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April 2, 2024

MEMORANDUM

TO: Council Members

FROM: Kevin Smit and Christian Douglass

SUBJECT: Updates on Conservation Program Elements

BACKGROUND:

Presenters: Kevin Smit and Christian Douglass

Summary: Staff will provide updates on the elements of the 2021 Power Plan's conservation program to inform the 2021 Plan Mid-Term Assessment. The conservation program includes twenty specific conservation recommendations in total, including conservation targets, specific actions for utilities and the Regional Technical Forum (RTF), Model Conservation Standards, and more. Staff will summarize the progress to date of each conservation recommendation, as well as provide an overall status indicator of each. In addition to the summary updates, staff will discuss how conditions for energy efficiency have changed since adoption of the 2021 Plan, how specific parts of the region may value energy efficiency differently (consistent with the 2021 Power Plan recommendations), and how staff is leveraging recent regional data to inform the next plan.

Relevance: The Council is currently monitoring regional progress and changes relative to the 2021 Power Plan to keep the region updated on important recommendations in its Mid-Term Assessment. Staff anticipates working with the Power Committee to update the Mid-Term Assessment summary at the May meeting, based on new load forecast information and other regional insights. Staff is providing this update of another important

element of the 2021 Power Plan, the Conservation Program, to provide the members additional information that they may want to consider in the next Mid-Term Assessment update.

Workplan: A.1.1. Tracking and reporting on energy efficiency accomplishments relative to the 2021 Power Plan Conservation Program and A.1.4. Tracking and reporting on progress across other elements of the 2021 Power Plan, including model conservation standards, research, etc.

Background: According to the Pacific Northwest Power Act, the Council's power plan shall include "an energy conservation program", including specific elements, such as model conservation standards and recommendations for research and development. Per the Act, conservation is defined as any reduction in electric power consumption as a result in increases in the efficiency of energy use, production, or distribution.

The 2021 Power Plan's conservation program, described in Section 5 of the Plan document, included twenty individual recommendations in total. These recommendations included items such as:

- conservation targets, for the region and Bonneville;
- Bonneville-specific recommendations on EE funding levels, emerging technologies, research, and building code support;
- programmatic efforts to weatherize uninsulated homes and build a commercial end-use intensity database to target high intensity buildings;
- the importance of NEEA and regional research;
- RTF-specific recommendations on measure costs, load profiles, and the interaction between energy efficiency and demand response; and
- Model Conservation Standards on common appliance standards in the Northwest, no "backsliding" on federal or state efficiency standards, and the importance of efficiency for jurisdictions considering electrification.

Staff is providing a comprehensive update on all 2021 Plan conservation program elements to help inform future discussions on potential updates to the Plan's Mid-Term Assessment language.

More Info: For further details of the 2021 Plan conservation program elements, please see Section 5 of the following supporting documentation: https://www.nwcouncil.org/2021powerplan_summary-recommendations/.

Is Energy Efficiency Really Worth Doing Anymore?

(aka Updates on Conservation Program Elements from the 2021 Power Plan)

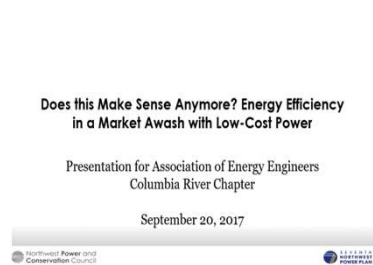
April 2024 Power Committee Meeting
Kevin Smit, Christian Douglass



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About the title...

- A former staff member, Charlie Grist, gave a presentation in 2017 with this title. At that time, there was low-cost natural gas which resulted in relatively low avoided costs for EE
- The 2021 Plan had some similar (and yet very different) results – the market now includes low cost solar and wind (with forecasted declining costs) that “compete” with EE
- Considering the 2021 Plan results, I have recently been asked to give this presentation again
- More recent happenings in the market may suggest that more, not less EE is needed
- But in answer to the question: Yes, conservation is worth doing, and maybe more so now



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Objectives

- Reminders of what the NW Power Act requires for EE in the power plan
- Provide a check-in on the progress of the Conservation Program from the 2021 Plan
 - How is the region doing with the entire EE Program (i.e., beyond just the minimum target)?
 - Are the conditions the same or different for EE now vs. 2021 Plan?
 - What value does EE carry in different parts of the region?
- Brief look at how we are using the End-Use Load Research data



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Definition of Conservation in the Power Act

“Conservation” means any reduction in electric power consumption as a **result of increases in the efficiency of energy use, production, or distribution.**

1. Does the opportunity reduce electric power consumption?
- and*
2. Is the reduction in electric power consumption the result of an increase in efficiency of energy use, production, or distribution?

