes three separate categories of LSEs:

1) If the LRA with relevant jurisdiction approves an LSE's load forecast in a formal regulatory proceeding or venue, then the LSE should be required to request that the LRA provide the ISO with an hourly forecast of its total load.

2) If the LRA with relevant jurisdiction does not regularly approve an LSE load forecast in a regulatory proceeding or venue, then the CAISO should have the authority, but not an obligation, to adjust that LSE's hourly forecast based on historical deviations.

3) If the LRA only has a single LSE within its jurisdiction, PG&E recommends that the LSE/LRA must seek a third party to approve its hourly forecast. The third party could be another state authority like the CEC or an independent authority like the ISO.

[2] Presentation – Analysis of Peak Shift by California Energy Commission Staff http://docketpublic.energy.ca.gov/PublicDocuments/16-IEPR-05/TN211949_20160622T162315_Preliminary_Energy_Commission_Staff_Analysis.pdf

3. Monthly Load Forecast Adjustments based on hydrological pumping load should be reviewed carefully to avoid creating unintended perverse incentives

During the CAISO Load Forecasting Working Group, the California Department of Water Resources (CDWR) provided a helpful summary of its current methodology for forecasting pumping load. During the call, CDWR indicated that it had a strong preference to be allowed to adjust its load forecast on a monthly basis. The issue of accuracy of pumping loads is one that PG&E understands well. However, PG&E currently is not allowed to make changes to its monthly RA requirement based on expected pumping load. Without an understanding of the magnitude of CDWR's pumping load, we do not know how impactful an exemption for pumping load changes from monthly adjustment restrictions would be to PG&E's customers.

If monthly adjustments to load forecasts are allowed, other than for load migration, this would impact the System-wide RA requirement. It could also impact the Local Capacity Area-wide RA Requirement if the pumping load occurs at a resource in the Local Capacity Area. Initial Year-Ahead RA requirements are developed based on year-ahead LSE load forecasts. PG&E is concerned that if monthly adjustments are allocated solely to the LSE that is making an adjustment, this proposed exemption creates a perverse incentive to over-forecast in the annual process and to under-forecast in the monthly process. If the CAISO allows a pumping load exemption from Monthly Load Forecast Adjustment restrictions, it should clarify that how increases or decreases in monthly adjustments to load can increase or decrease the total RA requirement, and how that additional RA or reduction of RA will be allocated to LSEs.