



**BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA**

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Order Instituting Rulemaking to Oversee the
Resource Adequacy Program, Consider
Program Refinements, and Establish Annual
Local and Flexible Procurement Obligations
for the 2019 and 2020 Compliance Years.

Rulemaking 17-09-020
(Filed September 28, 2017)

MIDDLE RIVER POWER, LLC's RESOURCE ADEQUACY TRACK 3 PROPOSALS

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Middle River Power, LLC ("MRP") submits this proposal in response to the January 29, 2019 Amended Scoping Memo of the Resource Adequacy Program ("Amended Scoping Memo"). The Amended Scoping Memo established February 25, 2019 as the deadline for Track 3 proposals; that deadline was extended to March 4, 2019 pursuant to an email ruling issued by the Administrative Law Judge on February 22, 2019.

I. INTRODUCTION

MRP appreciates the opportunity to provide these suggestions to focus the efforts in Track 3 on continuing the reforms to the Resource Adequacy program. Specifically, MRP believes that two related steps are key to a sustainable RA framework.

First, expanding the multi-year procurement obligation to System and Flexible RA products will bring stability, efficiency and simplification to the RA procurement framework and provide value to ratepayers while helping support grid reliability.

In its February 21, 2019 Decision Refining the Resource Adequacy Program ("Track 2 Decision"), the Commission noted that the RA procurement issues driving the need for reform

have pertained to Local RA and that expansion to Flexible and System RA is “premature and needs to be fully explored.”¹ While the Commission indicated its intent to monitor and evaluate the multi-year Local RA program to consider expansion to Flexible or System RA or both in the future, concerns around system supply already exist and the need for flexible resources continues to grow. These concerns drive the need to act now. Directing an orderly transition to multi-year procurement for System and Flexible RA will provide the commercial stability needed to withstand near-term transitions. Delaying further risks having to take more precipitous action later that may not be effective to preserve resources at risk of economic retirement, resulting in higher costs to ratepayers.

As MRP has noted its comments in the Integrated Resources Planning proceeding, creating a stable regulatory environment will drive confidence in the likelihood of sufficient revenues for resource owners to make investments in major maintenance and upgrades needed to improve generator efficiency and flexibility. With this, California will be much better positioned to support important developments like electrification of the transportation sector and to navigate the longer-term transition to a renewable and zero-carbon resource supply by 2045.

Second, calibrating assumptions that drive the quantity of RA needed to meet load and manage variability and uncertainty is critical to a healthy RA program. Recognizing that there are significant efforts underway in various CPUC proceedings and at the California ISO to better quantify and define resource adequacy in California, MRP urges the Commission to incorporate updated conclusions and add transparency regarding 1) imports that are serving as RA resources; 2) forecasting assumptions, to account for unpredictable climate impacts and increased

¹ Decision Refining the Resource Adequacy Program, February 21, 2019, at p. 33.

variability in the generation fleet; and 3) the RA capability of the variable generation fleet, including behind-the-meter resources.

II. PROPOSAL

A) The Commission should require 3-year forward procurement for System and Flexible RA

MRP recommends that the Track 3 examine the benefits of holistic procurement of all RA products on the same forward timeline as the Commission's direction for Local RA. Procuring all three RA products together on the same timeline will achieve the efficiency and incentives needed for a stable RA program and supply the longer-term price signals for resources needed for grid reliability.

i. California depends on its natural gas-fired generation fleet for resource adequacy and the modern fleet needs to be sustained going forward given downward trends in RA supply

Dispatchable natural gas-fired generation resources will be essential for a reliable electric grid in California for the foreseeable future. These resources supply about half of the total system RA capacity in California,² and the modern fleet will continue to play an important role for reliability going forward as other sources of capacity continue to dwindle. Through 2025, California will see a net reduction in existing thermal generation capacity of over 7,000 GW due to the phase-out of once-through cooling units and announced retirements including the planned

² See the California ISO's Department of Market Monitoring's Q4 2018 Report on Market Issues and Performance, February 13, 2019 at p. 63.
<http://www.caiso.com/Documents/2018FourthQuarterReportonMarketIssuesandPerformance.pdf>

retirement of Diablo Canyon. These near-term predictable reductions in capacity resources illustrate the importance of long-term stable support for the modern fleet of natural gas-fired generation resources that will continue to be counted on to support reliability.

a. The resource adequacy value supplied from variable energy resources declines as more are added to the system, enhancing the near to medium-term need for other in-state resources