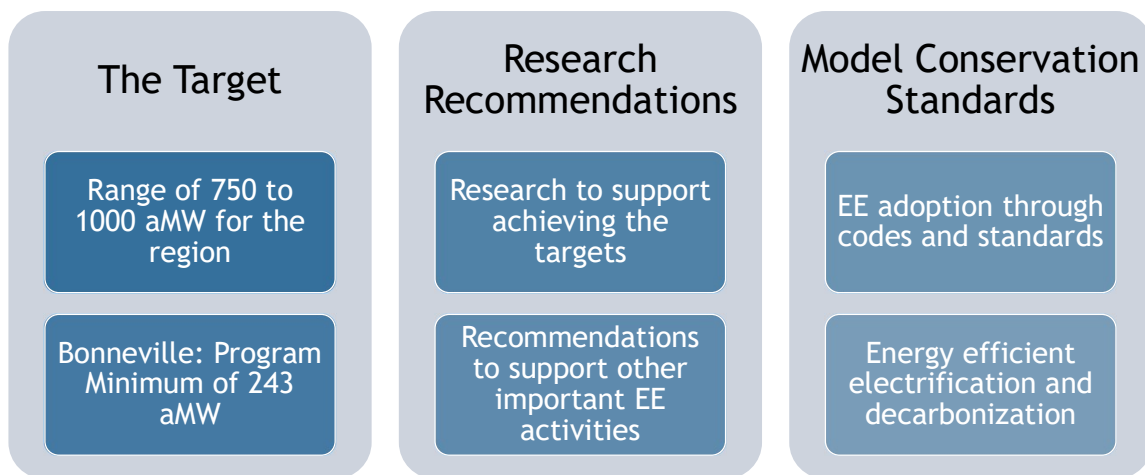
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Conservation Notes from the NW Power Act

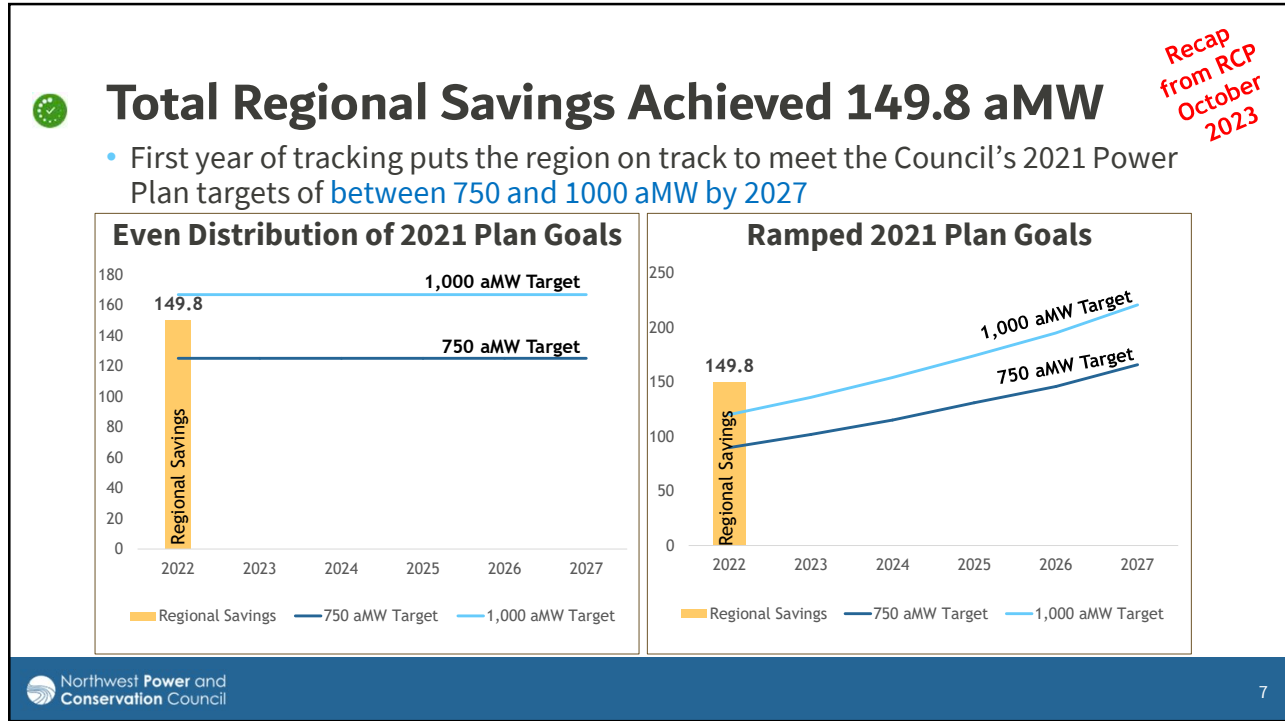
- “Priority shall be given: first, to conservation...”
- Priority given to resources that are cost effective
 - Reliable and available when needed
 - Incremental **system cost** no greater than similarly reliable and available alternate **resource**
- System Cost
 - All direct costs of a measure or resource over its effective life (e.g., T&D, waste disposal)
 - Quantifiable environmental costs and benefits that are directly attributable
- Resource
 - Electricity generating facilities
 - Load reduction from conservation measures
 - Load reduction from direct application renewables
- Conservation program
 - “The plan shall set forth a general scheme for implementing conservation measures”
 - Must include a Model Conservation Standard
 - Recommendations for research and development
- Methodology for determining quantifiable environmental costs and benefits

