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May 5, 2020

### **MEMORANDUM**

**TO: Power Committee**

**FROM: Charlie Grist, Tina Jayaweera, Kevin Smit**

**SUBJECT: Update on Efficiency Supply Curves for Baseline and for Scenario Analysis for the Draft 2021 Power Plan**

### **BACKGROUND:**

Presenter: Charlie Grist

Summary: Staff will present the final results of its assessment of regional conservation potential for the Draft 2021 Power Plan. These results are for the baseline conditions scenario which will be used in most of the 2021 Plan scenario analysis. Staff will also describe its proposed approach to modifications of the baseline conservation potential for three scenarios where energy efficiency will be tested under differing circumstances. These include testing the robustness of energy efficiency, paths to decarbonization, and analyzing the Bonneville portfolio.

Workplan: Power Division A.1: Develop the 2021 Power Plan: Conservation for the 2021 Plan

More Info: Staff presented preliminary findings to the Power Committee in March

Energy efficiency supply curve inputs, analysis and results are available on the Council web site here [EE Supply](#). Presentations and discussions of the Conservation Resources Advisory Committee are here: [CRAC](#).

# Final Supply Curves for the Draft 2021 Plan

Power Committee

May 12, 2020



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FOR A SECURE & AFFORDABLE  
ENERGY FUTURE

1

## Changes Since March

- **QA/QC Review**
  - Over 1500 comments addressed
- **Many revised inputs**
  - Applicability, cost, savings, ramp rates
- **Several measures added**
- **Overlapping measures adjusted or deleted**



