

# **Northwest Power and Conservation Council power planning**

**Presentation by Executive Director Bill Edmonds to the  
Oregon Senate Interim Committee on Energy & Environment**

**Dec. 11, 2024**

# Who we are

- Authorized by Congress through the Northwest Power Act in 1980 to give the region a greater voice in planning for energy and protecting fish and wildlife.
- Governors of Idaho, Montana, Oregon, and Washington each appoint two members to the Council. Central office in Portland.
- The Act requires the interstate Council to develop, *with broad public participation*, a *regional power plan* and a *Columbia River Basin fish and wildlife program*.
- The agencies of the U.S. government that operate or regulate the Columbia hydroelectric facilities then have responsibilities under the Act towards the Council's plans and programs.



# Power planning under the Northwest Power Act

- Council develops a regional conservation and electric generation plan.
- Priority is resources that are “cost-effective.” Also, first priority goes to conservation and second to renewable resources, before other resources.
- Review the power plan every five years. Produce it in a highly public process, engaging Northwest residents and specific entities.
- All actions by Bonneville to acquire conservation and generating facilities to add to the federal base hydropower/nuclear system shall be consistent with the Council’s power plan, with some off ramps.
- Why did we get handed this task? WPPSS in the 1960s/70s



# WPPSS

- The Power Act's passage in 1980 occurred during the ongoing fallout of a power planning failure in the Northwest created by the Washington Public Power Supply System – better known as WPPSS.
- WPPSS traces its roots to errors in load forecasting. Beginning in the 1960s, Northwest utilities, BPA, and other forecasters predicted looming power shortages for the region because increased demand would out-strip supplies.
- This led to a decision to finance the construction of five nuclear power plants in Washington state. Only one was ever built, the Columbia Generating Station near the Tri-Cities.
- This triggered the largest municipal bond default in U.S. history. Debt from this is still being paid off by Northwest electric ratepayers.

# What we do: Columbia River Basin Fish & Wildlife Program

- Develop – also via an extensive public process – a program to protect, mitigate and enhance fish and wildlife affected by hydropower system in the Columbia River Basin, especially (but not only) salmon and steelhead
- The Program is updated every 5 years, based primarily on recommendations from state and federal fish and wildlife agencies and the region’s tribes, as well as others
- Under the Act, the Council’s Fish and Wildlife program informs decision-making by specific U.S. government agencies in areas like:
  - Operating decisions for federal Columbia River hydrosystem facilities
  - Spending federal dollars on dam modifications
  - Licensing any new hydropower facilities
  - Spending by Bonneville and other federal agencies on fish and wildlife measures



Columbia River salmon

# Power Plan

# Major components of a power plan:



EVs are forecasted to add significant load growth in the next 5-20 years in the Northwest

- Forecast of regional electricity demand over the next 20 years
- Analysis of all available generating resources and thousands of conservation measures and similar actions (e.g., demand response) for cost, energy/capacity value, environmental effects
- “Cost-effective” new resource strategy - least cost with acceptable risk - maintain adequacy and reliability; economical
- Council’s regional fish and wildlife protection and mitigation program is part of plan – plan’s resource strategy is intended to help implement

