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nationalgrid

October 10, 2017

California Independent System Operator
250 Outcropping Way
Folsom, CA 95630

Via Email to: initiativecomments@caiso.com

Re: Flexible Resource Adequacy Criteria and Must Offer Obligations Phase 2 (FRACMOO2)

National Grid would like to thank the California ISO ("CAISO") and its staff for organizing and leading the Flexible Resource Adequacy Criteria and Must Offer Obligations Phase 2 ("FRACMOO2") Stakeholder Process. National Grid appreciates the opportunity to submit the comments below.

About National Grid

National Grid is committed to delivering safe and reliable energy to the customers and communities it serves. National Grid is one of the largest investor-owned energy companies in the world, covering Massachusetts, New York, Rhode Island and the UK. In the US, National Grid jointly owns and operates transmission facilities spanning upstate New York, Massachusetts, New Hampshire, Rhode Island, and Vermont. In the UK, National Grid owns and operates the transmission network in England and Wales. In the Western U.S., National Grid is exploring investments in transmission infrastructure, pumped-hydro storage, and battery storage.

Overall Comments

National Grid supports the stated objectives of the FRACMOO2 process. In particular, National Grid agrees the FRACMOO2 process should:

- Provide signals to help ensure the efficient retention and retirement of existing resources;
- Ensure that the CAISO has access to a fleet of flexible generation in all hours of the year in sufficient quantity to ensure reliable grid operation;
- Provide a framework for intertie resources to be part of the solution in meeting the system's flexibility capacity requirements; and
- Provide Load Serving Entities and Local Regulatory Authorities flexibility to meet system, local, and flexible capacity needs in a way that best aligns with their business and policy objectives.

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Comments on Conceptual Framework

National Grid supports the "Conceptual Framework" of four discrete products identified by the CAISO as needed to meet system reliability needs:

- Day-ahead ramping range capacity;
- 15 minute dispatchable flexible capacity;
- 5 minute dispatchable flexible capacity; and
- Regulation certified capacity.

During the September 26, 2017, FRACMOO2 Workshop, several stakeholders expressed doubt that the CAISO had adequately demonstrated the need for different types of flexible products. While National Grid believes the CAISO has provided sufficient data and analysis to support the need for the four discrete flexible products described above, National Grid would like greater insight into how the CAISO's co-optimization process works in the Integrated Forward Market to ensure that the generation units procured by LSEs to meet their Flexible Resource Adequacy requirements are deployed in the most efficient manner.

Of specific interest to National Grid – as a potential owner and operator of pumped-hydro storage projects – is a better understanding of how the CAISO's Integrated Forward Market optimizes deployment of Flexible Resources to meet system needs. Stakeholder comments during the workshop seem to question that the CAISO is efficiently dispatching flexible resources. It would be helpful for a future workshop to provide examples of how the CAISO optimizes Flexible Resources. Ideally one example would explore how a use-limited resource would be expected to bid to meet its must offer obligation, and how the CAISO optimization process would select a time-period to deploy that project. Please also describe how use-limited resources identified in combination with other use-limited resources to meet one of the existing Flexible Capacity Categories are deployed in combination with each other.

National Grid is also a potential developer of battery storage devices. Accordingly, in future workshops please explain how the CAISO would expect battery storage devices capable of providing Flexible Capacity to be bid to meet their must offer obligation and how storage would be optimized in the Integrated Forward Market.

The CAISO identified that it needed both incremental and decremental capacity at all times for each of the four different types of capacity products listed in the conceptual framework. It would be helpful if a future workshop describes how CAISO optimizes the fleet of flexible resources offered into its market to meet incremental and decremental demand for flexible capacity in each of the timeframes. Of particular interest would be an explanation of how CAISO would take advantage of a storage project's flexibility during both its charge and discharge cycles by increasing or decreasing the rate of charge/discharge within the unit's capability.

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Comments on Need for Multi-Year Contracts to Meet Flexible Resource Adequacy Requirements

National Grid urges the CAISO to consider the role of multi-year contracts in ensuring that the CAISO has access to a fleet of flexible generation in all hours of the year in sufficient quantity to ensure reliable grid operation and in providing signals to help ensure the efficient retention and retirement of existing resources. In addition, resource adequacy contracts spanning multiple years would ensure future development of cost-effective and efficient new technologies capable of providing system flexibility.

National Grid recommends revising the requirements of the annual flexible capacity resource adequacy plans to include a requirement that some percentage of the resources be under contract for greater than a single year. National Grid is not yet prepared to recommend a percentage or term of years, but believes that ensuring some portion of the flexible generation fleet is under long-term contract will not only provide certainty to those generators and ensure their retention for the term of their contract but also provide new technologies ongoing opportunities to compete to displace existing resources.

Comments on Intertie Resources

National Grid supports allowing Intertie Resources to help meet a portion of the CAISO's flexible capacity needs.

Respectfully submitted,

Nathan Sandvig
Director, Business Development