

# PacifiCorp

## 2017 Integrated Resource Plan

Washington Utilities and Transportation Commission  
July 11, 2017



# Preferred Portfolio Highlights

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## **Renewable Resources and Transmission**

- 905 MW of upgraded (“repowered”) wind resources, all by the end of 2020
- 1,959 MW of new wind resources (1,100 MW by the end of 2020 with a new 500 kV transmission line in Wyoming)
- 1,040 MW of new solar resources.

## **Demand Side Management**

- 2,077 MW (“nameplate”) of incremental energy efficiency
- 365 MW of incremental direct load control

## **Wholesale Market Purchases**

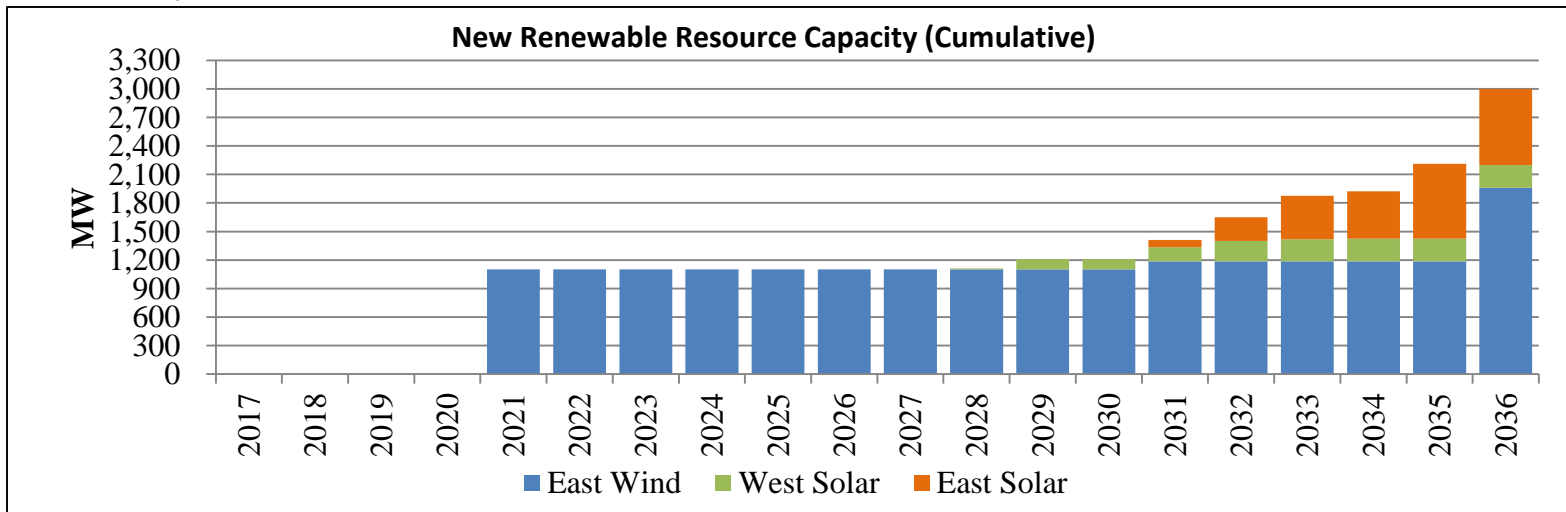
- Summer front office transactions average 817 MW per year, down 29 percent relative to the 2015 IRP Update preferred portfolio

## **Existing Coal and New Natural Gas Resources**

- Assumed coal unit retirements total 3,650 MW by the end of 2036.
- By the end of the planning horizon, natural gas-fired capacity totals 1,313 MW, a reduction of 1,540 MW relative to the 2015 IRP preferred portfolio.