## Use

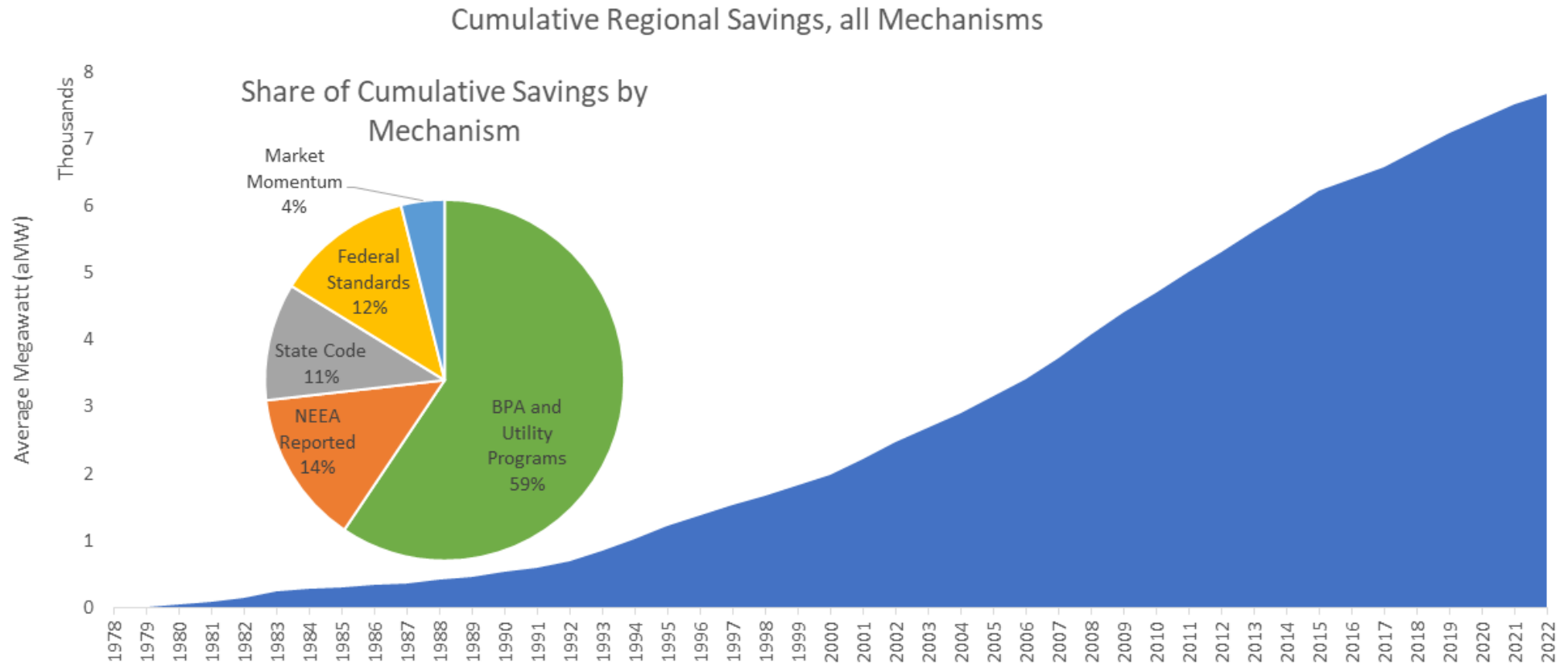
- Power Plan’s specific legal tie under the Act is to Bonneville and its resource acquisitions
- Plan also serves as an independent reference for all of the region’s utilities, regulatory commissions and policymakers.

# Power Plan results: Major energy efficiency gains in NW

These energy efficiency savings add up!

Since 1980:

- We've saved more than 7,800 aMW – or almost 3x's the average annual output of Grand Coulee Dam
- It's avoided \$5 billion in energy costs in the PNW.



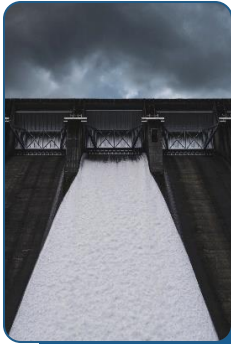


# 2021 Power Plan: A changing energy landscape

- State **clean policies across the WECC** resulting in:
  - Significant resource retirements/conversions
  - Large renewable builds
- Dramatic **decrease in price** for resources:
- Meanwhile, **less low-cost energy efficiency than prior power plans**
- Emphasis on reserves being of paramount importance, and to support integration of more renewable energy



# 2021 Power Plan Strategy



## Existing System: Increase Reserves

To reduce regional needs and support integration of renewables, the region needs to double the assumed reserves. This can most cost-effectively be done through more conservative operation of the existing system (both thermal and hydro units).