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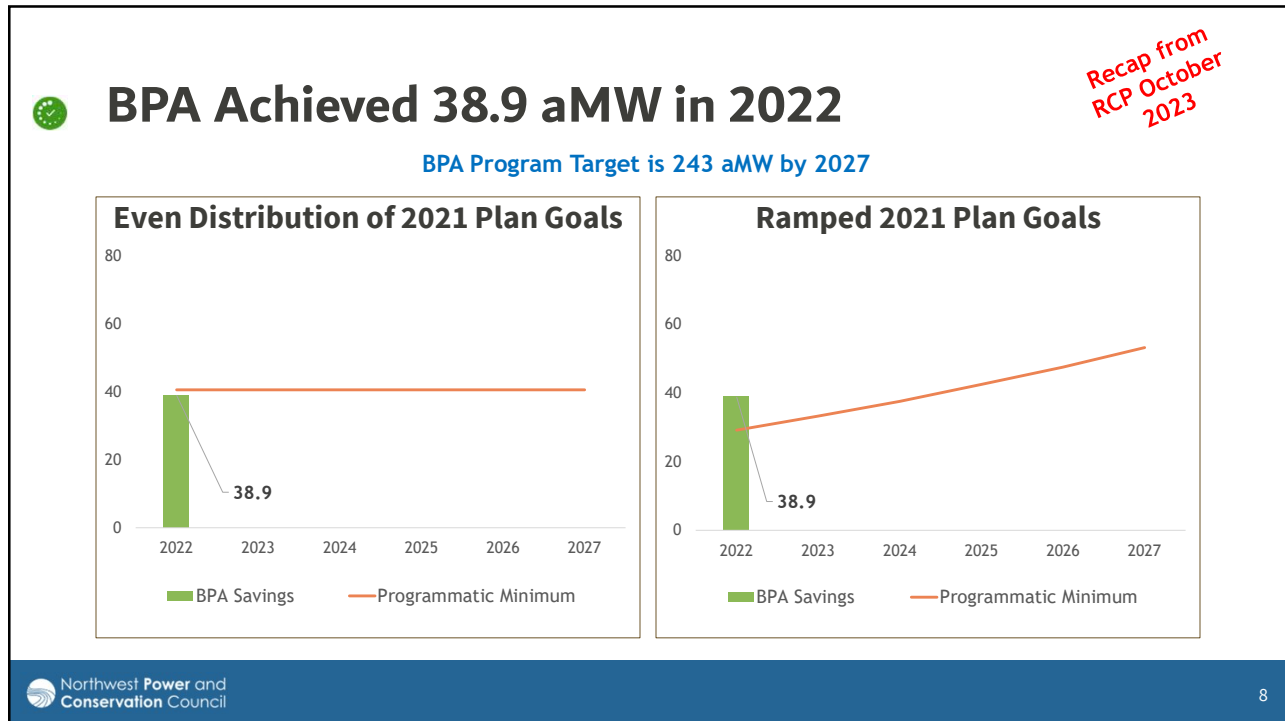
Conservation Program in the 2021 Plan



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Conservation Recommendations

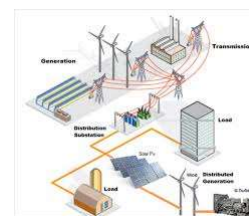
https://www.nwcouncil.org/2021powerplan_summary-recommendations/

