BEFORE THE PUBLIC UTILITIES COMMISSION

OF OREGON

UM 1751

In the Matter of PUBLIC UTILITY COMMISSION OF OREGON, Implementing Energy Storage Program Guidelines pursuant to House Bill 2193.	UM 1751 (Filed September 10, 2015)

COMMENTS OF THE INTERSTATE RENEWABLE ENERGY COUNCIL, INC. TO INFORM STRAW PROPOSAL OF GUIDELINES FOR SUBMITTING PROPOSALS FOR ENERGY STORAGE PROJECTS

SKY C. STANFIELD
JOSEPH D. PETTA
SHUTE, MIHALY & WEINBERGER LLP
396 Hayes Street
San Francisco, California 94102
Telephone: (415) 552-7272
Facsimile: (415) 552-5816
stanfield@smwlaw.com
petta@smwlaw.com

Attorneys for Interstate Renewable Energy Council, Inc.

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Pursuant to the Commission's request for comments issued on June 1, 2016 in the above-captioned proceeding, the Interstate Renewable Energy Council, Inc. ("IREC") hereby submits its responses to the Commission's questions.

IREC is a 501(c)(3) non-partisan, non-profit organization working nationally to expand and simplify customer access to reliable and affordable distributed clean energy by: (1) developing and advancing regulatory policy innovations that empower consumers and support a transition to a sustainable energy future; (2) generating and promoting national model rules, standards, and best practices; and (3) providing workforce training, education, and credentialing. The scope of IREC's work includes incorporating distributed energy resource growth into utility distribution system planning and operations. IREC is currently participating in energy storage and grid integration related proceedings in California, Nevada, New York, Massachusetts, and Minnesota. In 2015 IREC published a report on energy storage designed to

assist public utilities commissions in identifying key regulatory considerations that need consideration to maximize the benefits of energy storage.[1]

An important link exists between distributed renewable energy generation and Energy Storage Systems ("ESS") because the latter can provide a critical role in resolving the intermittent nature of the former and can effectively address many of the current challenges of accommodating higher penetrations of solar energy and other distributed energy resources (DERs) on the utilities' distribution systems .[2] For these reasons, Oregon House Bill 2193 ("HB 2193" or "the Act"), which proposes to establish ESS procurement targets for Oregon utilities, will bolster Oregon's other policies aimed at deploying renewable resources, in particular on the distribution side of the electric system, while also offering numerous other benefits to Oregon's utilities, grid, ratepayers, and environment.

I. IREC'S COMMENTS ON THE STRAW PROPOSAL

In developing guidelines for proposals for energy storage projects, HB 2193 requires the Commission to examine the potential value of ESS's various applications. These applications, or services, include renewables integration, electric supply capacity, deferred upgrades to the electric system, transmission support, reduced greenhouse gas ("GHG") emissions, and "any other value reasonably related" to ESS. § 3(1)(a). The Commission must also consider ways to encourage electric companies to invest in a diversity of ESS technologies (§ 3(1)(b)), and consider "any other factor reasonably related" to the procurement of qualifying ESS (§ 3(1)(c)). IREC provides responses to some of the Commission's questions below in the order they were

[1] Sky Stanfield, et al., *Deploying Distributed Energy Storage: Near-Term Regulatory Considerations to Maximize Benefits*, Interstate Renewable Energy Council, Inc., February 2015, available at: http://www.irecusa.org/publications/deploying-distributed-energy-storage/ [hereinafter *Deploying Distributed Energy Storage*]

[2] *See id.* at 9-18 (discussing the role that ESS can play in integrating renewables and offering other customer benefits and describing its various applications and benefits). .

posed in the request for comments. We may weigh in on aspects of the other questions not addressed herein in future comment opportunities.

A. What guidance should the Commission provide on the storage potential analysis?

The statute requires that the utility proposals to develop ESS projects include an evaluation of the potential to store energy in the utility's electric system. § 3(2)(b). The evaluation must analyze the electric company's current operations and customer-side, distribution, and transmission data in order to identify opportunities in the electric system to incentivize ESS. § 3(2)(b)(A). It also must assess how ESS's addition to the electric system could complement other proposals to integrate resources to meet expected customer needs. § 3(2)(b)(B).

1. Should the evaluations of storage potential be filed separately?

Yes. IREC believes that the overarching objectives of HB 2193 will be best achieved by requiring utilities to submit storage potential evaluations *before* they submit project development proposals. Thorough evaluations providing the analysis described in sections 3(2)(b)(A) and 3(2)(b)(B) would provide utilities and stakeholders with an early-stage planning opportunity for meeting the Act's procurement mandate, and for pinpointing locations on the electric system to optimize the value of the various ESS applications. Storage's value depends on the services it provides, which in most cases will depend on the physical location of the storage facility. Thus, early evaluation of storage procurement should be location-specific. Early submission would also promote transparency by allowing the Commission and stakeholders the opportunity to review the utilities' evaluations and provide feedback to help shape project proposals to ensure the state gets the greatest benefit out of each project.

