Proposed Resolution

- PUDs may support or oppose a ballot proposition (RCW 42.17A.)
- Commission considering a draft resolution
  - In opposition of Initiative 1631 (Initiative)
  - Resolution provided on website and as a handout
- Resolution is limited on impacts to District operations, costs, and electric system reliability
Public Hearing

- Public Hearing
  - Open Public Hearing
  - Staff Analysis/Commission Comments
  - Break
  - Open public comment
    - Approximately equal time “for” and “against” Initiative
    - Questions about presentation
  - Close public comment
  - Close public hearing

- Consideration of Resolution by Board of Commissioners
  - Commissioner discussion
    - Including responses to questions about staff presentation
  - Vote on Resolution (if taken)
Initiative 1631
The Protect Washington Act

Impact Analysis on
District Operations, Costs, Reliability
Staff’s Analysis

- Focus is on impacts to the District and the electric sector
  - We do not analyze impacts on other sectors of the economy
- The Initiative is complex
  - Many hours devoted to understanding the Initiative and its impacts
  - District’s methodology & results benchmarked with other utilities
- Emission factors deferred to rulemaking
  - District required to make best-effort assumptions
- Presentation objective is to provide a full-scope overview
  - Will not cover each slide in detail due to time limitations
How This Presentation is Organized

- Context – District Power Supply
- Initiative & Impacts
  - Overview
  - Credits for Pollution Fees Paid
  - Financial Impacts
  - Carbon & the Electric Sector
- Staff Observations
Context – District Information
Overview Buying & Selling Power

Simplified Example

Power Provided to Customers

Packwood Lake Hydroelectric Project

Power Purchase Contracts

White Creek Wind Project

Benton P.U.D

Nine Canyon Wind Project

Hourly/Daily Balancing

Excess Power Sales

Power Markets

Context
Benton PUD Load & Resources

**Annual – Based on Average Water Years**

- **Frederickson CCCT**
- **Wind/Packwood**
- **BPA Slice Contract**
- **BPA Block Contract**

*Retail Load Forecast plus distribution & transmission losses

*CCCT – Combined Cycle Combustion Turbine
Benton PUD Load/Resource Balance

Monthly – Average Water

Block/Slice Generation observed over the last 3 years
Frederickson available as energy call option through August 2022

Energy surplus sold to market

Rely on Frederickson & Market Purchases to meet load

Energy surplus sold to market

Context
Benton PUD Load/Resource Balance

Daily Peak Hour by Month

Blue = Surplus
Red = Deficit
Includes Frederickson
Overview
Initiative Measure No. 1631

Ballot Title

Initiative Measure No. 1631 concerns pollution.

This measure would charge pollution fees on sources of greenhouse gas pollutants and use the revenue to reduce pollution, promote clean energy, and address climate impacts, under oversight of a public board.

Should this measure be enacted into law? Yes [ ] No [ ]

Ballot Measure Summary

This measure would impose pollution fees on certain large emitters of greenhouse gas pollutants based on rules determining carbon content, starting in 2020. A public board would supervise spending the revenues on reducing pollution, promoting clean energy, and addressing climate impacts to the environment and communities. Utilities could receive credits for approved investments. Indian tribes would consult on projects directly impacting their land. There would be periodic reporting on the measure’s effectiveness.
Initiative Overview

- Pollution fee imposed on:
  - Fossil fuels sold or used within the state.
  - Electricity generated within or imported for consumption within the state.