Item	Section	Title	Item	Section	Title
5.1	Conservation	Regional Conservation Target	5.7	Conservation	Addressing Equity with EE
5.2	Conservation	Bonneville Target	5.8	Conservation	RTF: Flexibility and Resiliency
5.2	Conservation	Bonneville Maintain Budget	5.8	Conservation	RTF: Rigor to Measure Costs
5.2	Conservation	Bonneville Fund ET	5.8	Conservation	RTF: Load Profiles
5.2	Conservation	Bonneville Fund Research	5.8	Conservation	RTF: EE/DR Interface
5.2	Conservation	Bonneville Support Building Codes	5.8	Conservation	RTF: Equity in Evaluation Guidelines
5.3	Conservation	Actions in Support of Target	5.9	Conservation	MCS: Common Appliance Standards
5.4	Conservation	Attributes of EE	5.9	Conservation	MCS: No Backsliding
5.5	Conservation	Importance of NEEA	5.9	Conservation	MCS: Efficient Electrification
5.6	Conservation	Recognizing the Value of Research	5.10	Conservation	Surcharge Recommendation

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Recommendations to BPA

- Maintain ratepayer-funded efficiency programs (utility direct programs and market transformation initiatives) at a funding level sufficient to achieve the 2027 goals
- Continue to fund research and development on emerging technologies in an amount commensurate with 2020 levels or greater
- Continue to fund regional market research, stock assessments, evaluation, and related analysis in an amount commensurate with 2020 levels or greater
- Support initiatives to enhance building codes and appliance standards, at both the state and federal governments



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Programs, EE Attributes, and NEEA

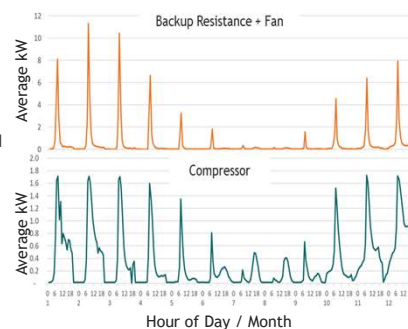
- • Actions in Support of Target (Utilities)
 - This is a [standard list of recommendations](#) that have been in the last several power plans
 - Essentially this is a list of EE program best practices.
- • Important Attributes of EE (RTF)
 - Adequacy, resilience, and flexibility
 - RTF Working on these – more later
- • Importance of NEEA (Utilities)
 - The region will need to continue to support NEEA at levels at least commensurate with 2020 levels



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Recognize the Value of Research

- • Evaluation (BPA, Utilities)
 - Continue to conduct robust evaluations of EE programs
 - Conduct evaluations based on RTF guidelines
- • Market research (BPA, NEEA)
 - Provides insights to characterizing efficient products available in the market
 - Providing important information needed to refine and focus efficiency programs
 - Develop baselines necessary for estimating energy savings opportunities going forward
- • Regional stock assessments (NEEA)
 - Residential Building Stock Assessment (RBSA) – every 5-6 years. Next release: 2024
 - Commercial Building Stock Assessment (CBSA) – every 5-6 years. Next release: 2026
 - Industrial Facility Stock Assessment (IFSA) – only one conducted in 2014
 - Motor-driven systems – NEEA working on this
 - Water supply and wastewater treatment – in-house
- • Emerging technology research (NEEA, BPA, Utilities)
 - Collaborative research and demonstration by the regions’ utilities
 - NEEA’s RETAC coordinates this effort
- • End-use load research (NEEA, Utilities)



More on this one later

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Equal Distribution of Benefits

1. Establish diversity, equity, and inclusion metrics for programs (NEEA, Utilities)
 - The region convene a series of workshops to investigate existing equity data
 - Share publicly available data sources
 - Perform a gap analysis to identify areas where further research and data are needed
2. Targeted weatherization (Bonneville, Utilities)
 - Continue to invest in weatherization programs, targeting those homes that are leaky (in need of duct or air sealing) and/or have zero or limited insulation
 - The Council recommends the region and Bonneville have a focused effort on finding those homes that have been missed by prior activities
3. Develop commercial end-use intensity database and target buildings with high intensity (NEEA)
 - EE measure gaps are difficult to identify in the commercial sector due to the many building types and customer segments
 - NEEA, with support from the region and Bonneville should develop a reliable commercial building energy use intensity data set
 - Capture information about energy use, building type, location, size, and other important customer segment characteristics
 - Target high EUI buildings
4. Pursue co-funding opportunities (Utilities, BPA)
 - Programs should explore co-funding opportunities, partnering with other organizations to achieve the mutual benefit





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Regional Technical Forum

- Flexibility and Resiliency
 - Investigate methods for quantifying the value of flexibility and resiliency
- Increase Rigor of Measure Cost Analysis
 - Allocate more resources to incremental cost analysis
- Load Profiles
 - Continue to improve measure load and savings shape library
- EE/DR Interface
 - Take a more holistic approach to its assessment of measures that provide both EE and DR
 - Understand impacts of energy and capacity savings when considering EE and DR measures in tandem
- Equity in Evaluation Guidelines
 - Explore guidelines for incorporating equity in evaluation
 - Leverage work from regional utilities and other entities

