



PacifiCorp

UM 2011 Capacity Workshop

October 24, 2019





What is Capacity?

To provide reliable service to customers, a utility must have sufficient resources in every hour to:

- Serve customer load, including losses and any unanticipated load increase.
- Hold operating reserves to meet NERC and WECC reliability standards.
 - Contingency, regulation, frequency response.
- Replace resources that are unavailable due to:
 - Forced and planned outages
 - Dry hydro conditions
 - Wind and solar conditions
 - Market conditions

PacifiCorp refers to “Capacity” as the total quantity of resources necessary to reliably serve customers, after accounting for the items above.

What is PacifiCorp's Approach to Acquiring Capacity?



Part 1: Types of Market Products

- On a day-ahead basis, PacifiCorp buys to ensure it has sufficient resources to reliably serve customer load in every hour or sells if it has economic generation resources in excess of its requirements.
 - Common market products
 - Heavy load hour (HLH): 6:00am-10:00pm (Monday through Saturday).
 - Light load hour (LLH): 10:00pm-6:00am (Daily, all day Sundays/Holidays).
 - HLH and LLH day-ahead products can be either bilateral or cleared by ICE.
 - Less common:
 - Super-peak: 1:00pm-8:00pm – bilateral.
 - Custom products – bilateral.
 - CAISO hourly products – cleared by CAISO.
- Starting up to 36 months in advance of delivery, PacifiCorp buys and sells to manage its load and resource balance and reduce its open position.
 - The vast majority of forward products are for HLH or LLH blocks for monthly or quarterly periods.

What is PacifiCorp's Approach to Acquiring Capacity?



Part 2: Resources

- Short-term to Mid-term:
 - PacifiCorp occasionally has opportunities to buy specified resources for a term (e.g. hydro slices, gas plant tolling where we supply the fuel)
 - Resources are evaluated when opportunities are presented, and PacifiCorp transacts when resources provide benefits relative to other alternatives.
 - Small or short-term resources are typically not modeled in the IRP models.
- Long-term:
 - Resource need is first identified in PacifiCorp's IRP.
 - IRP identifies resource types (wind, solar, gas, etc.) that provide the lowest cost customer benefit.
 - PacifiCorp is in constant contact with active power plant developers on PacifiCorp's system reviewing potential development opportunities and their view on generation technology pricing/advancements.
 - IRP establishes an action plan that specifies how identified resources will be procured (i.e. request for proposals).
 - Resource opportunities identified as part of an RFP or bilateral negotiation are often evaluated using the IRP models .

What is PacifiCorp's Approach to Acquiring Capacity?



Part 3: Resource Acquisition: System Need and/or System Economics?

- PacifiCorp reviews generation asset opportunities based on IRP results, which identifies a least cost/least risk means to reliably serve customers, with economics inherently embedded in resource acquisition decisions.

PacifiCorp will review and pursue all generation opportunities that provide least cost/least risk long-term customer benefits



Capacity Questions

- *How do balancing services provided by the EIM affect these acquisition decisions?*
 - EIM is an intra-hour energy market, not a capacity market. However, highly flexible dispatchable generation assets provide both EIM value and overall system value and are highly desirable.
- *How do various forms of generation ‘put’ to the utility affect these capacity acquisition decisions?*
 - QFs: QFs represent a key part of our overall generation planning as a result of their unique “put” option to PacifiCorp.
 - Community Solar: Any community solar program would be considered in overall system capacity planning as potential loss of load.
- *How are demand-side resources treated in terms of capacity acquisition?*
 - PacifiCorp’s IRP (or IRP Update) identify cost-effective demand-side resource bundles.
 - Following the IRP, these bundles are incorporated in PacifiCorp’s load forecast.
 - PacifiCorp’s Customer Solutions group works with Energy Trust of Oregon and stakeholders in other states to meet targets derived from the IRP.