## Renewables: At least 3,500 MW by 2027

Renewables are recommended due to their low costs and carbon reduction benefits. Long-term build out will impact the transmission system and should be done mindful of the cumulative impacts of the new resources.



## Energy Efficiency: 750-1,000 aMW by 2027

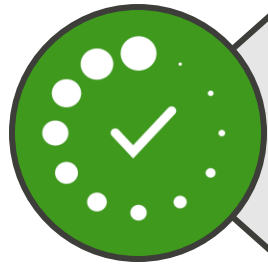
Significantly less acquisition than prior plan due being less cost-competitive, a slower build resource, not inherently dispatchable, and sensitive to market prices. Efficiency that supports system flexibility is most valuable.



## Demand Response: Low-Cost Capacity

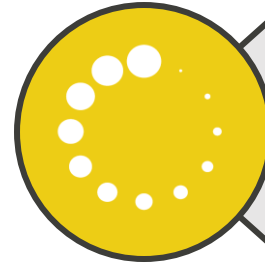
Highest value products are those that can be regularly deployed at a low-cost and with minimal to no impact on customer. The Council identified demand voltage regulation and time of use rates as two products, estimating 720 MW of potential.

# Key Areas the Council is Tracking



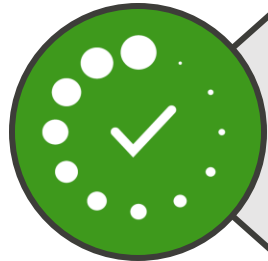
## Renewable Development:

Region has acquired over 3,200 MW of renewables, on track to surpass the minimum called for in the plan



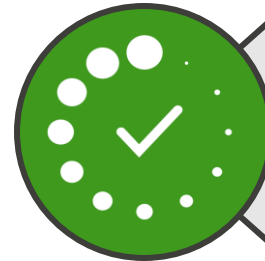
## Reserves:

A successful WRAP and day ahead market(s) will likely provide needed signals, but near-term risk remains



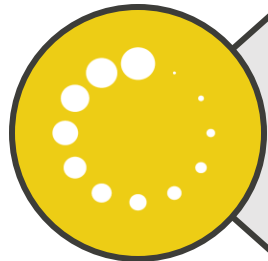
## Energy Efficiency:

Regional acquisition of energy efficiency appears to be on track with the power plan target



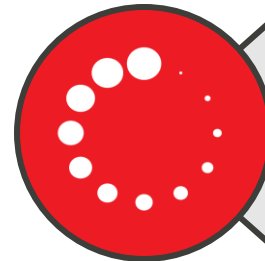
## Existing System Changes:

Changing decisions around coal plants (~1480 MW of conversions) alleviate near-term challenges



## Demand Response:

Regional utilities are exploring demand response products, however more potential remains



## Load Growth:

Future load growth is a significant risk area, particularly near-term uncertainty around data centers

# The Ninth Northwest Power Plan

- Timeline: Officially commencing work in February 2025. Aiming to have final version adopted by end of 2026
- New long-term load forecast expected in spring 2025
- Core issues:
  - Load uncertainty
    - Demand growth/existing resources
  - Need for clean resources
    - Transmission & timelines
  - Planning for Bonneville Power Administration
  - Climate change impacts



## The 9th Northwest Power Plan

# Recap

- **Who we are:**
  - Authorized by Congress through the Northwest Power Act in 1980 to give the region a greater voice in planning for energy and protecting fish and wildlife.
  - Governors of Idaho, Montana, Oregon, and Washington each appoint two members to the Council. Central office in Portland.
- **What we do:**
  - The Act requires the interstate Council to develop, *with broad public participation, a regional power plan and a Columbia River Basin fish and wildlife program.*
- **What's next:**
  - The Council's processes for amending its Fish and Wildlife Program and developing the Ninth Power Plan will commence in early 2025 and continue throughout 2026.



**Questions?**

**Thank you!**



**Northwest Power and  
Conservation Council**