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Model Conservation Standards

- 
 • Common Appliance Standards (States, Regulators)
 - Recommended that NW states consider adopting common standards and work to synchronize updates
- 
 • No Backsliding on Codes or Standards (States, Regulators)
 - Once a code or standard has been adopted, no state or federal agency should change the standard such that a subset of buildings or appliances are subject to less stringent standards
- 
 • Conversion to Electric Space Conditioning and Water Heating (Utilities)
 - For jurisdictions pursuing economy-wide decarbonization goals
 - Significant EE investments
 - Take actions through codes, service standards, user fees or alternative programs, or a combination thereof, to achieve electric power savings from buildings
 - Efficient electrification
- 
 • Surcharge Recommendation (Council, Bonneville)
 - The Power Act authorizes the Council to recommend a surcharge and the Bonneville Administrator may thereafter impose such a surcharge on customers that have not implemented conservation measures that achieve energy savings comparable to those which would be obtained under the Model Conservation Standards in the plan. The Council does not recommend a surcharge to the Administrator under Section 4(f) (2) of the Act at this time.

More on this one later

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Summary Status of Plan Recommendations

Title	Title
 Regional Conservation Target	 Addressing Equity with EE
 Bonneville Target	 RTF: Flexibility and Resiliency
 Bonneville Maintain Budget	 RTF: Rigor to Measure Costs
 Bonneville Fund ET	 RTF: Load Profiles
 Bonneville Fund Research	 RTF: EE/DR Interface
 Bonneville Support Building Codes	 RTF: Equity in Evaluation Guidelines
 Actions in Support of Target	 MCS: Common Appliance Standards
 Attributes of EE	 MCS: No Backsliding
 Importance of NEEA	 MSC: Efficient Electrification
 Recognizing the Value of Research	 Surcharge Recommendation

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What has Changed? Recent Context

- Conditions/policies have changed since the 2021 Power Plan:
 - OR HBs 2021 and 2531
 - WA State Energy Strategy, Climate Commitment Act (CCA), and Hydrofluorocarbon Transition Rule
 - Federal IRA HOMES program
- The 2027 Adequacy Assessment showed that if loads grow significantly, we might need to do more than the base strategy for EE and DR
- The mid-term assessment has identified some risk in the areas of potential load growth and reserves (e.g., data center load growth)

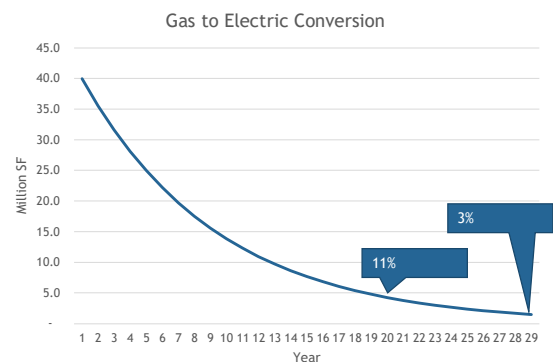
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The Value of EE Under Decarbonization

Presented to Conservation Resources Advisory Committee In July 2023

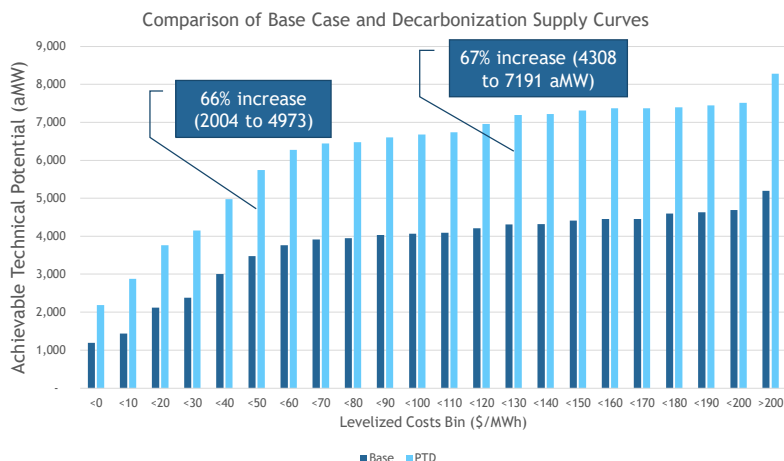
Reference:
Model
Conservation
Standard

- The plan and the MCS recognized that jurisdictions that have aggressive decarbonization goals may see a higher value for EE than we did at the regional level and at the time of the 2021 Plan
- Council staff conducted some further analysis using our partial decarbonization scenario to explore the value of EE in those jurisdictions.