# Renewable Resources and Transmission

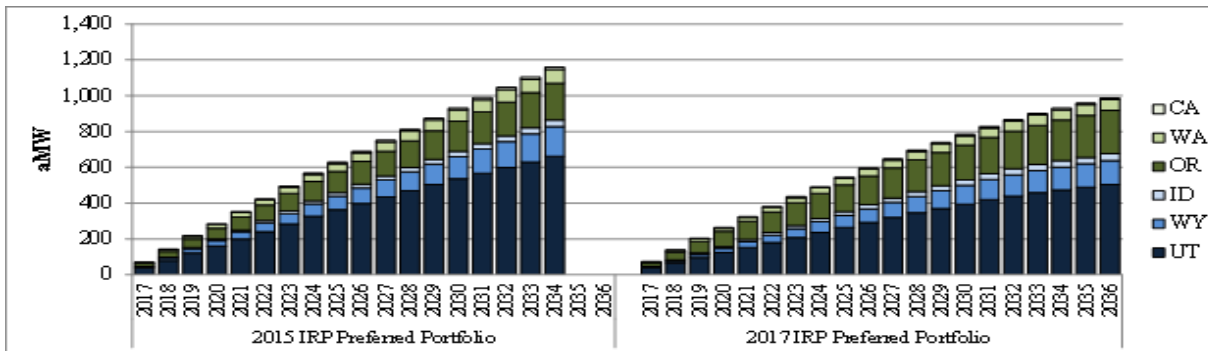
- Repowering of at least 905 MW of existing wind capacity by the end of 2020, will provide production tax credit (PTC) benefits for ten years, increase energy production, and extend the asset life of these facilities, resulting in significant cost savings for customers.
- A new 144 mile, 500 kV transmission line in Wyoming with 1,100 MW of new low-cost wind resources added by the end of 2020, will relieve transmission congestion for existing resources and provide additional zero-emission energy while providing all-in economic benefits for customers.
- By 2036, new wind capacity totals 859 MW (85 MW in Wyoming in 2031 and 774 MW in Idaho in 2036) and new solar capacity totals 1,040 MW (239 MW in the west and 801 MW in the east).



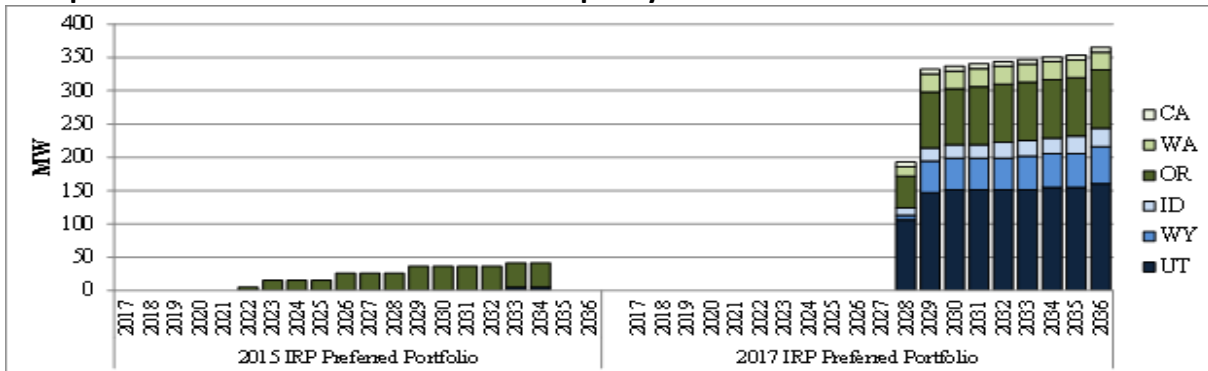
# Demand Side Management

- Energy efficiency meets 88% of forecasted load growth (up from 86% in the 2015 IRP).
- Decreased energy efficiency relative to the 2015 IRP is driven by reduced loads, reduced costs for wholesale power, and renewable resource alternatives.
- Additional direct load control capacity coincides with assumed coal unit retirements.

