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

Order Instituting Rulemaking to Enhance
the Role of Demand Response in Meeting
the State's Resource Planning Needs and
Operational Requirements.

Rulemaking 13-09-011
(Filed September 19, 2013)

**RESPONSE OF NRG ENERGY, INC. TO
QUESTIONS REGARDING 2018 AND BEYOND
DEMAND RESPONSE PROGRAMS**

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In accordance with Administrative Law Judge Kelly A. Hymes' May 20, 2016 *Administrative Law Judge's Ruling Requesting Responses to Additional Questions in Regard to 2018 and Beyond Demand Response Programs* ("Ruling"), NRG Energy, Inc. ("NRG") respectfully submits for the California Public Utility Commission's ("CPUC" or "Commission") consideration responses to the following questions posed in the Ruling.

I. RESPONSES

Category 1 Questions: Demand Response Goal and Objectives

5. *What metrics and targets (e.g. x number of customers per year per program or y percent of customers able to respond within z number of minutes) should the Commission use to measure the following aspects of demand response: Customer participation, engaging new customers, reliable customer response, deployment of automated technologies, market transformation; and integration with other distributed energy resources including energy efficiency and battery storage.*

NRG Response: The CPUC should employ metrics that will allow the Commission to assess demand response's ability to contribute to grid reliability at a reasonable cost, and set targets that

provide a meaningful role for demand response among the various resources available to meet California's resource adequacy needs. As the Ruling correctly points out, there is not a single metric or target that will adequately assess or guide each aspect of demand response that plays a role in shaping its success. NRG offers a few examples of metrics that will help achieve California's vision for enhancing the role of demand response in meeting California's resource planning needs and operational requirements.

First, customer participation should be measured as a ratio of “x” percentage of eligible customers enrolled among the pool of customers eligible for enrollment, per program available in a given geographic area (*e.g.*, utility service territory, load zone, etc.). A related metric is program availability or saturation, as measured by “x” number of programs available per geographic area (*e.g.*, utility service territory, load zone, etc.). The CPUC's goal of engaging new customers can be measured as a function of comparing the program availability metric year over year in each geographic area, with a target aimed to increase program saturation by “x” amount before a date certain.

Customer acquisition and retention is also a critical aspect of demand response that should be measured, in part, according to the cost of acquiring and retaining new customers. Thus, one metric may reflect the acquisition cost of “x” dollars per customer, with a target set to lower the value of “x” by a certain amount or percentage by a target date. Concentrating on metrics and targets aimed to lower customer acquisition and retention costs has the added benefit of attracting new demand response providers to California's market, which in turn will serve to increase program awareness and saturation and further lower customer acquisition and retention costs.

A second key aspect of demand response, after customer participation and engaging new customers, is reliable customer response. Accordingly, one metric may be customer performance expressed as a percentage of customers enrolled who respond to emergency calls, or as a ratio of demand response capacity provided versus demand response capacity offered. NRG believes that such information concerning customer performance, when coupled with customer participation metrics, will offer valuable insight into two primary indicators of demand response program success.

Category 2 Questions: Improving Demand Response Program Design

- 2. The Interim Report recommends integrating demand response with other clean energy services to reduce costs, increase potential and decrease customer confusion. The report points to a growing number of integrated measures that provide both energy efficiency and demand response capabilities. These integrated measures include programmable communicating thermostats and other technology, which provide energy management, convenience, and may reduce the cost of enabling demand response. What policies or benchmarks should the Commission adopt to support such integration? Explain and justify whether and how the Commission should ensure that new construction includes modern demand response enabling technologies?*

NRG response: NRG fully supports the integration of energy efficiency capabilities with demand response programs because such integration is likely to enable greater demand response participation. Ease of recruitment is a critical component of customer acquisition, and without removing barriers to entry at the consumer level, customer acquisition can be significantly hindered. Presently there is an appreciable awareness among consumers of the panoply of energy efficiency measures delivering proven benefits to consumers, including cost savings, environmental and social benefits, greater visibility and awareness of energy consumption down to the household and small business level, and individual control over the various options for energy consumption. Demand response shares many of these same benefits, and is a sensible

pairing with energy efficiency. Thus, NRG supports the CPUC's adoption of policies and/or benchmarks that support integration of energy efficiency and demand response.

First, the CPUC should adopt policies that enable providers to offer customers both energy efficiency and demand response opportunities under the same program and provider umbrella. For example, CPUC policies may enable technology vendors selling demand response monitoring or automation devices to partner with energy efficiency dealers in order to capture the economies of scale of joint marketing and education initiatives. Such partnership could expand, for example, to joint offers of consumer rebates and/or incentives presented by a single, chief supplier representing multiple actors including demand response providers, energy efficiency technology vendors, brokers and consultants. Such partnership spearheaded by a single leader, and supported by a myriad of CPUC policies and incentives, would cut customer confusion and paralysis that presently stymies demand response program growth and expansion.

In order to achieve an objective of fostering partnerships among demand response providers and energy efficiency programs, NRG encourages the CPUC to adopt policies providing incentives and benefits that are not mutually exclusive of one another, but that encourage packaging multiple products or services together that would yield both greater reliability benefits to the grid and achieve exponentially greater cost savings.