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Supply Curve Comparison – Base and Decarbonization Scenario

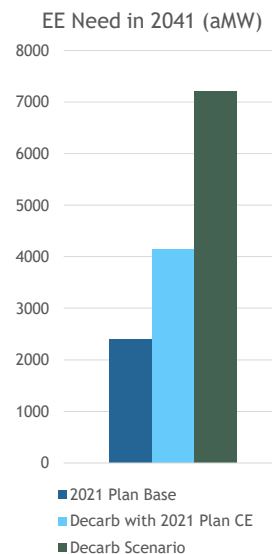


- The Decarbonization Scenario shows a significant increase in EE potential over the base case
 - Increased electrification
 - Emerging tech
- When this scenario was run in the portfolio model, more EE was acquired than in other scenarios
 - In part due to additional EE available (bigger supply curve)
 - Much more need for EE
- In this case, the portfolio model acquired ~1200 aMW of EE by 2027 and 7200 aMW by 2041

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How does this inform MCS?

- Cost-effectiveness in plan is based on target of 750 aMW by 2027/2400 aMW by 2041
- If we apply the same cost-effectiveness criteria to the decarbonization supply curve, we get: ~1225 aMW by 2027, 4140 aMW by 2041.
 - More units = more cost-effective efficiency
 - This does not necessarily reflect a greater need that would need to be met under a deep decarb policy
- The 2041 amount of EE need in the decarbonization case (7200 aMW) is significantly higher than the base target (2400 aMW)



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What does this mean?

- To meet the 2041 acquisition, ~\$90/MWh was added to cost-effectiveness criteria (across the board) to reach ~7200 aMW
 - This basically means that we're giving a risk adder to all EE such that we are going up the supply curve an additional \$90/MWh.
 - Current cut off for cost-effectiveness is ~\$30/MWh levelized cost
 - For jurisdictions with decarbonization policies using the Council cost-effectiveness formulation, recommend adding \$90/MWh to the benefits
- If a jurisdiction is running a full IRP and incorporating the policies, then that should drive the cost-effectiveness formulation
- Some examples:
 - Energy Trust targets are more aggressive than their Share of the Council target
 - PSE's IRP – higher EE avoided costs
 - Seattle City Light IRP – higher EE avoided costs

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The Value of the Northwest Energy Efficiency Alliance (NEEA) End Use Load Research (EULR) data

- NEEA's EULR work highlights a few of the 2021 Plan's conservation recommendations, including:
 - Recommendation 5.5, "Importance of NEEA"
 - Recommendation 5.6, "Recognizing the Value of Research"
 - Recommendation 5.9, "MCS: Efficient Electrification"
- Some background on NEEA's EULR:
 - ~\$12.5 million effort, metering circuit-level power usage and temperatures in ~400 NW homes and ~70 NW businesses
 - Data collection spans five years with multi-year data for most sites
 - Collecting minute-level power data for funders; 15-minute-level data available to the public
 - Residential effort: Home Energy Metering Study (HEMS)
 - Commercial effort: Commercial Energy Metering Study (CEMS)
 - Largest-scale metering study since ELCAP* in the 80's

END USE LOAD RESEARCH



Home Energy Metering Study Public Data User Guide

Northwest Energy Efficiency Alliance
700 NE Multnomah Street, Suite 1300
Portland, Oregon 97232

Prepared by:
Evergreen Economics
1500 SW 1st Avenue, Suite 1000
Portland, OR 97201

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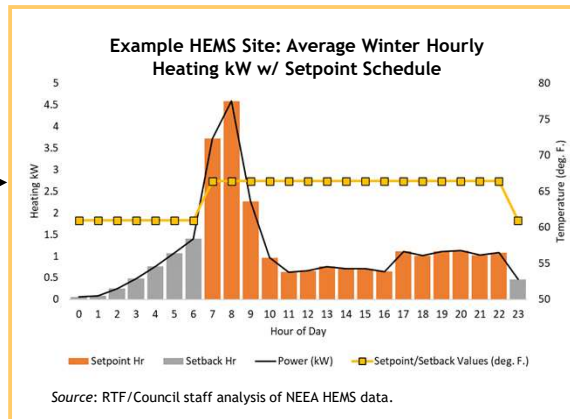
NEEA
Home Energy Metering Study
Public Data User Guide