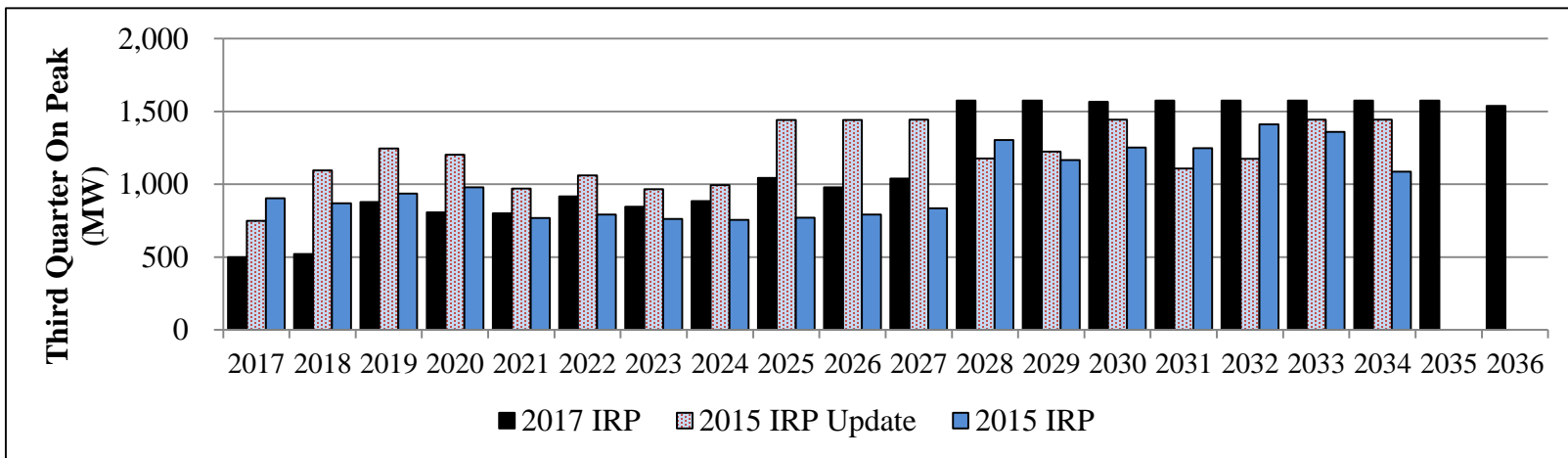
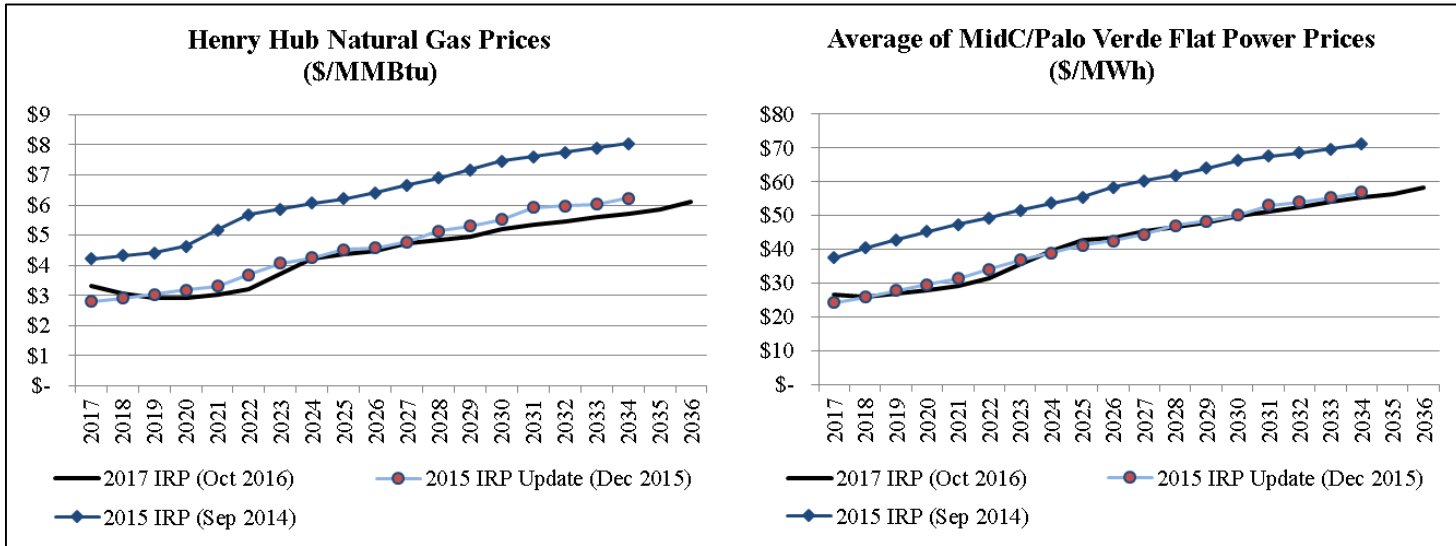
**Comparison of Total Energy Efficiency Savings between 2017 IRP and 2015 IRP**