  - Increases by $2/ton per year plus inflation.
  - $2/ton increases stop
    - once the state reaches its 2035 emissions goal, and
    - is on a trajectory to meet 2050 goal, only inflation thereafter.
Initiative Overview (continued)

- For electricity, the fee obligation begins with the generator
  - Can be assumed by the purchaser (e.g., utility)

- As a federal entity, BPA cannot pay any fee
  - In-state purchasers (utilities) must assume the obligation
  - BPA to be assigned a default emission factor – unknown at this time

- Pollution fees put into special fund
  - Used for designated purposes

- Utilities may “retain” fees paid, if spent in accordance with a plan
  - Plan approved by:
    - Department of Commerce for Consumer Owned Utilities (COUs)
    - Utilities & Transportation Committee for Investor Owned Utilities (IOUs)
Initiative Exemptions

- Coal transition power (Centralia)
- Coal closure facility (e.g. Colstrip 1 & 2)
- Energy-intensive trade exposed (EITE) facilities
- Aircraft and maritime fuels.
- Diesel, biodiesel or aircraft fuels used for agriculture purposes.
- Other
Credits for Pollution Fees Paid

Utility Retained Fees
Utility Retained Pollution Fees

Opportunity to Claim Credit

- Utility may claim credit for up to 100% of pollution fees paid
- Subject to development of a Clean Energy Investment Plan (CEIP)
  - Must be approved by the Department of Commerce (for public utilities)
    - In meaningful collaboration with the Board/Panels
  - Credits must be reinvested in eligible projects
    - Investments must be in addition to existing programs and expenditures necessary to meet emission reduction or conservation requirements
  - Must describe a long-term strategy to eliminate any fee obligation on electricity and minimize any fee obligation on natural gas
  - Must submit annual reports, and update plan every two years
Initiative Governance: Public Oversight Board

- Establishes a Public Oversight Board in the Governor’s Office
  - 15 Voting members
  - No dedicated utility representative
- Mandatory consultation with Advisory Panels
Initiative Governance: Advisory Panels

- **Clean Air and Clean Energy:**
  - 9 members, representing tribal, environmental, business, labor and Pollution Health Areas (PHAs), expertise in carbon reduction.
  - Co-chaired by 1 business interest, 1 representing statewide labor.

- **Clean Water and Healthy Forests:**
  - No more than 9 members, represent tribal, environmental, business, labor and PHAs.
  - Co-chaired by 1 Tribal leader, 1 representing statewide environmental interests.

- **Economic and Environmental Justice:**
  - 2 labor members.
  - 5 other members, of which at least 1 is Tribal leader, and at least 2 are non-Tribal leaders representing PHAs.
  - Co-chaired by 1 Tribal leader, 1 representing PHAs that are not tribal.
Financial Impacts
Pollution Fees & Other Economic Impacts

1. BPA Market Purchases
2. Benton PUD Market Purchases
3. Frederickson Operations
4. Secondary Market Sales
Financial Impacts

Financial impact areas

1) BPA Market Purchases
2) Benton PUD Market Purchases
3) Operation of Frederickson
4) Secondary Market Sales
   - Benton PUD’s Sales
   - BPA’s Sales

Impacts include:
- Pollution fees paid
- Other economic impacts
Uncertainty
Relative to Financial Impacts

☐ Benton PUD required to make key assumptions for analysis
  ▪ Default emission factors deferred to rulemaking
    ■ BPA market purchases
    ■ Benton PUD unspecified market purchases
  ▪ Impacts on market prices
  ▪ Impacts on the dispatch of Frederickson power plant

☐ Focus is on years 2020-2022
  ▪ Greater uncertainty in out years
Estimated Impact on Secondary Market Prices
Affects Both Purchases & Sales

Mid-C Annual Average Market Price

Key Assumption

Average Change in Median Market Price of $1.40/MWh

Source: TEA Aurora Modeling
Impact Areas

1) BPA Market Purchases
   Allocated to Benton PUD

2) Benton PUD Market Purchases

3) Operation of Frederickson
   Contract through 2022

4) Secondary Market Sales

1 – Assumed to impact Block portion of BPA Contract
Financial Impacts
Pollution Fees & Other Economic Impacts

1. BPA Market Purchases
2. Benton PUD Market Purchases
3. Frederickson Operations
4. Secondary Market Sales
1) BPA Market Purchases