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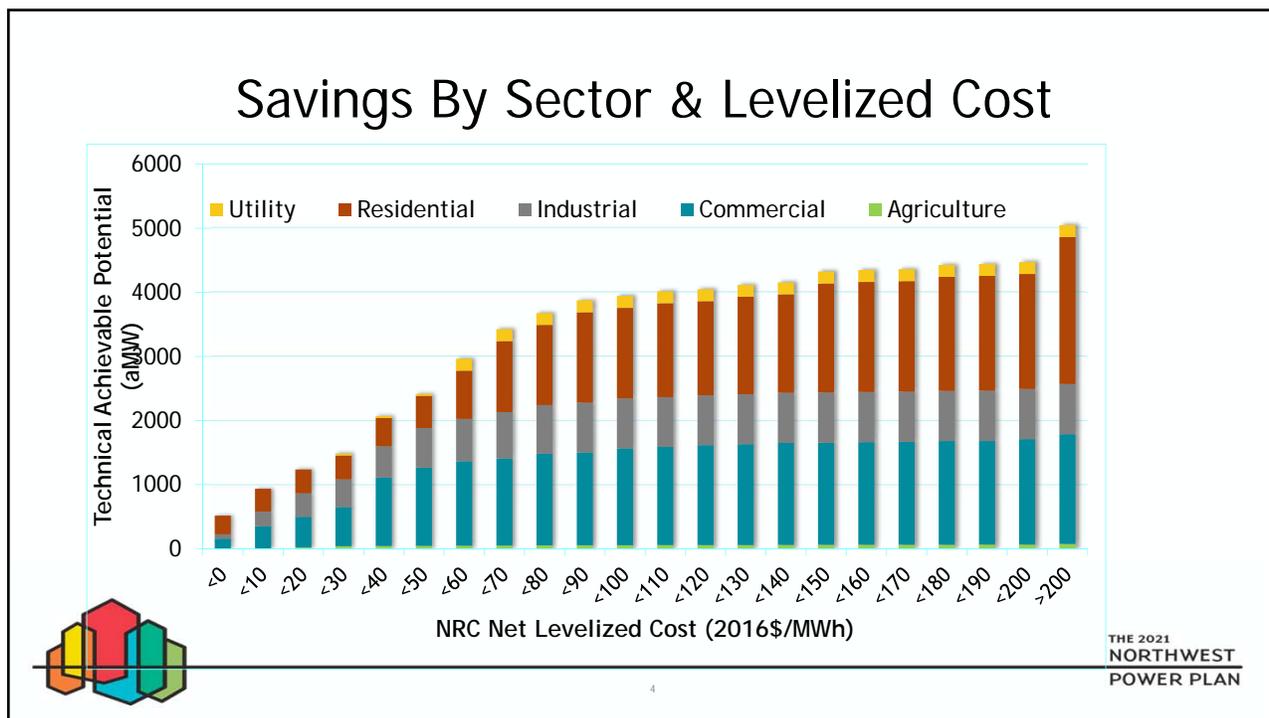
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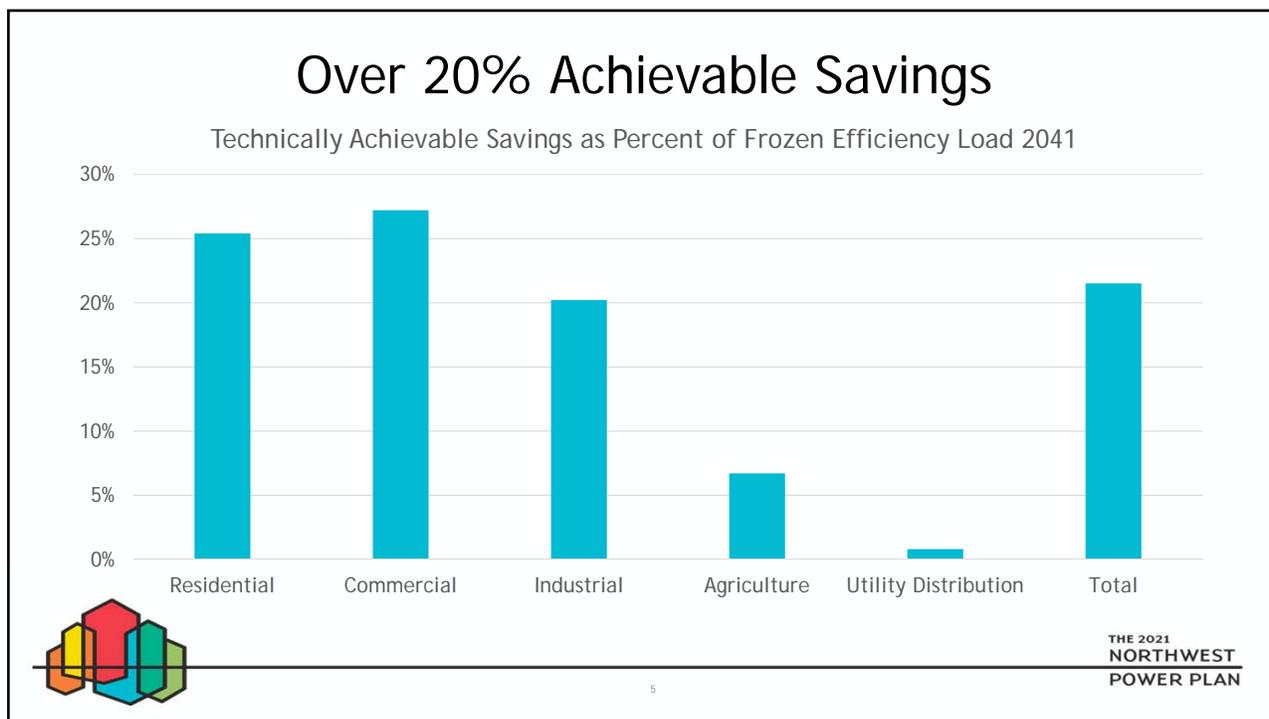
# High-Level Results

Files on Council website [link](#)

