GOAL OF UM 2011 PHASE III

Per the April 23, 2019 Commission Order (Order No. 19-155), this proceeding will investigate "capacity" (generally) to develop a broadly applicable methodology for valuing capacity. The goal of Phase III is to develop appropriate method(s) to calculate a value for capacity, and present these recommendations to the Commission. Based on the April 23, 2019 Commission order:

- Methodologies could be consistent across utilities, but based upon the value to each utility's system
- Methodologies may need to vary by resource type / characteristics

STAFF OBSERVATIONS FROM PHASES I AND II

During Phase I, Staff attempted to find a singular definition of "capacity," however presentations made by the utilities and stakeholders made it clear that a single definition may not be feasible nor desirable. This was underscored by the utility presentations in Phase II, which brought to the fore some differences among approaches and circumstances to how utilities consider and acquire capacity.

Phase III will address various forms of capacity, how those might be defined by utility system needs, resource characteristics, and so forth, as well as methodologies for calculating a value for those various typologies or categories of capacity. Put another way, if capacity can be broadly understood to mean "resources available to meet electric system needs," then a single value for capacity may not be sufficient, and differing values associated with a resource's ability to meet particular needs of a utility's system may be more appropriate.

The following outline of Staff observations should serve to frame the request for written comments:

A. Presentations filed to date in UM 2011 identify several distinct and overlapping system needs:
    a. The need to provide energy to meet load at any specific point in time
        i. PGE's Phase II presentation makes use of this definition of capacity to the exclusion of other types of capacity, unlike PacifiCorp and Idaho Power.
    b. Long term need (2-5 years)
        i. Typically addresses by utility resource planning process
    c. Medium term need (1 to 2 years)
    d. Short term need (0 to 1 years)
        i. Can differ considerably based upon time frame and resource type
            1. Seasonal needs
                a. Generally easier to anticipate
                b. Can plan for fuel storage (i.e. natural gas)
            2. Day-ahead and real time system needs
                a. Highly weather-dependent in terms of both load and variable renewable generation
    e. Operational needs required by NERC/WECC
        i. Highlighted by Idaho Power and PacifiCorp, in particular during Phase II

f. Planning needs determined by resource adequacy
    i. Peak capacity
    ii. Flexible capacity

B. Utility presentations in UM 2011 to date provide different characterizations of what is required to meet need:
    a. PGE understands capacity to mean the ability to "provide energy" to meet the need, which implies that the only resources with capacity value are dedicated, reserve generation assets available to put energy onto the system at any given time
    b. PacifiCorp's presentations consider a quantity of "resources" to meet need after accounting for certain operational reliability requirements and system conditions
        i. By implication, resources available to meet operational requirements are not "capacity"
        ii. In contrast to PGE, this understanding of capacity would not be limited to an asset's ability to put energy onto the grid
    c. Considering one aspect of capacity from a different angle, Idaho Power's presentation noted that Demand Response (DR) resources have helped mitigate certain capacity needs.
        i. By implication, a dispatchable resource or a utility-controllable program that can take the place of certain capacity needs can be considered a type of capacity, within the right context

C. Presentations to date differ on which categories of resources are qualified to meet needs
    a. Only generating resources (excluding storage) are a valid form of "capacity,"
    b. Only generating resources (including storage),
    c. Generating and conserving resources, including storage and DR, or
    d. Generating and conserving resources, including storage, DR and Energy Efficiency (EE)

D. Presentations differ based on whether financial and contractual resources have capacity value
    a. PacifiCorp considers financial and contractual resources to have capacity value.
    b. PGE argues otherwise.

E. Presentations differ on characterization of the changing needs of a utility's system
    a. As resources are added, the precise needs of the system will change, so the capacity value of a resource should vary based upon system conditions.

F. None of the presentations to date in UM 2011 acknowledge location as relevant for any capacity valuation. However, in other dockets utilities address the locational value of resources that provide ancillary services.
    a. For example, in Docket No. UM 1857, PacifiCorp proposes energy storage resources to be strategically located near critical facilities, in service of community resiliency. Thus, a storage resource can be a type of capacity (in lieu of or in conjunction with resources like reciprocating generators or small turbines) with values that may be greater or lesser, depending upon the location.

b. As another example, in Docket No. UM 1856, PGE justified its selection of the Baldock substation as the best location for an energy storage project due the local feeder lines having a high penetration of a variable renewable resource (solar PV). Thus, the storage resource in that specific location is more valuable due to the ancillary services it provides to that portion of the grid.
    i. In light of this capacity investigation, Staff would like to explore whether capacity products could (or should) have a locational value – as ancillary services can – particularly as the gird continues to evolve, with greater penetration of renewable resources, greater deployments of storage systems, newer technologies, and so forth.

REQUEST FOR WRITTEN COMMENTS

Oregon Public Utility Commission Staff request written comments from utilities, stakeholders, and all interested parties in response to the questions below. Please submit all written responses to PUC.FilingCenter@state.or.us **no later than December 16, 2019** and include "COMMENTS – DOCKET NO. UM 2011" in the subject line, so they may be properly filed in this docket.

With the above in mind, Staff request comments from the utilities and stakeholders in response to the following questions, which can be loosely categorized into two groups:

1) Questions that help refine and narrow the broad categories of resource attributes that might be considered "capacity," and

2) Questions that address how to calculate and assign a value to capacity.