*End-Use Load and Consumer Assessment Program

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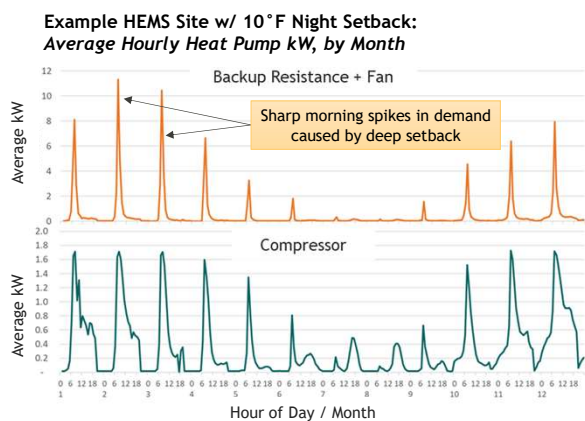
What can we learn from the EULR data for our power planning needs?

- Energy use intensities (EUIs) by HVAC type
- Hourly load and savings shapes (time value of EE)
- Heat pump backup resistance use and behavior
- Thermostat schedules and their effect on demand
- Equipment demand under extreme weather
 - Heat dome is in the data
 - Also, multiple cold snaps
- Heat pump water heater backup resistance use
- EV charging patterns
- The list goes on...



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Some Interesting Findings Thus Far: *Deep Setbacks & Opportunities for Better Heat Pump (HP) Controls*



Source: RTF/Council staff analysis of NEEA HEMS data.

- This work is the subject of a recent Council staff and RTF paper accepted for the 2024 ACEEE Summer Study conference on EE in buildings
- The paper highlights strategies for significantly reducing backup heating demand, such as:
 - proper HP sizing
 - proper envelope insulation and duct assessment
 - better cold-climate compressor capacity
 - reducing unneeded backup heat capacity
 - proper backup heat lockout settings
 - more proactive thermostat controls
 - better consumer education

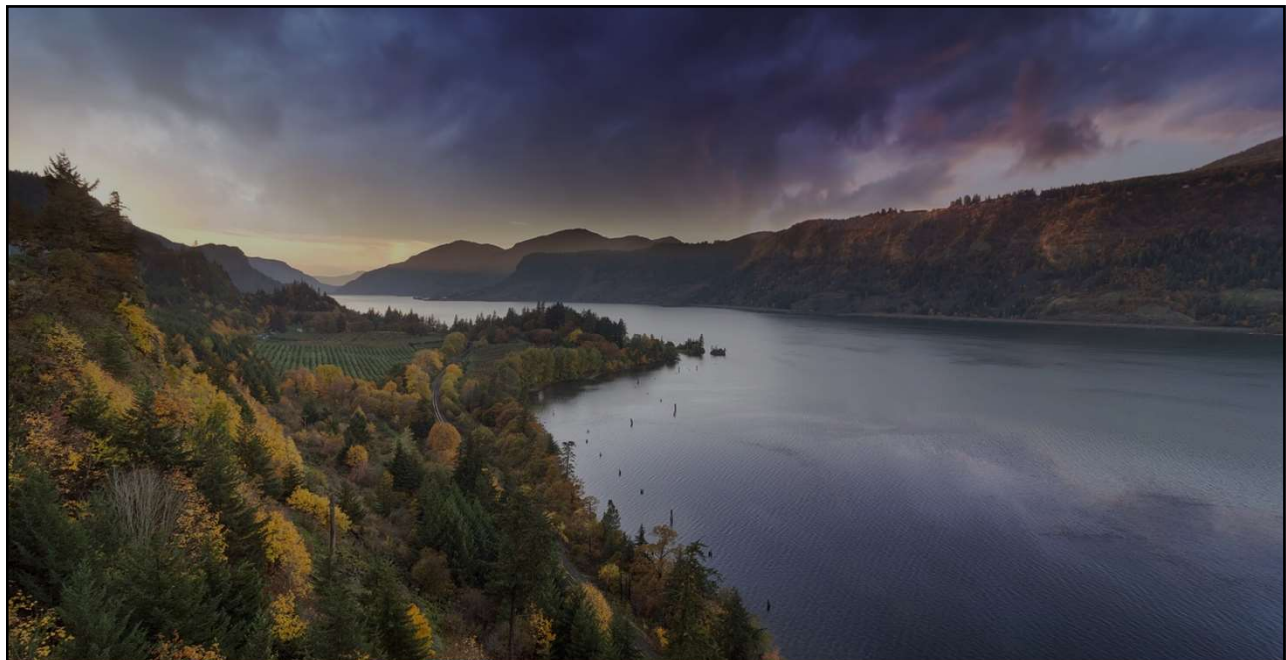
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Summary