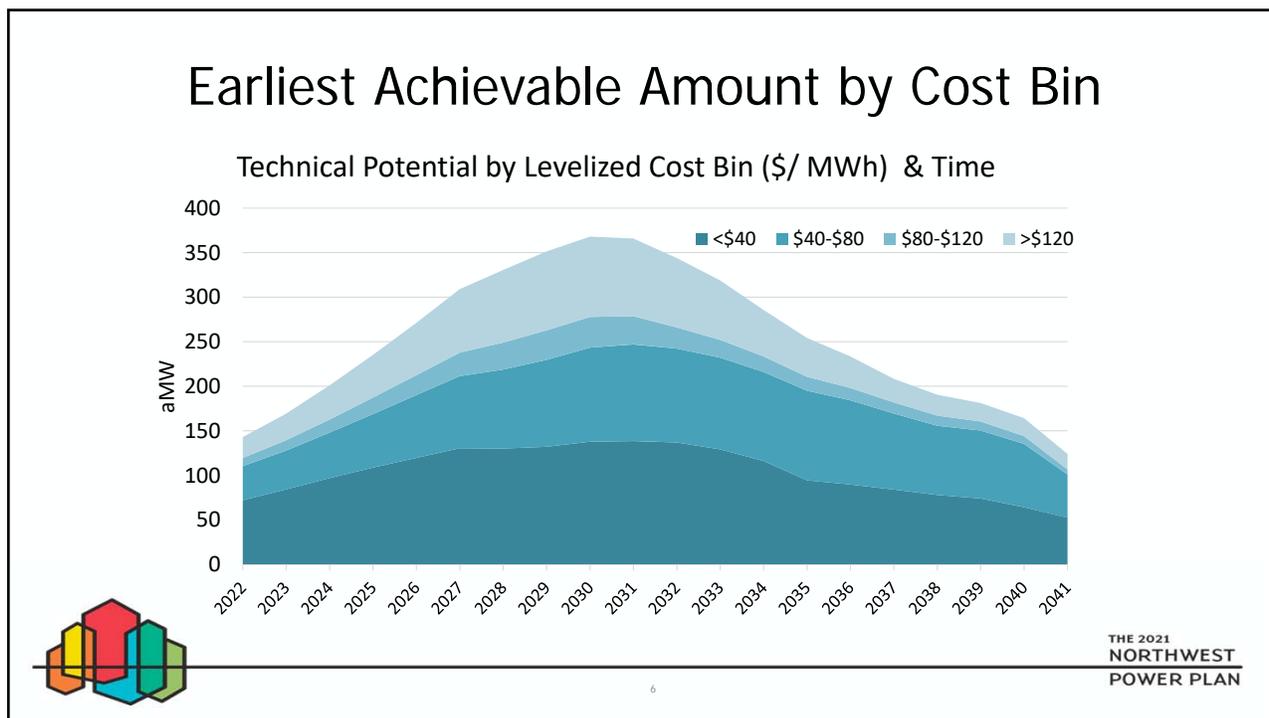
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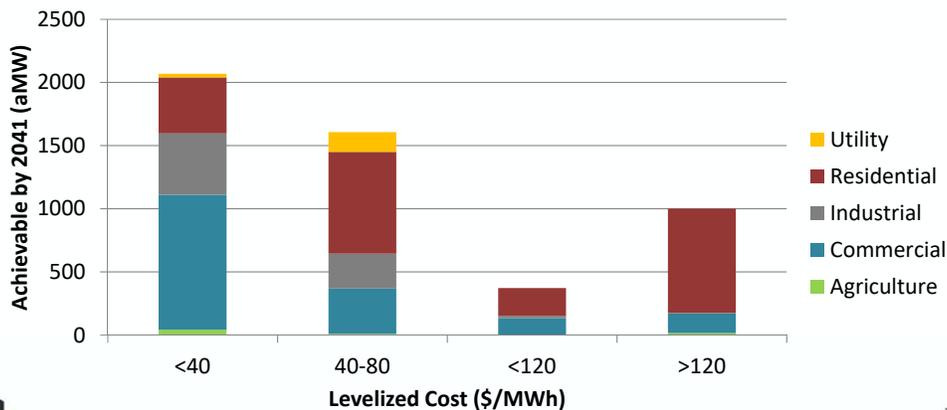
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## Potential Savings by Cost Bin & Sector

Max Achievable Conservation by Sector at Various Price Bins (Incremental)