Overview

- BPA’s portfolio is predominantly hydro
  - Some market purchases throughout the year
- BPA tracks their carbon emissions factor
  - Registered with the California Air Resources Board as an Asset Controlling Supplier (ACS).
  - Very low emissions factor due to hydro and nuclear
- BPA is ≈90% of Benton PUD power purchases
  - Benton PUD assumes a proportional share of the resources in BPA’s portfolio
  - Assumes a proportional share of BPA’s carbon content
1) BPA Market Purchases

Key Assumptions

- Applies to Block contract only
- BPA emission factor based on California Air Resources Board
  - We doubled the emissions factor due to application to Block only
- No other adjustments for Washington in-state generators
  - Fee paid only once – have generators already paid the fee?
  - Transition coal and coal closure facility emissions exempt from pollution fee

<table>
<thead>
<tr>
<th>BPA Purchases - I-1631 Impacts</th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
</tr>
</thead>
<tbody>
<tr>
<td>Block Purchases (aMW)¹</td>
<td>101.92</td>
<td>101.92</td>
<td>101.92</td>
</tr>
<tr>
<td>Estimated Emission Factor²</td>
<td>0.024</td>
<td>0.024</td>
<td>0.024</td>
</tr>
<tr>
<td>Carbon Fee</td>
<td>$15.00</td>
<td>$17.30</td>
<td>$19.65</td>
</tr>
<tr>
<td><strong>Estimated Carbon Cost</strong></td>
<td><strong>$321,415</strong></td>
<td><strong>$370,699</strong></td>
<td><strong>$420,968</strong></td>
</tr>
</tbody>
</table>

1 - Block Purchases subject to BPA Market Purchases
2 - Metric tons/MWh based on doubling CARB ACS designation since designation based on entire BPA portfolio
Financial Impacts
Pollution Fees & Other Economic Impacts

1. BPA Market Purchases
2. Benton PUD Market Purchases
3. Frederickson Operations
4. Secondary Market Sales
2) Benton PUD Market Purchases

- Uncertainty surrounding emission factor for unspecified purchases

NEW SECTION. Sec. 8. POLLUTION FEE. (1) A pollution fee is imposed on and must be collected from large emitters based on the carbon content of:

(a) Fossil fuels sold or used within this state; and

(b) Electricity generated within or imported for consumption in the state.

(2) The fee must be levied only once on a particular unit of fossil fuels or electricity.

(3) Beginning January 1, 2020, the pollution fee on large emitters is equal to fifteen dollars per metric ton of carbon content. Beginning January 1, 2021, the pollution fee on large emitters increases by two dollars per metric ton of carbon content.

(5) For the generation or import of electricity from an unspecified source, the department of ecology, in consultation with the department of commerce, must select a default emission factor that maximizes the incentive for light and power businesses to specify power sources without also unduly burdening the ability to purchase electricity from the market.
2) Benton PUD Market Purchases

Scenario 1 – Higher market price only, all purchases “specified”

- Key assumptions for this scenario:
  - District is able to specify the source of all purchases
  - Pollution fee paid by generator and embedded in market price
  - Higher market price, but no pollution fee paid by District
  - Utility avoids pollution fee, but not the economic impact of higher prices
  - As such, Unspecified Source Default Emission Factor not applicable

<table>
<thead>
<tr>
<th></th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
</tr>
</thead>
<tbody>
<tr>
<td>Market Purchases - Baseline</td>
<td>$5,954,690</td>
<td>$6,117,603</td>
<td>$6,211,114</td>
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<tr>
<td>Market Purchases - Initiative</td>
<td>$6,175,607</td>
<td>$6,389,973</td>
<td>$6,528,282</td>
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<tr>
<td>Incremental Cost - Impact of I-1631</td>
<td>$220,917</td>
<td>$272,370</td>
<td>$317,168</td>
</tr>
</tbody>
</table>
2) Benton PUD Market Purchases

