

PUBLIC UTILITY COMMISSION OF OREGON
STAFF REPORT
PUBLIC MEETING DATE: April 23, 2019

REGULAR X CONSENT _____ EFFECTIVE DATE Upon Approval

DATE: April 16, 2019

TO: Public Utility Commission

FROM: Ted Drennan

THROUGH: Jason Eisdorfer and JP Batmale

SUBJECT: OREGON PUBLIC UTILITY COMMISSION STAFF: Request to open a general capacity investigation.

STAFF RECOMMENDATION:

Staff recommends the Oregon Public Utility Commission (OPUC or Commission) open a general capacity investigation as directed by the Commission in Order Nos 19-021, 19-022, and 19-023.

DISCUSSION:

Issue

Whether the Commission should open a general capacity investigation.

Applicable Rule or Law

Under ORS 756.515(1), whenever the Commission believes that an investigation of any matter relating to any public utility or telecommunications utility or other person should be made, the Commission may, on its own motion, investigate any such matter.

Analysis

Introduction

An investigation to examine generic capacity values was called for in the recent Commission orders from Resource Value of Solar (RVOS) dockets. As stated in those orders, a comprehensive approach to establishing greater understanding of capacity value may inform and harmonize how capacity is assessed across several dockets. This paper lays out the reasons for such an investigation, a scope for this investigation, and a phased plan for proceeding with the investigation.

Background

The capacity provided by a resource to the electric system plays a central role in determining that resource's overall value and therefore, informs fair compensation to that resource. The ongoing transformation of the energy market regionally and across the western United States has changed the resource portfolio to one that has an increasingly greater penetration of variable energy resources, leading utilities to examine their system capacity needs in different ways from the past. This change requires an examination at how capacity from various resources should be valued. To this end, the Commission and Staff have not had the opportunity to look at the issue of valuing capacity holistically and consistently across dockets and technology types.

The Commission recently completed a series of dockets related to the RVOS, UM 1910, UM 1911, and UM 1912. The resulting orders stated:

“...we determine that it is appropriate to begin to resolve universal capacity issues in a manner that is resource and program agnostic... It is our intention to harmonize the understanding of the value of capacity to individual utility systems through this investigation across all applications where capacity is relevant.”

For existing programs, capacity related issues have been dealt with on a piecemeal basis. There have been several methodologies used to establish capacity values based on resource type, such as distributed generation, utility-scale generation, energy efficiency and other upcoming technologies such as energy storage and demand response. Dockets and OPUC activities involving capacity range from the RVOS, energy efficiency (EE), and even addressing the overall system need for capacity, as in utility IRP planning and the determination of a sufficiency/deficiency demarcation. A holistic investigation into these issues related to capacity could lead to a harmonization of some of these disparate approaches.

Capacity valuation also plays a role in evaluation of new programs. Demand response programs may forestall or forgo investments in new capacity resources. Other time-of-use rates should incorporate economically efficient pricing, that is, higher rates for those increasing system costs. Other program benefit evaluations where capacity value needs to be considered include transportation electrification and energy storage. Proper valuation could allow the ability to defer other costlier investments in system capacity.

Scope of the Investigation

Staff suggests an investigation scope that examines three central questions relevant to valuing capacity in today's markets.

1. What is capacity?
2. How is capacity acquired?
3. How should capacity be valued?

These overall scope questions would define the phases of this investigation. The first two phases would move relatively quickly in a simplified manner to level set on what is capacity and how it is acquired. Their purpose would be to establish a shared or common framework. The

third phase would take the majority of the investigation and seek to examine appropriate method(s) for capacity valuation.

Phase 1

In phase 1 Staff would look to determine a consistent definition for capacity. Historically, capacity has been seen as more of a concept related to peak need, with 'energy' related to average electric needs. This can be seen in past IRPs where little to no credit was given to the ability of variable energy resources (VERs) such as wind and solar to meet utility peak needs, although the energy value was incorporated for planning processes.

Currently, increasing amounts of VERs and distributed energy resources have changed planning perspectives. Contribution to system needs for VERs can be represented by statistical analysis, one which can be the Effective Load-Carrying Capability (ELCC) method. Demand-side resources likewise are impacting thinking around capacity. Load shifting through use of smart devices can lower peak needs. Using smart thermostats to 'pre-cool' can avoid use of AC at peak need. Direct load control devices can be installed on customer equipment such as water heaters, air conditioners, or pool pumps for instance to enable utilities to shave peak needs. Time-of-use (TOU) tariffs attempt to align the price customers see with the actual price the utility incurs during peak periods, incenting customers to switch use to lower priced periods. Storage applications can also lower peak needs requirements for utilities. An examination into resource types including dispatchable, demand-side, variable intermittent resource (VIR), distributed energy resource (DER), storage, market contracts and any others suggested.

Some questions to be considered in this phase include:

- How do the resource characteristics such as dispatchability, firm capability to meet peak needs, commercially operational date vs timing of system need, and physical location on the system (T&D circumstances) factor in to the definition of capacity?
- What system operational needs does capacity meet?
- In the evolving energy grid is there a difference between flexible and firm capacity?
- Do different resource types bring different capacity levels or values?

Phase 2

Phase 2 would examine capacity acquisition, that is, how utilities acquire capacity. As mentioned earlier, utilities have chosen in recent IRP cycles to acquire resources outside of the traditional definition of system need for said resource, and have chosen more based on economic opportunities.

An investigation into the approach for acquisitions would look into the practices, if they differ based on the period of need, long-term, mid-term, short-term, seasonal, hourly, or other periods. The investigation would also examine the methods of acquisition whether they be through Requests for Proposals (RFPs), bi-lateral negotiations, market purchases, or capacity that is 'put' to the utility (QFs, Community solar, or net metering).

This phase would include a set of questions to be considered:

- What is the approach to acquiring capacity?

- Does the approach look to need or economics in the acquisition?
- Does this approach differ depending on the period of need, i.e., short-term, long-term?
- Does the approach to acquiring capacity differ for supply-side versus demand-side resources?

Phase 3

Finally in phase 3 the investigation would focus on establishing an appropriate valuation methodology for capacity by resource characteristics defined previously. These methodologies would be consistent across utilities but based on the value to each utilities system. There are a range of potential “solutions” that may define the best approach and will be explored within this investigation.

There may be more to learn from other jurisdictions and planning organizations. Here in the Northwest there is the Northwest Power and Conservation Council (NWPPCC), which is starting the 2021 Power Plan. The NWPPCC Seventh plan recognized a need for capacity that was mostly met with EE. Pacific Northwest Utilities Conference Committee (PNUCC) has examined values of resources to the Northwest. The California Public Utility Commission has a Resource Adequacy Docket that establishes a capacity value by utility. There are additional resources and consultants which could bring value to this investigation.

Questions that should be considered around the appropriate cost/values:

- Currently simple-cycle gas plant costs are generally used to value capacity. Is this still the correct approach?
- Should consideration of flexibility, and potential ancillary services offered by resources be included?
- Should supply-side and demand side resource be valued in the same way?
- Should multiple approaches be considered in valuation, or can a one-price fits all method work?

Conclusion

Launching a three-phased general capacity investigation would ensure 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.

PROPOSED COMMISSION MOTION:

Staff recommends the Oregon Public Utility Commission open a general capacity investigation.