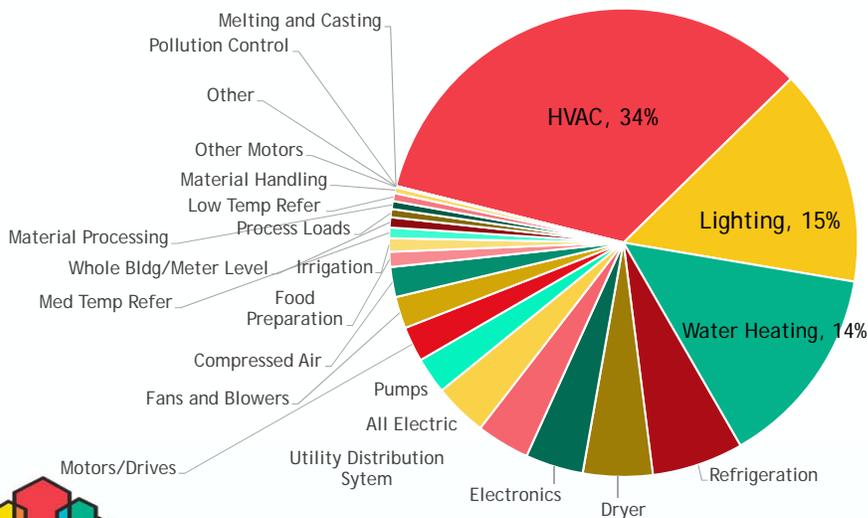


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7

7

## Savings Potential by End Use



Total  
5048 aMW



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8

8

## Selected New Measures for 2021 Plan

Residential	Ag	Commercial	Industrial
<ul style="list-style-type: none"> <li>• Central AC</li> <li>• Optimized control for DHP in Forced Air</li> <li>• Circulator pumps for DHW &amp; hydronic</li> </ul>	<ul style="list-style-type: none"> <li>• Ventilation systems for dairy</li> </ul>	<ul style="list-style-type: none"> <li>• Fans</li> <li>• Pumps</li> <li>• Triple-glazed window</li> <li>• Low-e window film</li> <li>• HPWH</li> <li>• Unitary AC</li> <li>• VHE-DOAS</li> </ul>	<ul style="list-style-type: none"> <li>• HVAC</li> <li>• Pumps</li> <li>• Fans &amp; Blowers</li> <li>• Compressors</li> <li>• Advanced Motors</li> </ul>



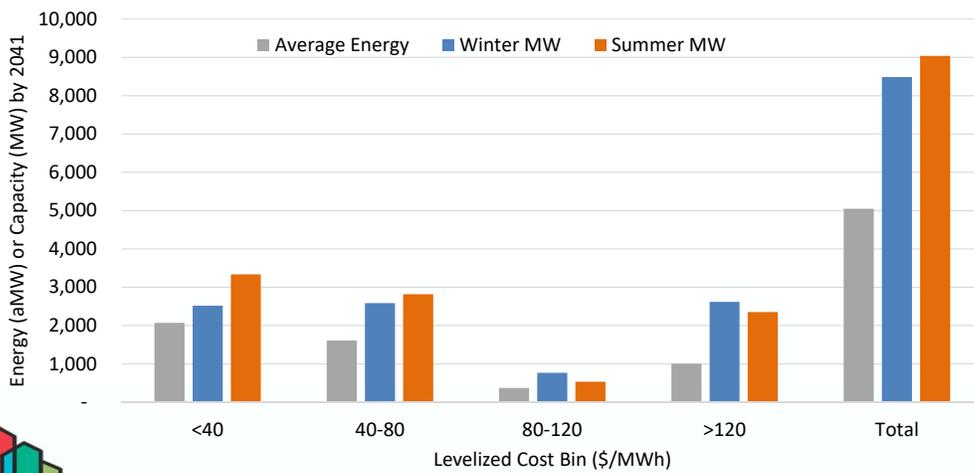
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9