Scenario 2 – Higher market price + 38% of market purchases “unspecified”

<table>
<thead>
<tr>
<th>Natural Gas Plant Emissions Factor</th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
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<tbody>
<tr>
<td>Incremental Cost - Market Purchases</td>
<td>$220,917</td>
<td>$272,370</td>
<td>$317,168</td>
</tr>
<tr>
<td>Purchases (aMW)¹</td>
<td>22.198</td>
<td>22.198</td>
<td>22.198</td>
</tr>
<tr>
<td>Unspecified Source %²</td>
<td>38%</td>
<td>38%</td>
<td>38%</td>
</tr>
<tr>
<td>Emission Factor³</td>
<td>0.437</td>
<td>0.437</td>
<td>0.437</td>
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<tr>
<td>Carbon Fee $/MT</td>
<td>$15.00</td>
<td>$17.30</td>
<td>$19.65</td>
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<tr>
<td>Total Pollution Fee</td>
<td>$484,365</td>
<td>$558,635</td>
<td>$634,390</td>
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<tr>
<td>Total Impact⁴</td>
<td>$705,282</td>
<td>$831,005</td>
<td>$951,558</td>
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<table>
<thead>
<tr>
<th>Coal Plant Emissions Factor</th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
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</thead>
<tbody>
<tr>
<td>Incremental Cost - Market Purchases</td>
<td>$220,917</td>
<td>$272,370</td>
<td>$317,168</td>
</tr>
<tr>
<td>Purchases (aMW)¹</td>
<td>22.198</td>
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</tr>
<tr>
<td>Unspecified Source %²</td>
<td>38%</td>
<td>38%</td>
<td>38%</td>
</tr>
<tr>
<td>Emission Factor³</td>
<td>1.000</td>
<td>1.000</td>
<td>1.000</td>
</tr>
<tr>
<td>Carbon Fee $/MT</td>
<td>$15.00</td>
<td>$17.30</td>
<td>$19.65</td>
</tr>
<tr>
<td>Total Pollution Fee</td>
<td>$1,108,388</td>
<td>$1,278,341</td>
<td>$1,451,692</td>
</tr>
<tr>
<td>Total Impact⁴</td>
<td>$1,329,305</td>
<td>$1,550,711</td>
<td>$1,768,861</td>
</tr>
</tbody>
</table>

**Note:**
- ¹ Average Market Purchases from 2012-2017
- ² % of Market Purchases from unknown resources based on Point of Receipt in 2017
- ³ Metric tons/MWh embedded in market product; published in SB-6203
- ⁴ Incremental cost of market purchase; Cost of not specifying source of power

- **Key assumption for this scenario:**
  - District unable to specify the source of 38% of purchases
  - Default Emission Factor applicable
    - Emission factor deferred to rulemaking, so we show two assumptions
  - Pollution fee paid by generator and embedded in market price
Financial Impacts
Pollution Fees & Other Economic Impacts

1. BPA Market Purchases
2. Benton PUD Market Purchases
3. Frederickson Operations
4. Secondary Market Sales
Frederickson Combined Cycle Combustion Turbine

Overview

Jointly Owned by:

- AtlanticPower Corporation
- Puget Sound Energy
- Benton PUD
- Franklin PUD
- Grays Harbor PUD
- RP3 Reliable Public Power Provider

Jointly Dispatched by:

- Puget Sound Energy
- Benton PUD
- Franklin PUD
- Grays Harbor PUD
- RP3 Reliable Public Power Provider

Resource Generation Capacity Notes

<table>
<thead>
<tr>
<th>Resource</th>
<th>Generation Capacity</th>
<th>Notes</th>
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</thead>
<tbody>
<tr>
<td>Total</td>
<td>249 MW</td>
<td></td>
</tr>
<tr>
<td>Benton Contract Information</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BPUD 20% Ownership</td>
<td>50 MW</td>
<td>PPA expires Aug 2022</td>
</tr>
</tbody>
</table>