A. Which Resource Attributes are Appropriate to "Capacity"?

1. Which of these capacity definitions are applicable for which types / categories of capacity, if at all?
    a. Nameplate capacity
    b. Maximum dependable capacity
    c. Baseload capacity
    d. Ability to meet energy needs
    e. Effective Load-Carrying Capability (ELCC)
    f. Peaking capacity

2. To what extent should flexibility and/or ability for the utility to dispatch a given resource (or resource category) be considered? In other words, should it be treated as a distinct capability or type/category of capacity, or as an enhancement to that resource's capability / capacity offering?

3. Similarly, how should potential ancillary services offered by a resource or resource category be considered? Do they represent a distinct category of capacity? Or an enhancement to the available capacity offered by a given resource?

4. 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?

5. Utilities and stakeholders have already submitted a good deal of relevant information in the form of presentations and workshop participation. Staff appreciate these contributions and will continue to draw upon them, and interested parties do not need to file the same presentation materials again. However, are there other comments pertinent to the questions asked in Phases I and II (i.e. "What is Capacity," and "How do we value Capacity today?") that you would like to share with all parties, to clarify, deepen, or add nuance to your position or understanding of these issues?

B. How Should Capacity Be Valued?

Capacity Value as a Function of Resource Type

6. Does capacity value compensation require a capacity resource to be available to meet all reliability needs in all time frames?
    a. Can a dedicated physical asset qualify to meet all reliability needs, or does it need to be supplemented with other resources?
    b. Can a portfolio of resources that meet the availability requirement qualify for the same or better compensation than a dedicated physical asset?
    c. Can a financial contract qualify for the same or better compensation than a physical asset?

7. Regarding the capabilities listed in question 4 above, what should be the qualification criteria for determining if a resource can meet these needs, assuming the information, communications and control systems are in place to support development of qualification criteria?

8. Should supply-side and demand-side resources that demonstrate the capability to satisfy the qualification criteria for that type of capacity be valued in the same way?

Capacity Value as a Function of Temporal, Durational, Locational and Size Attributes of Resources

9. How should the value of each type of capacity be calculated and how should its temporal availability (e.g. short vs. long-term capacity) affect the valuation?

10. How should temporal and durational attributes of capacity be calculated?

a. How could temporal and durational availability affect the valuation?
    i. How could availability of a system peak capacity product at critical times affect its valuation?
    ii. How could availability and sustained duration of ramping capability affect valuation of a capacity product?
    iii. How could seasonal availability affect valuation for a capacity product?
    iv. How could ability to provide ancillary services at times of system stress affect valuation?

11. If locational capacity is something that should be compensated, which factors should be used to inform the locational value of capacity?
    a. Avoided transmission costs (or needed upgrades),
    b. Avoided distribution costs (or needed upgrades),
    c. Impact of new capacity in a "load pocket," if applicable, or
    d. Other factors

12. How does the scale of a given resource affect its value?
    a. Is there a threshold size of a project, above or below which its value to the system as a whole changes categorically, or out of proportion to an increase or decrease the number of MWs of power it can produce?
    b. Could a threshold size in a specific location sometimes affect valuation?
    c. Could a threshold size affect whether MW-year or MWh compensation is appropriate.

Benchmarking and Other Valuation Techniques for Capacity

13. Currently, simple-cycle gas plant costs are generally used to value capacity. Is this method still appropriate for some types or categories of capacity?
    a. If yes, for which types?
    b. If no, for which types?
        i. Further, is a new or different benchmark or proxy more appropriate? If so, for which types/categories of capacity?

14. Should capacity compensation for Distributed Energy Resources (DER) be based solely upon contribution to meeting an identified system need, or should it be supplemented with other factors considered in DER valuation? How relevant are the following factors for capacity valuation, and which are missing?
    a. Avoided environmental costs
    b. Avoided fuel costs
    c. Avoided plant O & M costs
    d. Avoided generation capacity costs (capex)
    e. Avoided cost of transmission upgrade
    f. Avoided distribution capacity costs
    g. New costs for new distribution system technologies

h. Costs associated with forecasting (variable renewables)
i. Ability to dispatch (i.e. small turbines, gen sets, storage) vs. lack of ability to dispatch (i.e. variable renewables)
j. Avoided (or differently calculated) costs of reserve capacity

15. How can proper calculation of RA capacity help to cost effectively address the region's RA issues?

16. Given your answers to all of the above questions, do you have recommendations about what types of capacity should be compensated, how to define those types of capacity, and do you have examples of calculations or methodology suggestions you would like to offer?

PUBLIC WORKSHOP: REMINDER

As a reminder, staff will host a public workshop Monday December 2, 2019 in Portland to discuss these questions, potential responses, and the overall scope of this investigation. A formal agenda will be available soon, but generally speaking, during the December 2 workshop:

- Staff will briefly discuss other existing Oregon PUC programs with existing avoided cost, of which capacity value is a component
  - To include: RVOS, PURPA, EE, etc.
  - Intended to serve as an overview of various ways the Commission has considered capacity to date
  - These models differ from one another, and might or might not present desirable options moving forward
- RAP will discuss some experiences from other states/jurisdictions, which offer options and lessons learned
- Staff and attendees will work collaboratively to discuss the issues raised in these scoping questions, as well as methods or components that utilities or stakeholders would like Staff to consider

Please refer to the hearing announcement on the Commission's eDockets website for additional information: https://edocs.puc.state.or.us/efdocs/HCD/um2011hcd151218.pdf

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