9

## Energy & Peak Potential for EE

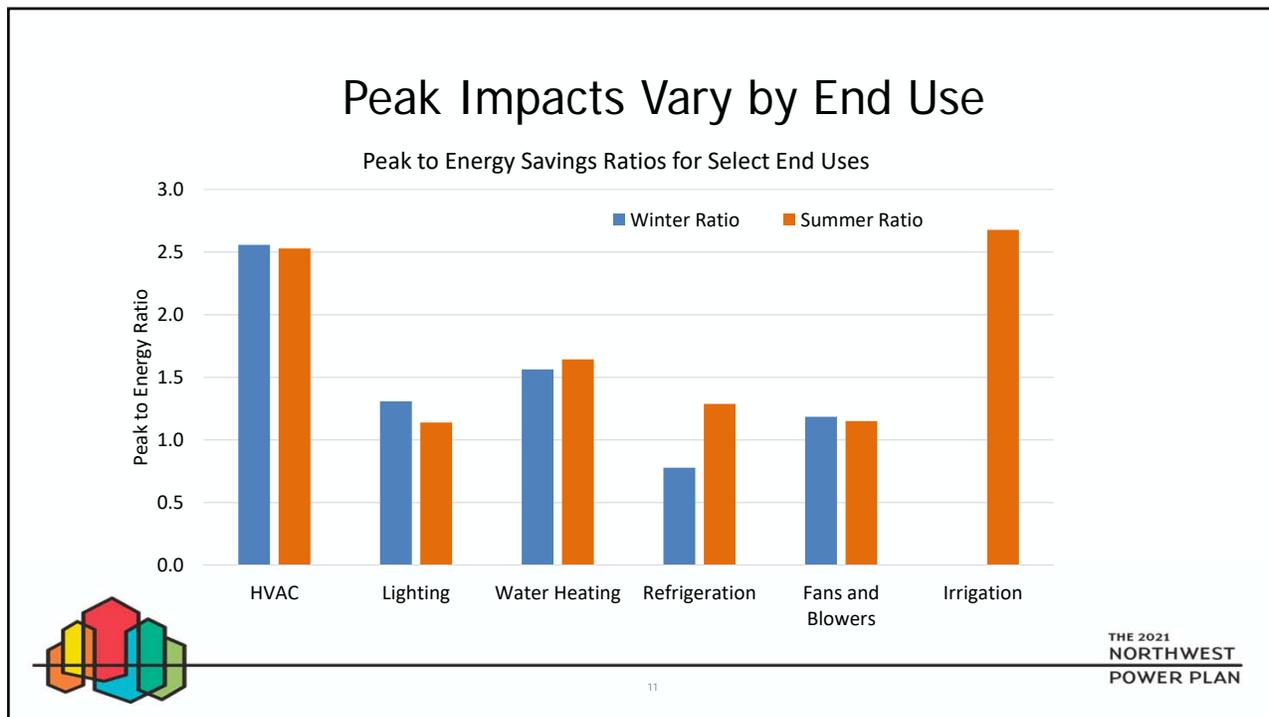
EE Capacity by Price Bin



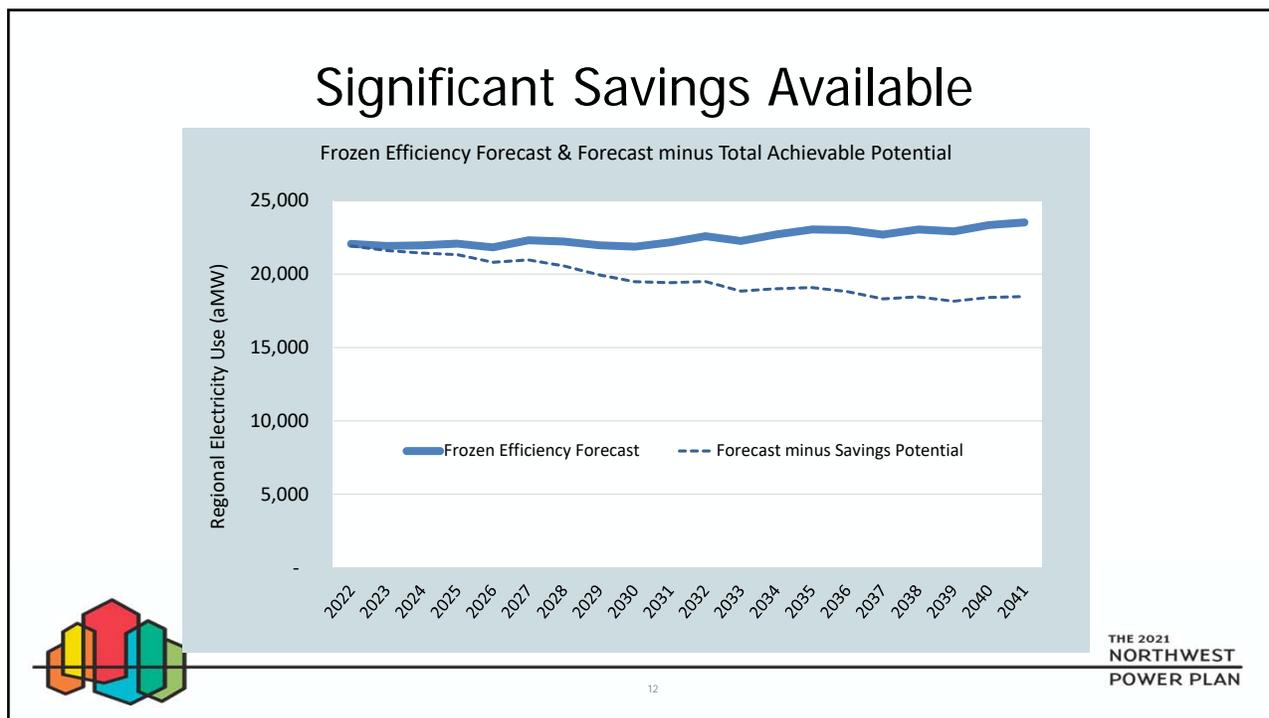