**Comparison of Total Direct Load Control Capacity between 2017 IRP and 2015 IRP**



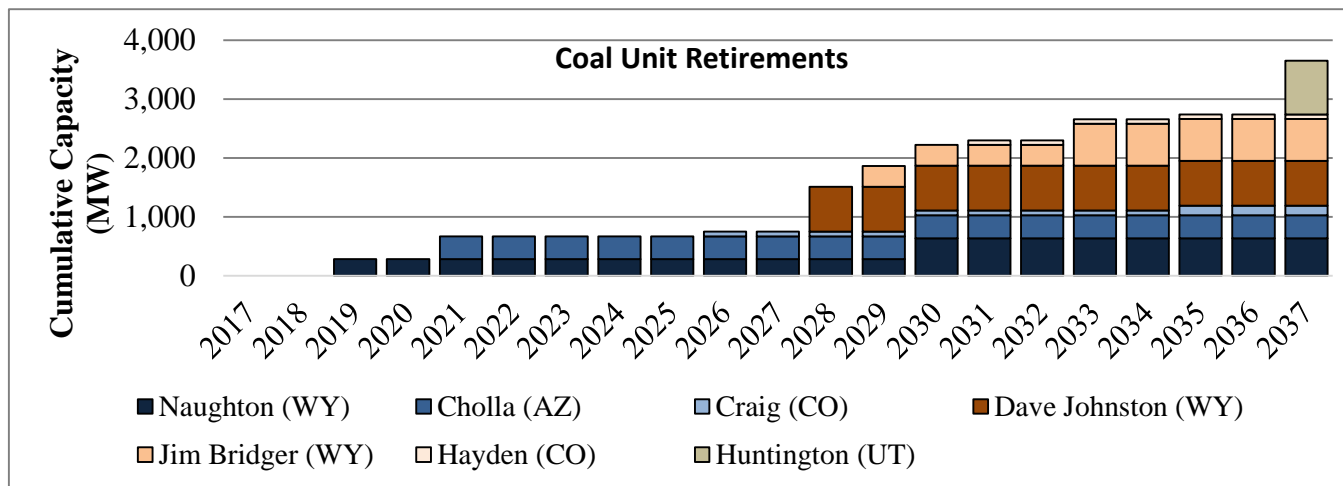
# Wholesale Power Market Purchases



# Existing Coal and New Natural Gas Resources

## Existing Coal Resources

- The resource mix reflects a cost-conscious transition that is increasingly less reliant on coal generation without major incremental emission control retrofits; focused on alternative compliance outcomes.
- Assumed retirements total 667 MW by the end of 2020, 2,222 MW by the end of 2030, and 3,650 MW by the end of 2036.



## New Natural Gas

- The first SCCT natural gas resource is added in 2029, the first CCCT natural gas resource is added in 2030.
- Long-term supply alternatives, including potential for energy storage, will continue to be evaluated through on-going resource planning updates.

# CO<sub>2</sub> Emissions

- Over the first ten years, average annual CO<sub>2</sub> emissions are down by 21 percent (10.5 million tons per year) relative to the 2015 IRP.
- By 2020, system CO<sub>2</sub> emissions are approximately 12% below 1990 levels (~46 million tons).
- By the end of the planning horizon, system CO<sub>2</sub> emissions are 24.5% from current levels.