Not designated as a “resource” used to serve retail load in BPA contract. Expected resource output designated in contract.
3) Operation of Frederickson

**Simplified Example Today (Baseline)**

Frederickson Plant
Plant can produce electricity at $22.56 when gas is $2.40/MMBtu.
3) Operation of Frederickson

Simplified Example if Initiative Passes

**Conclusion:** Plant will dispatch less
3) Operation of Frederickson

**Impacts**

<table>
<thead>
<tr>
<th>Frederickson Fixed Cost Recovery - Baseline</th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
</tr>
</thead>
<tbody>
<tr>
<td>Net Secondary Revenue</td>
<td>$1,833,653</td>
<td>$2,359,627</td>
<td>$1,037,240</td>
</tr>
<tr>
<td>Less: Pollution Fees</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>Fixed Cost Recovery</td>
<td>$1,833,653</td>
<td>$2,359,627</td>
<td>$1,037,240</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Frederickson Fixed Cost Recovery - I-1631</th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
</tr>
</thead>
<tbody>
<tr>
<td>Net Secondary Revenue</td>
<td>$980,989</td>
<td>$1,134,462</td>
<td>$389,949</td>
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<tr>
<td>Less: Pollution Fees</td>
<td>-$657,752</td>
<td>-$757,799</td>
<td>-$289,728</td>
</tr>
<tr>
<td>Fixed Cost Recovery</td>
<td>$323,236</td>
<td>$376,663</td>
<td>$100,221</td>
</tr>
</tbody>
</table>

| Net Impact of I-1631                        | $1,510,416 | $1,982,964 | $937,019 |
Financial Impacts
Pollution Fees & Other Economic Impacts

1. BPA Market Purchases
2. Benton PUD Market Purchases
3. Frederickson Operations
4. Secondary Market Sales
4) Secondary Market Sales

Benton PUD & BPA

- Pollution Fee embedded in a higher market price
- Benton PUD is a “net seller” into the market
- Benton PUD’s secondary market sales increase in value

<table>
<thead>
<tr>
<th></th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
</tr>
</thead>
<tbody>
<tr>
<td>Secondary Market Sales - Baseline</td>
<td>$10,123,641</td>
<td>$10,412,146</td>
<td>$10,291,076</td>
</tr>
<tr>
<td>Secondary Market Sales - Initiative</td>
<td>$10,815,648</td>
<td>$11,233,785</td>
<td>$11,159,842</td>
</tr>
<tr>
<td>Incremental Revenue - Impact of I-1631</td>
<td>$692,006</td>
<td>$821,639</td>
<td>$868,765</td>
</tr>
</tbody>
</table>

- Similarly, BPA’s secondary market sales increase in value
  - **Annual** benefit to Benton PUD

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Estimated BPA Rate Reduction</td>
<td>0.80%</td>
</tr>
<tr>
<td>Benton PUD Block Purchases Cost (2020)</td>
<td>$39,708,067</td>
</tr>
<tr>
<td><strong>Estimated Benton PUD Annual Benefit</strong></td>
<td><strong>$318,558</strong></td>
</tr>
</tbody>
</table>
Impacts of Initiative 1631

Financial Impact Summary
Impact Areas

1) BPA Market Purchases
   Allocated to Benton PUD
   ~$321K in 2020

2) Benton PUD Market Purchases
   ~$220K to $1.3M in 2020

3) Operation of Frederickson
   Contract through 2022
   ~$1.5M in 2020

4) Secondary Market Sales
   Benton PUD
   ~$692K in 2020
   BPA
   ~$319K in 2020