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10

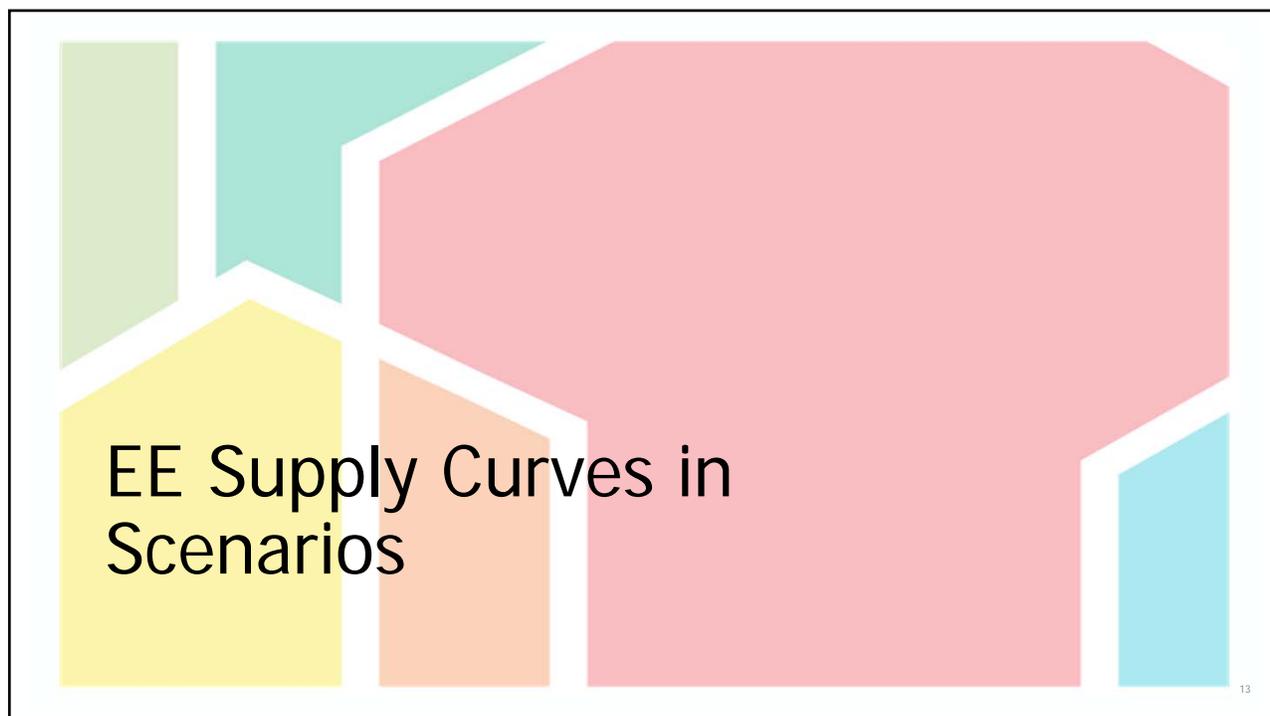
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13