For example, a consumer replacing an inefficient air conditioning unit with a smart, energy efficient HVAC system ought to be permitted to claim both an energy efficiency rebate to subsidize the capital outlay for the technology required to use less energy at any time, including during peak periods (*i.e.*, to permanently change electricity usage through installation of more efficient end-use devices); and a separate demand response incentive payment for providing load reduction as a substitute for system capacity (*i.e.*, for changing normal consumption patterns with

direct load control curtailing the HVAC system in response to electric system needs). Coordinating such incentives will be an attractive means to recruiting and retaining consumer participation, and will maximize the grid reliability, security, and environmental benefits to be gained from energy efficiency and demand response.

Finally, regarding whether and how the Commission should ensure that new construction includes modern demand response enabling technologies, NRG believes that building codes and appliance standards should be tailored to enable greater penetration of both energy efficiency and demand response. If certain technology measures are mandated directly into building design and infrastructure requirements and appliance specifications, customers will be empowered to capitalize on both energy efficiency and demand response programs without facing the capital outlay required of upgrading or retrofitting legacy construction and technologies that presently serve as an obstacle to consumers opting-in to energy efficiency and demand response programs. Such building code and appliance design mandates are superior to leaving such upgrades to consumer choice, and will undercut the time and effort required to change customer behavior, as they will socialize the costs of such investment over a broader consumer base that shares the cost of such enabling technology and building standards. Over the long term, this will serve the public interest by way of achieving greater energy independence and security, greater cost savings, and improved environmental health.

3. *The Interim Report observes widespread confusion among building code officials and market actors regarding the intention of Title 24 requirements for automated technology. The Interim Report recommends that the Commission evaluate knowledge gaps and develop training sessions to address the gaps. Should the Commission evaluate knowledge gaps for Title 24 requirements? How should such an evaluation be performed? What policies should the Commission adopt to ensure that Title 24 can lower the cost of demand response automation?*

NRG response: To the extent that widespread confusion exists among building code officials and market actors regarding the intention of Title 24 requirements for automated technology, NRG stridently agrees that, leveraging the findings in the Report, the Commission should evaluate knowledge gaps for Title 24 requirements. To ensure that Title 24 can lower the cost of demand response automation, NRG urges the CPUC to assemble an appropriate representation of Title 24 experts and stakeholders to extract from Title 24 all requirements and provisions directly applicable to demand response, such that demand response automation may be understood and leveraged to the full extent permitted under Title 24. Proper education, training, and follow up may be appropriate components of the Commission's outreach and guidance.

4. *The Interim Report concludes that providing feedback to customers immediately following a demand response event encourages customers to participate in demand response. How can the Commission design programs to cost-effectively provide feedback to customers?*

NRG response: NRG believes that real—time feedback to customers ought to be part and parcel of automated demand response technology. Thus, demand response control and/or automation equipment may include communications technology that provides individual consumers with real-time visibility to load and energy consumption. Tying such capabilities with energy efficiency and demand response technologies will capture incremental benefits by way of information or data communication more efficiently and economically than person-to-person outreach or after-the-event mailed communications from utilities or program administrators.

Likewise, web-based energy management portals providing consumers with direct, real-time or near real-time feedback on event performance will incent greater customer participation because it will provide participants with immediate, measureable results and will allow consumers to recalibrate their consumption on a real-time basis. If tied to existing efforts to achieve demand response automation, including leveraging systems and software that are already in use, such consumer feedback may be achieved rapidly and cost effectively.

Category 5 Questions: CAISO Market Integration of Utility Programs

3. *There has been discussion regarding the ability to pre-dispatch demand response resources in the day-ahead market to mitigate local contingency on the grid. What is the definition of pre-dispatch?*

NRG response: As NRG understands, “pre-dispatch” refers to dispatching demand response resources that may have response times longer than 20 minutes in advance, prior to encountering real-time conditions that would give rise to the need to dispatch these resources in real-time.

4. *What is the impact of pre-dispatching demand response resources if they are not ultimately needed in real time and not dispatched?*

NRG response: Pre-dispatching a demand response prior to real-time amounts to the same response as dispatching the demand response resource in real-time. The demand response is required to respond to the pre-dispatch notice by curtailing demand at a pre-determined time rather than curtailing demand in response to a real-time dispatch. Whether the resource is ultimately needed in real-time or not (*i.e.*, whether the conditions that would give rise to the need to dispatch the demand response resource materialize or not), a day-ahead pre-dispatched resource is required to curtail demand at the directed time.

Pre-dispatching demand response resources from the day-ahead market requires those resources to curtail demand based on *predicted* conditions rather than based on *actual* conditions. As such, this may result in the dispatch of demand response resources more frequently than would be necessary based on real-time conditions.

5. *Explain and justify whether customers should be compensated for being pre-dispatched even if they are not ultimately dispatched?*

NRG response: A demand response resource that is pre-dispatched through the day-ahead market is required to curtail demand regardless of whether real-time conditions require the

curtailment, and should be compensated for that pre-dispatched curtailment the same way it would be compensated for curtailment due to a real-time dispatch.

II. CONCLUSION

NRG thanks the Commission for the opportunity to submit these responses.

Respectfully submitted July 1, 2016 at San Francisco, California.

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