Customers
   ~$1.0M to $2.1M impact on customers in 2020

---

1 – Assumed to impact Block portion of BPA Contract
# Economic Impact Summary

## Scenario 1 - No Unspecified Purchases

<table>
<thead>
<tr>
<th></th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pollution Fees Paid</td>
<td>$979,167</td>
<td>$1,128,498</td>
<td>$710,696</td>
</tr>
<tr>
<td>Frederickson Operations</td>
<td>$852,664</td>
<td>$1,225,165</td>
<td>$647,291</td>
</tr>
<tr>
<td>Net Secondary Market Purchases and Sales</td>
<td>($789,648)</td>
<td>($867,827)</td>
<td>($870,155)</td>
</tr>
<tr>
<td><strong>Net Economic Impact</strong></td>
<td><strong>$1,042,183</strong></td>
<td><strong>$1,485,835</strong></td>
<td><strong>$487,831</strong></td>
</tr>
</tbody>
</table>

## Scenario 2 - Coal Plant Emissions Factor

<table>
<thead>
<tr>
<th></th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pollution Fees Paid</td>
<td>$2,087,555</td>
<td>$2,406,838</td>
<td>$2,162,388</td>
</tr>
<tr>
<td>Frederickson Operations</td>
<td>$852,664</td>
<td>$1,225,165</td>
<td>$647,291</td>
</tr>
<tr>
<td>Net Secondary Market Purchases and Sales</td>
<td>($789,648)</td>
<td>($867,827)</td>
<td>($870,155)</td>
</tr>
<tr>
<td><strong>Net Economic Impact</strong></td>
<td><strong>$2,150,571</strong></td>
<td><strong>$2,764,176</strong></td>
<td><strong>$1,939,524</strong></td>
</tr>
</tbody>
</table>
Carbon & The Electric Sector
Carbon Intensity of the Northwest’s Electricity Sector is Relatively Low

Due to large fleet of existing zero-carbon resources, electric emissions intensity in the Pacific Northwest is already below other regions in the United States.

2013 Regional GHG Intensity of Electricity Supply (tons/MWh)

2013 emissions intensity: 0.26 tons/MWh (includes out-of-state coal resources)

WA/OR Generation Mix
- Biomass: 1%
- Wind: 8%
- Nuclear: 5%
- Coal: 15%
- Gas: 12%
- Hydro: 59%

Figure developed using data gathered from state 2013 GHG inventories for Washington, Oregon, and California; supplemented with data from EIA Annual Energy Outlook 2016.
Washington & Benton PUD Emissions

**Source:** U.S. Energy Information Administration, 2015 State Energy Data System and EIA calculations made for this analysis. [http://www.eia.gov/environment/emissions/state/excel/sectors.xlsx](http://www.eia.gov/environment/emissions/state/excel/sectors.xlsx)


- **92% Carbon Free**
Pacific Northwest Low Carbon Scenario Analysis

Achieving Least-Cost Carbon Emissions Reductions in the Electricity Sector

December 2017
STUDY MOTIVATION

- **Deep de-carbonization goals** have been proposed in both Washington and Oregon

- **80% reduction** below 1990 levels by 2050

Context

Planned Coal Retirements: \( \approx 14 \) MMT  
Centralia 1&2: 1,340 MW in 2020 & 2025  
Boardman: 585 MW in 2021  
Coal Strip 1&2: 614 MW in 2022

WA Electric Sector \( \approx 18 \) MMT  
Varies significantly due to hydro power
Pacific Northwest Low Carbon Scenario Analysis

**STUDY MOTIVATION**

- De-carbonization goals are ambitious
- Explores how NW Region’s electric sector could most **effectively and efficiently** contribute to the achievement of emissions reduction goals
KEY FINDINGS

- The **most cost-effective** opportunity for reducing electricity sector carbon in the Northwest is to **displace coal** generation with a combination of **energy efficiency**, **renewables** and **natural gas**.

- If **carbon reduction is the goal**, implement an economy-wide price on carbon rather than technology specific mandates.
  
  ✓ **Do not** implement renewable portfolio standards
  
  ✓ **Do not** prohibit fossil fuel based technology
    - Natural gas fired generation produces emissions at less than half the rate of coal-fired and is needed for power grid reliability
Natural gas generation will still be needed for reliability and is a good complement to hydro/wind/solar.