## Plan Scenarios

- **Robustness of Energy Efficiency**
- Early Coal Retirement
- **Paths to Decarbonization**
- Organized/Limited Markets for Energy and Capacity
- **Analyze the Bonneville Portfolio**
- Greenhouse Gas Cost Tipping Point
- Reliance on Extra-Regional Markets for RA



14

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14

## Scenario: Robustness of Energy Efficiency EE Adjustments

- Provide alternate supply curves with:
  - Differing ramp rates to reflect acceleration/deceleration of amount of EE
  - Changing maximum amount of achievable EE
- Potentially add in emerging EE measures that did not pass the “similarly reliable and available” criteria for the baseline conditions (i.e. emerging technologies)
  - Alternatively may increase maximum achievable to greater than 100% to emulate emerging tech
- Change kW impact or load profile to see value of capacity contribution from EE
- Accounting for interaction between the availability of EE and DR



## Scenario: Paths to Decarbonization EE Adjustments

- Increased opportunity of EE from more electric end use equipment due to fuel switching assumed in load forecast
- Increase availability à la EE Robustness
- Increased availability from emerging technologies
  - Add new ET's where possible
  - Expand the Max Tech of existing measures (e.g., similar to the federal standards process)



## Scenario: Analyze the BPA Scenario EE Supply Curves



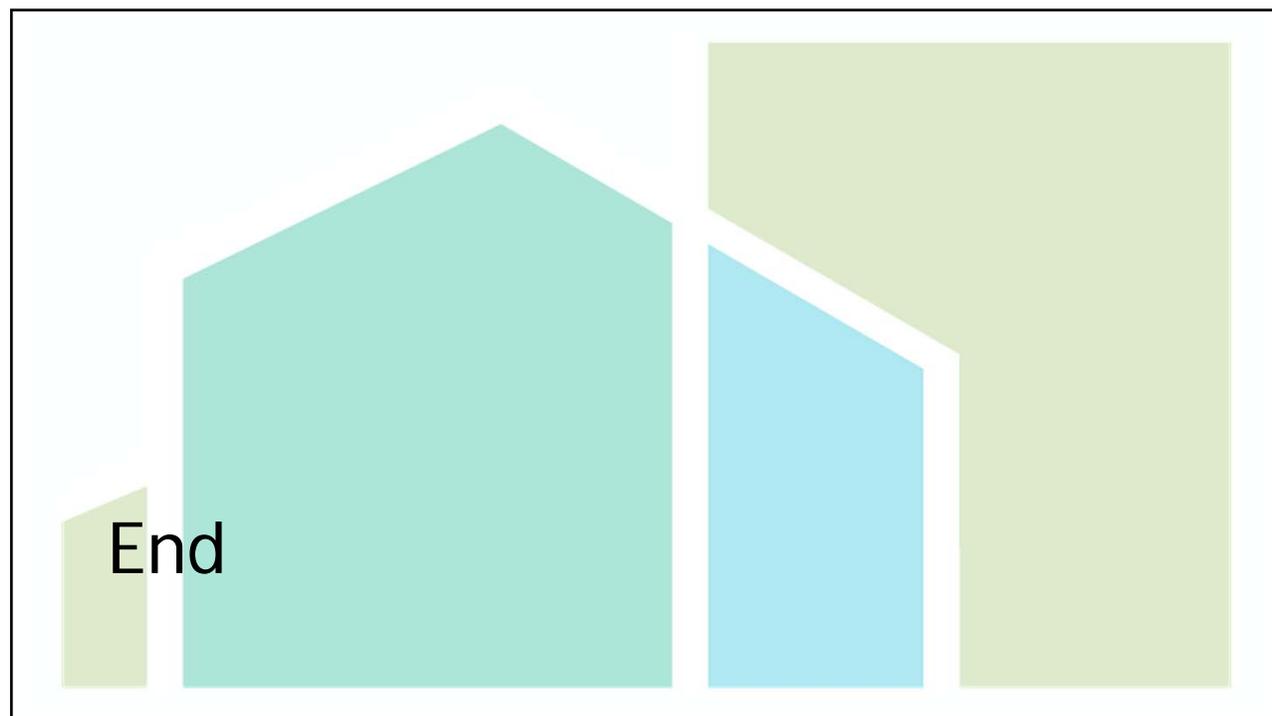
- Number of “units” (houses, sq. ft, etc) that are served by Bonneville preference customers
- Some “saturation” updates (e.g., share of electric space heating)
- Post-2028: As obligations change, i.e. either fewer or additional customers, scale EE availability to match the assumed customer utilities with load being served by Bonneville



