BEFORE THE PUBLIC UTILITIES COMMISSION

OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking Regarding Policies, Procedures and Rules for Development of Distribution Resources Plans Pursuant to Public Utilities Code Section 769.	R.14-08-013 Filed August 14, 2014

COMMENTS OF PHYSICIANS SCIENTISTS & ENGINEERS FOR HEALTHY ENERGY ON ORDER INSTITUTING RULEMAKING REGARDING POLICIES, PROCEDURES AND RULES FOR DEVELOPMENT OF DISTRIBUTION RESOURCES PLANS PURSUANT TO PUBLIC UTILITIES CODE SECTION 769.

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I. INTRODUCTION

Pursuant to the California Public Utilities Commission's (Commission) Rules of Practice and Procedure, Physician Scientists & Engineers for Healthy Energy (PSE) respectfully submits the following responses to the questions posed by the Commission in the *Order Instituting Rulemaking Regarding Policies, Procedures and Rules for Development of Distribution Resources Plans Pursuant to Public Utilities Code Section 769* on August 14, 2014. PSE thanks the Commission for the opportunity to participate in this rulemaking.

PSE is a group of physicians, scientists and engineers based in California and New York that brings scientific transparency to energy policy issues. We publish research papers in peer-reviewed journals, synthesize and translate scientific research for wider audiences, and work with policymakers, the media, academics, and community groups to disseminate this information widely. Our focus is on renewable energy penetration, energy storage technologies, and oil and gas development. We address these issues through environmental, climate and health lenses.

PSE's comments in this proceeding are aimed at highlighting some of the values of distributed energy resources (DERs) that PSE believes should be considered when developing distributed resources plans (DRPs) but have not been fully addressed in the discussion to date. These valuable characteristics of DERs includes contribution to grid resiliency in earthquakes and other large-scale outages, and environmental impacts.

II. RESPONSES TO QUESTIONS

1. What specific criteria should the Commission consider to guide the IOUs' development of DRPs, including what characteristics, requirements and specifications are necessary to enable a distribution grid that is at once reliable, safe, resilient, cost-efficient, open to distributed energy resources, and enables the achievement of California's energy and climate goals?

The criteria included in the IOUs' Distributed Resources Plans (DRPs) should include both time-dependent and location-specific characteristics of DERs. Time-dependent characteristics may include both inherent system characteristics, such as solar panel orientation (which can influence the typical peak generation of the system) as well as operational characteristics, such as the ability to call on energy storage systems or demand response as needed throughout the day. Location-specific characteristics include both contributions to daily grid functionality, such as impact on congestion or peak demand, as well as capacity that may contribute to grid resiliency.

Many of these features have been discussed in the rulemaking and attached report *More than Smart*, so here we draw attention to a few benefits of DERs that were not explicitly mentioned. The first point is that distributed energy resources have the potential to offer significant resilience and backup in case of emergencies. As an example, most of the rooftop solar systems in New Jersey could not island during and after Hurricane Sandy, rendering them useless when the grid went down, but now the region is focusing on increasing microgrids and distributed resources

to add to resilience. California is very seismically active, as Napa recently experienced, and distributed resources like solar, storage, and microgrids may be able to provide resilience in cases of earthquakes or other disasters or weather events. These characteristics can be valued based on ability to island and operate independently in case of grid outages, and based on location. In the latter case, providing incentives for microgrids to function at schools, community centers, and other places people can go in disaster situations, and to run critical operations like water distribution, can ensure that valuable backup is in place in case of emergency.

A second point is that DERs have the potential to not only contribute to climate objectives but also reduce emission of criteria air pollutants. DERs that can reduce the need to turn on peaking power plants, for example, can reduce the emissions from these less efficient plants; special emphasis can be placed on reducing emissions near vulnerable populations or in high air pollution regions. Expected climate impacts, like increased daytime temperatures and therefore air conditioning use, should also be incorporated into strategies to employ DERs to reduce load in specific regions.

2) What specific elements must a DRP include to demonstrate compliance with the statutory requirements for the plan adopted in AB 327?

No comment at this time.