The flexible attributes of the modern natural gas-fired fleet are also important to California's grid as more uncontrollable behind-the-meter solar is anticipated to be added to the system. As the California ISO has noted, "[w]ith the continued expansion of VERs and behind-the-meter solar photovoltaic systems, both load and generation output will continue to create greater uncertainty between the day-ahead and real-time markets," and the system needs "flexible capacity products that address both predictable and unpredictable ramping needs."³

Another near-term dynamic that places further pressure on System and Flexible RA resources is the refinement in the calculation of the effective load carrying capability of variable energy resources under way in this proceeding. Recent reports and data illustrate the expanding need for longer-term supply of resources that can sustain grid operations into the late evening and early morning ramps. For example, the CPUC's Energy Division recently published a revised Monthly ELCC Proposal for 2020 RA Proceeding.⁴ In this proposal, the Energy Division highlights the decline in solar ELCC "relative to 2018 values due to significant increase

³ Second Revised Flexible Capacity Framework, April 27, 2018 at pp. 13, 14.
<http://www.caiso.com/Documents/SecondRevisedFlexibleCapacityFrameworkProposal-FlexibleResourceAdequacyCriteriaMustOfferObligationPhase2.pdf>

⁴ Administrative Law Judge's Ruling on Effective Load Carrying Capacity, February 13, 2019
<http://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M265/K376/265376517.PDF>

in solar penetration.”⁵ This statement is consistent with the implications and findings of a 2017 report on the flexibility needs of the future California power grid issued as a result of the collaborative research and development effort between the three IOUs and the Lawrence Livermore National Laboratory, known as California Energy Systems for the 21st Century. The report, titled *Role of Operating Flexibility in Planning Studies*, submitted in the CPUC’s Integrated Resources Planning Proceeding (R16-02-007), emphasized that the continued use of the existing planning reserve margin “requires robust calculations of the Equivalent Load Carrying Capability (ELCC) of resources to indicate a reliable system.”⁶ The report also concluded that “minimum stable levels of dispatchable generation can have a significant impact on results, while assumptions about how much flexibility can be obtained from the rest of the interconnection can also have a significant impact on the ability to meet load and manage variability and uncertainty in California.”⁷ As renewable penetration increases, the ELCC of solar generators and the overall portfolio declines. Although the recent CPUC study does an excellent job modifying the ELCC calculation, it can go further to address the treatment of behind-the-meter (“BTM”) solar. When BTM solar is treated as load, it does not reflect the period when there are low solar periods and BTM is not offsetting load. The Planning Reserve Margin is calculated using net load plus 15%, which does not reflect an increase in net load during low solar periods. If BTM is treated as supply, low solar periods would be accounted for in the planning reserve margin. An alternative approach would be to utilize a loss of load expectation measure of reliability rather than a flat planning reserve margin calculation.

⁵ *Id.* at p. 14.

⁶ California Energy System for the 21st Century, Final Report of the Flexibility Metrics and Standards Grid Integration Project titled *Role of Operating Flexibility in Planning Studies*, April 26, 2018 at p. 29 [<https://e-reports-ext.llnl.gov/pdf/895870.pdf>].

⁷ *Id.* at p. 29-30.

Driving to even higher levels of renewable penetration is an important and anticipated part of the future California grid. However, the data shows that as renewable penetration increases, the capability of these resources to support RA declines.⁸ Per the Energy Division's latest proposal, compared to CAISO's Final Net Qualifying Capacity Report for Compliance Year 2019⁹, the August peak NQC contribution of solar resources, including the portfolio benefit allocation as proposed by the Energy Division, will decline year over year by just over 400 MW. Likewise, the September NQC decline is even more substantial: nearly 1,500MW. This data drives the need for a sustainable commercial framework for the natural gas-fired resources that will remain important to reliability in California.

b. The ability of California to rely on imports to supply RA will be affected as the rules around RA imports are tightened and resources in the West are retired.

Finally, the degrading in-state System RA picture is further complicated by the continued decline and reduced availability of imported RA. According to the CPUC annual Resource Adequacy Reports,¹⁰ August Import RA has declined from 6,900 MW in 2012 to 3,900 MW in 2017. Meanwhile, the CPUC Reference System Plan¹¹ and substantially all scenarios in the 2019-2020 IRP¹² study, include 10.3GW of perfect capacity imports available to support system reliability.