2. What guidance should the Commission provide about the analyses to be conducted?

The Act's centerpiece is its storage procurement target, which can deliver tangible benefits to ratepayers, electricity companies, the storage industry, and the environment. The storage evaluation in section 3(2)(b) is an integral component to ensure such benefits are optimized. This analysis is an opportunity for utilities, the Commission, and stakeholders to take a close look at the electric system before a proposal is submitted and identify which locations could achieve the greatest benefits from integration of a range of ESS technologies.[3] This will result in better project locations under the procurement target, but also may offer benefits to other projects that may be initiated by customers or utilities outside of the procurement target.

The Commission should require evaluations to include analysis of the potential benefits of distribution and customer-sited ESS on the utility's system. While load growth remains the dominant driver for utilities' long range planning, the storage evaluation is an opportunity for Oregon utilities to begin to proactively plan for future growth of DERs and to consider how strategic deployment of these resources can offer the greatest benefits to the grid and to customers. Evaluations should show how ESS's benefits would vary in kind (e.g., ancillary services versus peak load reduction) and degree depending on applications' location, and identify areas where ESS could alleviate renewables integration concerns and facilitate penetration of customer-sited DERs within utilities' electric systems.[4]

[3] *See Deploying Distributed Energy Storage,* at 36 ("Starting with an assessment of the existing system capabilities, states will get more value out of storage installations if they require utilities to identify locations where distributed energy storage (and other DERs) may be most valuable and to develop a method for sharing this information with customers and developers in a readily accessible format.").

[4] *Id.* at 25 ("Some of the most compelling factors driving interest in distributed energy storage are tied to the ability of storage to ease integration of high penetrations of renewable energy resources on the grid . . . . [S]torage will necessarily play an important role as part of the increased deployment of DERs . . . .").

Specifically, IREC urges the Commission to require the utilities to provide "heat maps" of their system which identify where particular ESS services may currently, or in the future, be needed and most valuable. These maps should identify the particular services needed at each location if possible, recognizing that different services will be valuable in different locations. The utilities should provide information with these maps to explain how the areas were identified and what particular criteria were used to determine the locations where the services would be most valuable.

3. Should utilities identify and rank order the areas of opportunity?

Yes. Ranking of areas of ESS opportunity within utilities' electric systems is necessary so that the storage evaluation can "be used to identify . . . opportunities to incentivize the value potentially derived" from ESS. § 3(2)(b)(A). Deriving value from ESS services requires identifying locations with the greatest opportunity for service "stacking," as well as locations with moderate and less-than-average opportunity. Rankings should also identify the highest value locations by individual ESS service. Utilities' project proposals should prioritize the best locations for stacking opportunities, then work downward through the rankings to achieve storage's greatest overall value across the system.[5]

[5] *Electric Energy Storage Technology Options: A White Paper Primer on Applications, Costs, and Benefits*, EPRI, 2010, available at: http://www.epri.com/abstracts/Pages/ProductAbstract.aspx?ProductId=000000000001020676, at 2-11 ("[E]nergy storage applications that achieve the highest estimated revenues do so by aggregating several benefits across multiple categories. The analysis indicates that capturing multiple benefits—including transmission and distribution (T&D) deferral and ancillary services—will be critical for high-value applications.").

4. What guidance should the Commission provide about the details of the evaluation report filed with the Commission?

5. What should the evaluation report include and in what detail?

The Commission should ensure that all conclusions in evaluation reports are supported by facts, data, and clearly identified assumptions. Utilities must "show their work" so that the Commission and stakeholders can meaningfully review and comment on evaluation reports.

Evaluation reports must analyze the company's current operations and electric system data, including customer-side data, distribution data, transmission data and data related to existing ESS. The analysis must be sufficiently detailed to identify areas in the electric system where there may be opportunities to incentivize the value potential derived from ESS. § 3(2)(b)(A). The evaluation report must also analyze how addition of ESS would complement proposed actions submitted to the Commission in which the electric company has proposed an integrated, least-cost combination of resources to meet the expected needs of the company's customers. § 3(2)(b)(B).

Because the Commission is required to examine ESS technology's full range of potential services, the evaluation report should analyze optimal locations on the electric system for each service, including deferred investment in generation, transmission or distribution of electricity; reduced need for additional generation of electricity during peak demand; improved integration of different types of renewable resources; reduced GHGs; improved reliability of electrical transmission or distribution; reduced portfolio variable power costs; and any other value reasonably related to the application of ESS technology. § 3(1)(a). The analysis of ESS services should give particular weight to distribution and customer-side specific benefits, such as energy arbitrage, customer energy management, and increased reliability or back-up of electric service.

These services are important to the "stacking" equation and should not be left out of the utility analysis of ESS value.

6. What process should the Commission use for review and comment on the analysis results? Should utilities prepare a draft report for stakeholder and Commission review and comment?

