Spark Northwest

Creating clean energy communities

December 16, 2019

To: Oregon Public Utility Commission and Staff
From: Spark Northwest

RE: OPUC General Capacity Investigation (Docket UM 2011)

Thank you for the opportunity to provide comments regarding the "General Capacity Investigation" under Docket UM 2011. Spark Northwest supports the PUC's interest in developing a methodology that fairly and comprehensively values the various capacity services that specific types of energy provides.

Spark Northwest is a regional non-profit organization dedicated to creating communities powered by locally controlled, clean energy. Through our education, policy and technical assistance programs, we help connect people with direct opportunities to participate in and benefit from clean energy.

This investigation set out to develop "a common framework of understanding by parties and stakeholders of appropriate assumptions to value capacity. Staff envisions this investigation resulting in establishment of a methodology that looks to the characteristics of capacity a resource provides. This methodology could then be used across multiple dockets and technologies for valuing capacity brought to the electric system."[1]

How capacity is defined and valued will play a central role in developing an energy system for Oregon that is able to respond to and benefit from to rapid changes occurring in the electricity sector globally. This includes changes in technology as the costs and availability of advanced clean energy technologies improves, combined with the operational and management changes that climate change impacts and response will require.

An investigation into capacity valuation is particularly timely given the emergent consensus that the Pacific Northwest is, or will soon be, capacity resource *inadequate*. The Northwest Power Pool found in their November 2019 report: "There is general consensus among regional studies that the Northwest is, or will soon be, short on capacity resources…A common finding …is that the Northwest electricity system is either not resource adequate today or will become so within the next two years."2

The report went on to state: "The region's planning challenges will be made more acute by impending thermal plant retirements. Forecasted deficits of this size suggest increased exposure to extraordinary price volatility and outage risks that far exceed historical standards. To avoid this outcome, utilities will need to replace thousands of megawatts of retiring capacity over the next five to 10 years…Doing so will require

[1] https://edocs.puc.state.or.us/efdocs/HAA/um2011haa105618.pdf
[2] https://www.nwpp.org/private-media/documents/2019.09.30_E3_NWPP_RA_ExecSum.pdf

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proactive planning by utilities and careful oversight by regulators during a period of transition for the region's resource mix."[3]

Ensuring that clean energy resources are compensated for the full range of benefits that they provide will be central to addressing the looming capacity deficit in the region and to meeting climate change mitigation and resilience goals. As the costs of renewable energy and energy storage continue to fall and the technologies available to integrate distributed resources into grid operations and management become more widely available, the ways Oregon prices, manages and distributes power needs to fundamentally change. This includes energy efficiency, renewable energy and storage, demand side response, virtual power plant technologies, and other technological advancements that will enable the transformation of the electricity grid. As Advanced Energy Economy notes in their 21st Century Electricity System Issues brief:

> The U.S. utility sector has entered a period of foundational change, not seen since the restructuring of the late 1990s. Change is being driven by new technologies, evolving customer needs and desires, environmental imperatives and an increased focus on grid resiliency. With these developments come challenges, but also new opportunities to create an energy system that meets the changing expectations of consumers and society for the coming decades. We call this the 21st Century Electricity System: a high-performing, customer-focused electricity system that is efficient, flexible, resilient, reliable, affordable, safe, secure and clean.[4]

Spark Northwest suggests that this investigation and the methodology development and implementation process should be guided by the following principles:

- **Transparency:** Any methodologies to value capacity should be transparent and consistently applied across dockets and planning processes. Historically, different capacity valuations have been developed by different utilities under different dockets for different purposes (e.g. avoided cost rates under PURPA, the Resource Value of Solar, Energy Efficiency Cost Effectiveness). The "black box" approach that has been utilized to date has lacked transparency and made effective engagement in both policy and market contexts by non-utility parties difficult. Methodologies, including their underlying assumptions and calculations, should be transparent and equitably applied.
- **Adaptability:** The U.S. electricity sector is undergoing profound changes due to technology innovation and the impacts of climate change. How energy capacity resources are combined, integrated and valued will continue to evolve as new technologies, applications and innovations emerge and old technologies are phased out (e.g. large-scale fossil fuel-based generation). Any methodology that is adopted should be adaptable and able to be adjusted as circumstances warrant.

[3]

[4] https://info.aee.net/21ces-issue-briefs

- **Comprehensiveness:** Methodologies adopted for capacity valuation should reflect and appropriately value the full range of services distributed clean energy resources offer: this includes locational resilience benefits, grid operations and ancillary services, climate change impacts and effects, etc.
- **Equity:** Methodologies for valuing capacity should account for the full social and environmental cost of the externalities and local impacts from their underlying fuel sources. Further, methodologies adopted for valuing capacity should take into consideration impacts on surrounding communities and the environment.

Please find a response to question 3 below. Spark Northwest is also a member of OSEA and supports the comments submitted by that organization.

3. **Are there distinct types of capacity that could be separately compensated, assuming that adequate information, communications and control systems are in place? For example, should capacity that has the following capabilities be considered distinctly:**
    a. **Available to meet system Resource Adequacy (RA) needs?**
    b. **Available to meet system flexibility needs?**
    c. **Available in a certain time frame?**
    d. **Available in a certain location?**

Developing a methodology that comprehensively values different types of capacity will be central to an electricity sector that is able to meet the challenges of climate change. Generation capacity located in areas of the grid that are vulnerable to climate change driven impacts (e.g. wildfire, extreme heat, high winds, snowstorms, etc.) and can be dispatched both to support larger grid operations and services as well as in climate change response circumstances should reflect the additional resilience benefits they offer. The capacity that solar plus storage and microhydro resources that are located in Counties that will be impacted by public safety power shutoffs (PSPS), such as those that PacificCorp announced in mid-2019, should be valued for the "normal" grid capacity services they provide and—if equipped with islanding capability—the emergency or PSPS capacity they provide. Owners of those capacity services should be compensated for the value that those distributed resources bring to ensuring that utilities can reliably meet load. Further, distributed generation or energy efficiency that can be sited to address load pockets and defer investment in long distance transmission and distribution upgrades/expansion should reflect those deferrals in their valuation.

Rapid integration of distributed clean energy generation and storage resources can and should play a central role in addressing the looming capacity deficit and resource inadequacy issues that threaten the lives, safety and economy of the residents of the Pacific Northwest. Examples of how distribute resources have supported overall grid stability abound. Utility dive reported that just last week in South Australia a coal fired power plant tripped offline and "[a]ccording to the Australian Energy Market Operator, the outage

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caused power system frequency to drop below normal levels but Tesla's VPP was able to inject power from hundreds of individual residential batteries to help return the system frequency back to stable levels."[5] According to the South Australian government, the VPP "detected the frequency drop and immediately injected power into the grid from hundreds of individual residential batteries installed on SA Housing Trust properties across the state."[6]

This is one small example of how solar plus storage with as few as 1,000 homes participating through a Virtual Power Plant can provide valuable grid stability and ancillary services. Spark Northwest encourages the OPUC to look beyond Oregon's borders to identify how to effectively and efficiently value and accelerate uptake of distributed energy resources as a central pillar of Oregon's energy future.

Spark Northwest looks forward to engaging in future workshops and continued discussions and efforts to advance clean, distributed energy across the state through a transparent, comprehensive, adaptable and just capacity valuation methodology.

Sincerely,

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On behalf of Spark Northwest
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[5] Utility Dive https://www.utilitydive.com/news/teslas-australian-virtual-power-plant-propped-up-grid-during-coal-outage/568812/
[6] Ibid

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