⁸ <http://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M195/K586/195586923.PDF>

⁹ <http://www.caiso.com/Documents/NetQualifyingCapacityList-2019.xlsx>

¹⁰ 2012-2017 Annual RA Reports: <http://www.cpuc.ca.gov/ra/>

¹¹ http://cpuc.ca.gov/uploadedFiles/CPUCWebsite/Content/UtilitiesIndustries/Energy/EnergyPrograms/ElectPowerProcurementGeneration/irp/AttachmentA.CPUC_IRP_Proposed_Ref_System_Plan_2017_09_18.pdf

¹² <http://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M265/K372/265372222.PDF>

With generation resources retiring throughout the West, it is also not clear how much supply California can continue to rely on for imported RA going forward. A recent reliability assessment by the North American Electric Reliability Corporation references a report by the Western Electricity Coordinating Council that states “[s]ystem reserve margins are expected to become increasingly tight through 2026, driven by baseload coal and nuclear retirements as well as steady increases in power demand; as a result, Wood Mackenzie and E3 forecast natural gas demand for power generation across the Western Interconnection to increase by 30% by 2026.”¹³ The Wood Mackenzie report indicates that the western region will see approximately 9 GW of coal and 2 GW of nuclear plant retirements across the region by 2026, concluding that “at the levels of baseload retirements and renewable additions considered in this study, overall reliance on natural gas for electricity generation will increase in the coming decade. The amount of renewable generation needed to meet current state policy goals is not sufficient to entirely offset the loss of roughly 12,000 MW of baseload generation retirements.”¹⁴

In addition to overall system supplies growing tighter in the West, for the imports that are being counted towards RA in California, the California ISO’s Department of Market Monitoring has expressed concerns about whether they are actually available in real time when the

¹³ North American Electric Reliability Corporation, *2018 Long-Term Reliability Assessment*, December 2018 at p. 26, fn. 18 [https://www.nerc.com/pa/RAPA/ra/Reliability%20Assessments%20DL/NERC_LTRA_2018_12202018.pdf], referencing a June 2018 Western Electricity Coordinating Council study published by Wood Mackenzie, *Western Interconnection Gas-Electric Interface Study* at p. 3 [<https://www.wecc.org/Administrative/WECC%20Gas-Electric%20Study%20Public%20Report.pdf>]. That report also states: “Expansion of low-cost renewable generation capacity driven largely by state renewable policy goals will limit the overall need for utilization and dispatch of natural gas generation but will not fully replace the need for dependable electric generation capacity needs to meet peak demands and ensure the reliability of the bulk power system (BPS); while some of the capacity needs may be met by energy storage added in conjunction with increasing renewable penetration, the need for firm generation will not be eliminated.” (*Id.*).

¹⁴ Wood Mackenzie report at p. 6.

operational need arises. With RA imports averaging about 8% of system RA requirements, DMM has noted its concern that under the current rules resources supplying import RA “can bid significantly above projected prices in the day-ahead market to ensure they do not clear and would then have no further obligation to be available in the real-time market. Consequently, DMM has recommended the ISO reconsider rules concerning resource adequacy requirements met by imports.”¹⁵ CAISO is currently evaluating these rules and DMM’s concern in its Resource Adequacy Enhancements initiative. MRP believes import RA providers should be held to the same standards as in-state generators and be bid into the Day-Ahead and Real-Time markets with specific resource designation being required. MRP recommends the CAISO’s overall plan related to import RA be incorporated into the CPUC’s orders in Track 3.

ii. Multi-year procurement for Local RA only does not solve California’s overall resource adequacy needs

MRP believes that these data lead to the conclusion that Local RA is not the only product that requires a forward contracting framework now to support a reliable grid. In-state resources capable of providing System and Flexible RA also need longer-term commitments to signal that they remain important to grid reliability for the near and mid-term. MRP believes that the record already supports adding System and Flexible RA to the three-year procurement framework as a straightforward and low-risk step towards ensuring the continued supply from in-state resources. A review of the thermal fleet is under way in the Integrated Resources Planning proceeding’s Thermal Generation Study; the results of this assessment should be reviewed in Track 3 and used to drive the framework for more comprehensive RA program reform.