The evaluation report should serve the dual purpose of analyzing the potential for high-value storage locations, and ensuring that the Commission and stakeholders have the opportunity to review and comment on utilities' analyses before they submit project proposals. Utilities therefore should prepare a draft evaluation report for stakeholder and Commission review and comment.

B. How should the Commission encourage diversity among projects?

12. How should the Commission encourage investment in different systems?

The Commission must "[c]onsider ways in which to encourage electric companies to invest in different types of energy storage systems." § 3(1)(b). The Commission could encourage investment by creating different procurement categories, or "use-case buckets," based on criteria such as ESS service type, point of interconnection with the electric system, or combination thereof.

The California Public Utility Commission's ("CPUC") rulemaking implementing California's Storage Mandate, which requires investor owned utilities to meet an overall energy storage procurement target of 1.325 Gigawatts (GW) by 2020, could serve as a model. In its Decision Adopting Energy Storage Procurement Framework and Design Program (Rulemaking 10-12-007, filed December 16, 2010), the CPUC established separate storage procurement sub-targets, based on transmission-connected, distribution-connected, and behind-the-meter "grid domains," with the aim of developing market participation and a range of system ownership

models while avoiding giving preference to one technology over another. *See* CPUC Decision 13-10-040, October 17, 2013, at 14-15.

Like California's Storage Mandate, HB 2193 is "technology neutral" and defines a "qualified" energy storage system as one that the Public Utilities Commission authorizes for development. § 1(4). IREC encourages the Commission to adopt an approach similar to the CPUC's "grid domain" procurement model, with particular sub-targets for distribution-interconnected storage. Such an approach could address market needs by (a) defining the utility system functions that are applicable to each of the specific storage applications for each grid domain; (b) describing the objectives of using ESS in that circumstance;[6] (c) setting operational and technical requirements for storage to provide the stated function; (d) assessing appropriate storage technologies in likely configurations; and (e) listing alternative technologies that could potentially meet the function. Decision 13-10-040 at 23. This approach does not identify any particular technology, but focuses instead on the functions and would let the market select the technology. It encourages diversity but also focuses on the functionality the utilities desire.

13. Should the Commission require utilities to submit proposals for multiple storage projects that test the use of storage in different applications, test different ownership structures, demonstrate promising new uses and technologies, or test some other critical differentiating factor among projects?

14. What differences in storage projects should be promoted (e.g., different use cases, different technologies, different ownership structures)?

15. To what extent should the goal be to test and prove new and innovative applications or technologies?

The Commission should require and/or promote all of the above, with the central goal of testing and proving new and innovative ESS applications and technologies. Utilities'

[6] For example, some use-case objectives for the customer-sited storage domain are bill management/permanent load shifting, power quality, and electric vehicle charging.

procurement portfolios should represent a variety of ESS services, points of interconnection, system sizes (e.g., aggregated vs. direct provision of services from the bulk system), and ownership models. Southern California Edison's 2014 Energy Storage Procurement Plan, for instance, which the utility developed pursuant to California's Storage Mandate,

> seeks to procure energy storage projects that fall into a wide range of "end-uses" as identified by the CPUC . . . . By diversifying projects' end-uses, especially in the earlier years of storage procurement, SCE intends to encourage a broader variety of energy storage projects and develop a wider understanding of how different projects perform at these different functions. This understanding will be useful as SCE procures larger quantities of storage in future years.

Testimony of Southern California Edison Company in Support of Its 2014 Energy Storage Procurement Plan, February 28, 2014, available at: https://www.sce.com/wps/portal/home/procurement/solicitation/energy-storage-rfo, at 5.

Diversity among projects will ensure that ESS's benefits are widely shared and that utilities' investments result not just in cost-competitiveness but also market transformation.

C. What information should utilities include with a proposal?

In addition to the detailed list set forth in section 3(2)(c) of the Act, utilities should be required to describe *why* and *how* they selected the proposed ESS locations, technologies, types of services, and ownership structures to invest in. Although these questions should be initially addressed by the storage evaluation, utilities should clearly connect those findings and conclusions with eventual project proposals. Project proposals should be supported by data, and otherwise "show the utilities' work" so that the Commission and stakeholders can meaningfully review and comment on proposals.

D. How should the Commission evaluate proposals?

In addition to evaluating projects' cost-competitiveness, the Commission should give weight to those aspects of proposals that achieve the Act's less quantifiable aims, including

promoting development of demonstration projects that explore new ESS applications or technologies. In short, the Commission should approach proposals with an openness to experimentation, focusing not only on utilities' bottom line but also on DER's broader aspirations.

II. CONCLUSION

IREC appreciates the opportunity to submit these comments. We look forward to reviewing and commenting on the Commission's straw proposal, and otherwise continuing our engagement in this proceeding.

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Respectfully submitted,

SHUTE, MIHALY & WEINBERGER LLP

By: /s/ Sky C. Stanfield
SKY C. STANFIELD
JOSEPH D. PETTA

Attorneys for Interstate Renewable Energy Council, Inc.

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