3) What specific criteria should be considered in the development of a calculation methodology for optimal locations of DERs?

As described in response to Question 1, some valuable criteria include (this list is not expected to be fully inclusive):

- Time-dependence of DER (such as solar panel orientation) and ability to meet time-dependent demands in local area;

- Location-specific value to deferring distribution and transmission upgrades;
- Ability to island and provide resilience to a specific facility or community in case of emergency outages, such as after a large earthquake;
- Potential to decrease peak demand in specific locations, including reducing the burning of fossil fuels and criteria air pollutants in communities heavily burdened by pollution.

4) What specific values should be considered in the development of a locational value of DER calculus? What is optimal means of compensating DERs for this value?

While PSE has no recommendations at this time for specific values, we do offer the reminder that compensation may need to be split to reflect both capacity value, such as for providing emergency backup, and usage value, such as hours of generation, storage, or demand response; these latter values may be time-dependent.

5) What specific considerations and methods should be considered to support the integration of DERs into IOU distribution planning and operations?

PSE suggests that California Enviroscreen 2.0 may be a valuable tool for both ensuring that deployment can positively impact air emissions in at-risk communities and for incentivizing deployment of these resources in typically underserved communities.

Projected temperature increases due to climate change and resultant energy use changes should also be incorporated into resource planning.[1]

6) What specific distribution planning and operations methods should be considered to support the provision of distribution reliability services by DERs?

No comment at this time.

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[1] See: Auffhammer, Maximilian and Anin Aroonruengsawat (California Climate Change Center). 20□2.***Hotspots of Climate-Driven Increases in Residential Electricity Demand: A Simulation Exercise Based on Household Level Billing Data for California. California Energy Commission***. Publication number: CEC -500-20□2-02□

7) What types of benefits should be considered when quantifying the value of DER integration in distribution system planning and operations?

Benefits that can be quantified include improved health impacts from reduced local air emissions; resiliency value to businesses and individuals; and potential reductions in need for transmission and distribution upgrades, among others.

8) What criteria and inputs should be considered in the development of scenarios and/or guidelines to test the specific DER integration strategies proposed in the DRPs?

No comment at this time.

9) What types of data and level of data access should be considered as part of the DRP?

No comment at this time.

10) Should the DRPs include specific measures or projects that serve to demonstrate how specific types of DER can be integrated into distribution planning and operation? If so, what are some examples that IOUs should consider?

The IOUs can consider demonstration projects to test increased deployment of microgrids, with a focus on enhancing grid resiliency; deployment and use of demand response or storage in electric vehicles; and concerted deployment efforts in locations where peak generation is expected to grow or capacity is being taken offline to demonstrate the ability of these resources to obviate the need for constructing new centralized power plant infrastructure.

11) What considerations should the Commission take into account when defining how the DRPs should be monitored over time?

It may be of value to determine the impact the DRP has had on the generation resource mix, on greenhouse gas emissions, on criteria air pollutant emissions, on impacted communities, and on electricity rate impacts on different communities.

12) What principles should the Commission consider in setting criteria to govern the review and approval of the DRPs?

DRPs should consider, among other factors, incentives to ensure the equitable distribution of DERs, including in typically underserved populations.

13) Should the DRPs include discussion of how ownership of the distribution may evolve as DERs start to provide distribution reliability services? If so, briefly discuss those areas where utility, customer and third party ownership are reasonable?

No comment at this time.

14) What specific concerns around safety should be addressed in the DRPs?

As mentioned above, the DRP should take into account hazards from earthquakes and weather events and the potential for DERs to provide energy security and safe gathering locations given such an event.

15) What, if any, further actions, should the Commission consider to comply with Section 769 and to establish policy and performance guidelines that enable electric utilities to develop and implement DRPs? Attachment 1 to this order is a complete copy of AB 327 as enacted.

No comment at this time.

16) Appendix B to this rulemaking is a white paper that articulates one potential set of criteria that could govern the IOUs DRPs. Please review the attached paper and answer the following questions.

No comment at this time.

IV. CONCLUSION

PSE appreciates the opportunity to provide comments in response to this OIR.

Respectfully submitted,

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