

Capacity Discussion



Phil DeVol, Power Supply Planning

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October 24th, 2019
Salem, Oregon

Integrated Resource Planning

- Peaking capacity
 - Is the portfolio of supply-side, demand-side, and transmission resources adequate to meet projected need for peaking capacity?
- Flexible capacity
 - Is the portfolio adequate to meet projected need for peaking capacity *and* flexible capacity?
- Effect of resource retirements
 - Is the portfolio, *as modified by resource retirement scenarios*, adequate to meet projected need for peaking capacity and flexible capacity?

IRP Capacity Deficiencies

- IRP analyzes supply-side, demand-side, and transmission resources
- IRP preferred portfolio is a “least-cost, least-risk” plan to meet future energy and capacity needs
- RFP requirement

Operations Planning

- Monthly operations planning
 - Evaluation of heavy-load and light-load energy positions over the coming 18 months
- Energy Risk Management Standards
 - Policy directing front office hedging activities in term markets
 - Prompt-month + 1 through prompt 18 months

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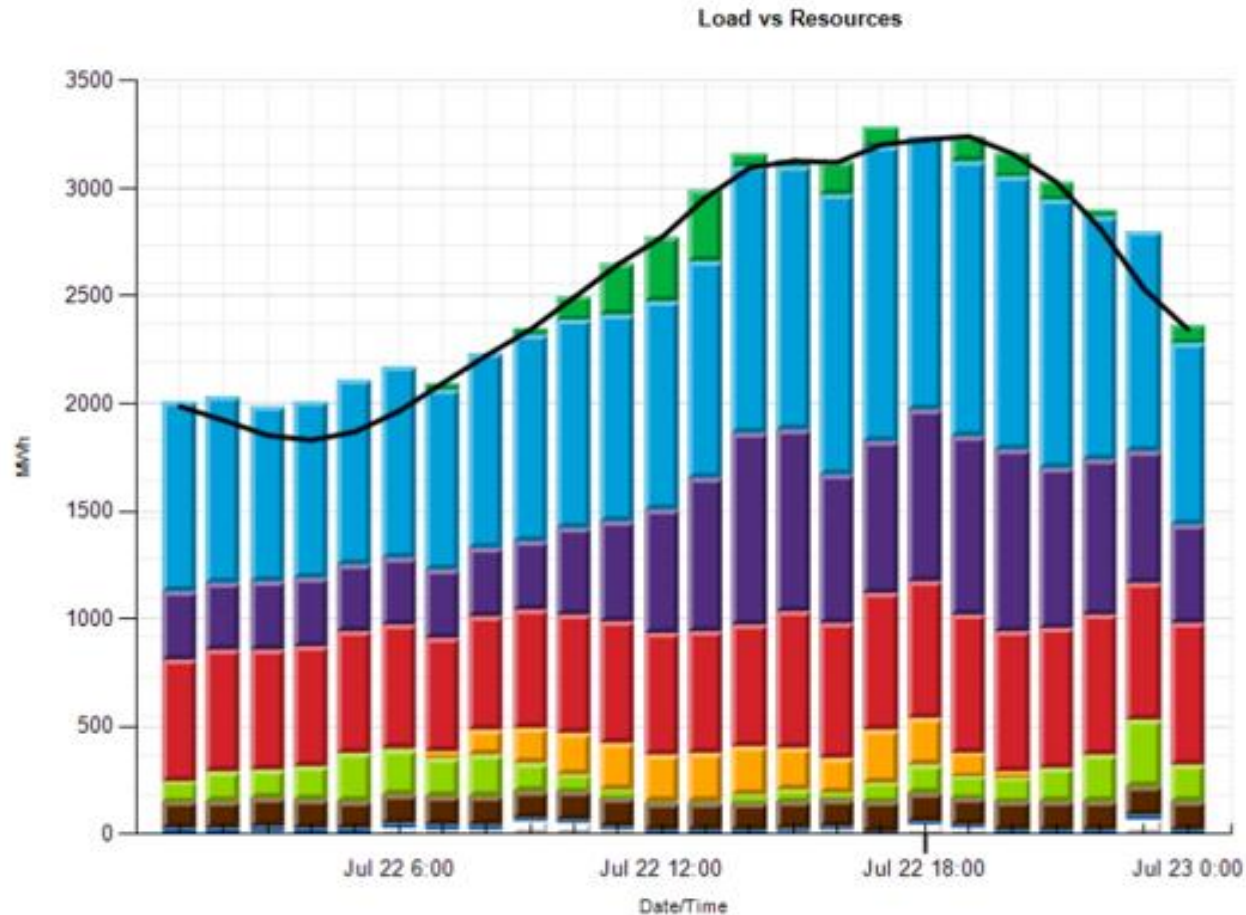
Approach to acquiring capacity

- Increase Dispatchable Generation Capacity (Hydro, Thermal, Gas)
 - Start-up off-line generation units(In-hour for Hydro, future hour for Thermal and Gas)
 - Put gas generation units on turning gear (typically future hours)
 - Firm-Energy market purchases(future hours)
 - Forego Firm Energy sales(future hours)
 - Implement Demand Side Management programs(could be in hour, typically future hours)
 - Load Shedding(In-hour Emergency only)
- Purchase Capacity products (In-hour)
- Selling Non-Firm and/or Recallable Energy products (In-hour or future hours)
- Delay Planned Outages on generating units (Seasonal based on demand)

Acquiring capacity in different time horizons

- The approach to acquire capacity is always to ensure reliability, and to achieve that in the most economic and compliant manner possible through all time horizons.
- We do not sell Non-Firm energy on the forward markets.
- Demand Response considerations
 - Customer Impact
 - Frequency Dispatched
 - Economic factors

A Capacity look for Peak Load Hour



Additional capacity was achieved by dispatching demand response programs. AC Cool Credit and Flex Peak programs reduced load by approximately 65 MW.

<u>Resource</u>	<u>Forecasted MW</u>	<u>Actual</u>	<u>Capacity</u>
Geothermal	20	21	53
PURPA/Other	106	104	210
Total WIND	230	98	725
Total SOLAR	185	112	290
Natural Gas	551	604	680
Coal	788	932	1,026
Hydro	1,237	1,286	1,709
Purchases	100	100	
Inadvertent		-15	
Total Generation	3,217	3,227	
Total Load	3,217	3,242	