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17

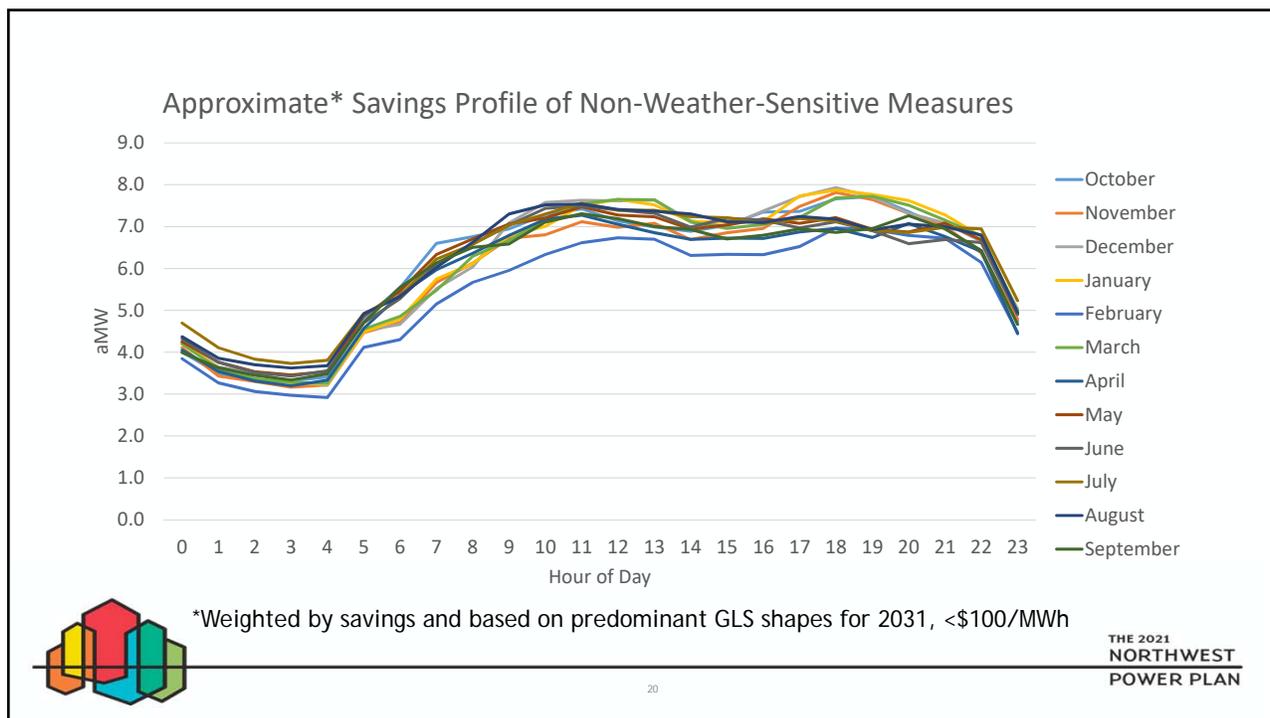
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18



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