**Cold Winter Day under 80% Reduction**

Gas generation is dispatched to help meet electric loads during cold weather events.

**Cold Winter Day Without Gas**

Without thermal generation, there is not enough energy to serve load during all hours.

Most challenging conditions for the Northwest power system are multi-day cold snaps that occur during drought years.

Wind and solar production tends to be very low during these conditions.

Absent a technology breakthrough, gas generation will continue to be needed for reliability.

2050 Portfolio Summary
Carbon Cap Scenarios

Highlights
- Coal retired under 80% Case, replaced with renewables & gas
- 11 GW of new renewables by 2050
- 7 GW of new gas capacity added
- Gas capacity factor is 30% in 2050

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Inc Cost ($MM/yr.)</th>
<th>GHG Reductions (MMT)</th>
<th>Effective RPS %</th>
<th>Zero CO2 %</th>
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</thead>
<tbody>
<tr>
<td>Reference</td>
<td>—</td>
<td>—</td>
<td>20%</td>
<td>91%</td>
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<tr>
<td>40% Reduction</td>
<td>+$163</td>
<td>7.5</td>
<td>21%</td>
<td>92%</td>
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<tr>
<td>60% Reduction</td>
<td>+$434</td>
<td>14.2</td>
<td>25%</td>
<td>95%</td>
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<td>80% Reduction</td>
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<td>20.9</td>
<td>31%</td>
<td>102%</td>
</tr>
</tbody>
</table>

Resources Added (MW)

Energy Balance (amW)

Primary source of carbon reductions is displacement of coal generation from portfolio

To meet 80% reduction goal, 11 GW of wind & solar resources are added—6 GW more than the Reference Case

Context

* EE shown here is incremental to efficiency included in load forecast (based on NWPPCC 7th Plan)
Note: Reference Case reflects current industry trends and state policies, including Oregon’s 50% RPS goal for IOUs and Washington’s 15% RPS for large utilities.
KEY FINDINGS

- Returning revenues raised under a carbon pricing policy to the electricity sector is crucial to mitigate higher costs.
I-631 Carbon Reduction Requirements

I-1631 Allows Utilities to Retain Pollution Fees; with conditions:

To receive approval, the clean energy investment plan (CEIP) must:

“Describe a long-term strategy to eliminate any fee obligation imposed by this chapter on electricity…”

- Eliminating fee is interpreted as meaning no natural gas fired electricity can be in future plans.
  - Contradicts recommendations of the Pacific Northwest Low Carbon Scenario Analysis

- What is long-term and how will the CEIP harmonize with existing integrated resource planning?

- Utilities may forgo retaining I-1631 pollution fees...disconnect between CEIP requirements & least cost approach of IRP.

Integrated Resource Planning required by WA state law

10 year minimum planning horizon

Updated every 4 years

Assessment of commercially available, utility scale renewable and nonrenewable generating technologies...

...using "lowest reasonable cost" as a criterion

...must consider resource dispatchability, resource effect on system operation, the risks imposed on the utility and its ratepayers...
Impacts of Initiative 1631

Staff Observations
Staff Observations

I-1631

- Financial Impacts
  - Uncertainty due to subsequent rule making (assumptions made)
  - Pollution fees paid are not the only economic impacts
  - Estimated economic impact 2020 – 2022: $3.0M - $6.9M total for three years

- Credit for Pollution Fees Paid
  - Complex structure to access Utility Retained Fees
  - CEIP consultation with Board & Panels – Approval by Commerce
  - Erosion of key Public Power Principle: Local Control

- Carbon Reduction in the Electric Sector
  - Coal plants are chief emissions contributor - closures already planned
  - Displacing coal with natural gas and some amount of renewable resources is the most cost-effective, near-term carbon emissions reduction option