¹⁵ Q4 2018 *Report on Market Issues and Performance*, February 13, 2019 at p. 65

iii. A longer-term RA framework will provide the necessary financial stability and predictability to retain key generation assets and support investment in required maintenance and better operational flexibility

System and Flexible RA should be included in multi-year forward procurement to provide the in-state generators capable of providing this product with the longer-term price signals needed for sustainable operations. Year-ahead and monthly contracts are not sufficient to support sustained operation for these resources. Despite the importance of these resources to California's grid, it is widely understood that the energy markets do not provide sufficient revenues to sustain them based on the new operating paradigm being imposed on natural gas generators. While serving as an important system capacity resource for California, natural gas-fired generation resources are being used far less as a baseload generation, instead supporting the grid by meeting the steep evening load ramp that occurs when the solar generation drops off. As these generators are used for fewer hours for energy, producing lower GHG emissions, and the revenues from the energy markets remain highly competitive in California, capacity payments are essential to the financial health of these generation resources.

In MRP's view, a minimum of three-year forward contracting, if done in a way that provides predictability and transparency to generation resources, is a sufficient period for a viable forward contracting framework. Under a three-year forward contracting framework, owners and operators of RA resources can make longer-term decisions about capital investments and upgrades needed to keep generators important to grid reliability on line. Forward contracting is critical to allow generators to effectively bid into the market with certainty; this will in turn create a more efficient and liquid market.

Forward contracting also helps provide greater predictability and cost containment for load serving entities. MRP's experience in contracting for RA is entities prefer to contract for

bundled products and doing so achieves efficiencies and options for better pricing if the generator knows it can count on a revenue stream for a three-year period. MRP experienced a majority of LSE's putting RA Request for Offers and contract negotiations on hold as they awaited closure on the Track 2 decision. Regulatory certainty and stability are essential to a healthy bilateral RA market and sending the signal that the CPUC supports a holistic three-year forward contracting regime for all RA products will provide benefits to LSEs, generators and ratepayers. Bilateral procurement activity resumed once the alternate proposed decision in Track 2 was posted, reflecting renewed confidence in the regulatory direction provided by the Commission.

B) The amount of RA needed to meet grid reliability should reflect updated assumptions for load forecasting and resource availability

The focus of Track 3 should include also include close examination of the data that drives the calculation of RA targets, as mentioned above. The System RA market has demonstrated tight operating reserve margins over the last two years, and the planning reserve margin expectation over the next five years will continue to compress as a series of factors coalesce that will drive needs for both System and Flexible RA: declining marginal ELCC rate for intermittent renewable sources, net decline in available dispatchable capacity, and continued reduced availability of import capacity. There are a number of proceedings underway at both the CPUC and the California ISO that will produce more calibrated data that should be used to drive RA procurement targets. Track 3 should incorporate the latest-available data in setting the targets for the 2020 RA program year.

In addition, the California ISO had submitted testimony last summer in Track 2 of this proceeding to support adjusting the demand forecast to better reflect “the risk and operational challenges during the months with the highest peak demand uncertainty,” and that the “current 1-in-2 peak demand forecast (*i.e.*, the average peak forecast) by definition overlooks the potential and actual occurrence of extreme variability in temperatures that can occur in the transition months.”¹⁶ The California ISO urged adoption of a 1-in-5 peak demand forecast at certain times to better account for growing variability and extremes in weather patterns. Track 3 should revisit this recommendation and adopt appropriate changes to the forecast assumptions driving RA procurement targets that better position the system to meet load and managing variability.

III. CONCLUSION

MRP recognizes that California policy is driving to a future where carbon-free resources will provide all of the state’s electric supply. Implementing three-year forward procurement for system and flex RA will help protect resources that the grid depends upon for reliable operations today. It will also provide a stable framework to facilitate policies with greater impact on carbon reduction in California, like transportation electrification. A three-year forward contracting strategy creates a sufficiently short-term commitment to allow for preferred resource development through the longer-term driver of the IRP framework. Those that are capable of providing RA capacity at a scale and prices that benefit ratepayers can be layered in to the RA portfolio.

¹⁶ CAISO Track 2 Testimony, Corrected Chapter 4: System Resource Adequacy Demand Forecasts at 1: 18-23.

In the meantime, the grid will benefit from reforms that protect it from uncertainty and provide a robust framework allows for evolution over time to the resources preferred by California policy. Adding Flexible and System RA to the three-year forward procurement obligation for LSEs establishes a stable and commercially-viable structure to support resources needed now to supply these products. MRP looks forward to working with the Commission and other parties in Track 3 to help further the improvements to the RA program.

Respectfully Submitted,

/s/

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March 4, 2019