- The 2021 Power Plan Conservation Program has more than the target:
 - A regional target for cost-effective EE
 - Research and program recommendations
 - Model Conservation Standards
 - Specific focus for jurisdictions with decarbonization goals: they will need to do more than the minimum
 - The MCS focuses on electrification of end uses and basically says that those measures (while maybe not cost-effective under the plan) are likely cost-effective.
- The 2027 Adequacy Assessment showed that if loads grow significantly, we might need to do more than the base strategy
- The mid-term assessment has identified some risk in the areas of potential load growth and reserves
- Conditions/policies have changed since the 2021 Power Plan

Bottom line:
 The region is doing relatively well on the 2021 Conservation Program. Changes since the plan and the MCS indicate the region should focus on the upper end of the target range (1000 aMW by 2027)

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[Back](#)

Actions in Support of Target

1. Conservation acquisition programs should be designed to ensure that regionally cost-effective levels of efficiency are economically feasible for the consumer.
2. Conservation acquisition programs should be targeted at conservation opportunities that are not anticipated to be developed by consumers.
3. Conservation acquisition programs should be designed so that their benefits are distributed equitably.
4. Conservation acquisition programs should be designed to secure all measures in the most cost-efficient manner possible.
5. Conservation acquisition programs should be designed to take advantage of naturally occurring “windows of opportunity” during which conservation potential can be secured by matching the conservation acquisitions to the schedule of the host facilities or to take advantage of market trends. In industrial plants, for example, retrofit activities can match the plant’s scheduled downtime or equipment replacement; in the commercial sector, measures can be installed at the time of renovation or remodel.
6. Conservation acquisition programs should be designed to capture all regionally cost-effective conservation savings in a manner that does not create lost-opportunity resources. A lost-opportunity resource is a conservation measure that, due to physical or institutional characteristics, will lose its cost-effectiveness unless actions are taken now to develop it or hold it for future use.
7. Conservation acquisition programs should be designed to maintain or enhance environmental quality.
8. Conservation acquisition programs should be designed to enhance the region’s ability to refine and improve programs as they evolve

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Model Conservation Standards (MCS)

The Northwest Power Act directs the Council to include in the power plan an energy conservation program that includes “model conservation standards” (MCS). The MCS are a prescriptive means of acquiring energy efficiency – that is, specific standards such as building insulation levels.

Section 4(f) of the Power Act tells the Council that the model conservation standards (MCS) to be included in the plan shall be applicable to:

- (i) new and existing structures
- (ii) utility, customer, and governmental conservation programs
- (iii) other consumer actions for achieving conservation

The standards must “reflect geographic and climatic differences within the region and other appropriate considerations.”

The Council should design the MCS to “produce all power savings that are cost-effective for the region and economically feasible for consumers, taking into account financial assistance from the Bonneville Power Administration and the region’s utilities.”

Section 4(f) of the Power Act also authorizes the Council to recommend that Bonneville impose a surcharge on its utility customers in areas that have not implemented the MCS.

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The MCS – Legislative History

The Hearing before the Committee on Energy and Natural Resources United States Senate, 95th Congress, Second Session on S. 2080 on the Pacific Northwest Electric Power Supply and Conservation Act, Seattle, WA, April 8, 1978

Committee Chair Senator Henry Jackson: *Mr. Eckman, what is the single most important thing that we could undertake in the Pacific Northwest to bring about true conservation?*

Tom Eckman (Chair of the Washington Environmental Council Energy Committee): *I think regionwide the institution of cost-effective building performance standards either in terms of engineering standards or heat loss standards would have the greatest potential for reducing electricity demands.*



THE 2021
NORTHWEST
POWER PLAN

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Model Conservation Standards (MCS)

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- (i) new and existing structures
- (ii) utility, customer, and governmental conservation programs
- (iii) other consumer actions for achieving conservation

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Model Conservation Standards (MCS)

This section of the Act also requires:

- that the standards “reflect geographic and climatic differences within the region and other appropriate considerations.”
- that the Council design the MCS to “produce all power savings that are cost-effective for the region and economically feasible for consumers, taking into account financial assistance from the Bonneville Power Administration and the region’s utilities.”

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MCS - Surcharge and Surcharge Methodology

Section 4(f) of the Power Act also authorizes the Council to recommend that Bonneville impose a surcharge on its utility customers in areas that have not implemented the MCS.

The power plan is to include a methodology for calculating the surcharge before the Council may recommend a surcharge.

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MCS - Surcharge Methodology

Per Section 4(f)(2), the surcharge may be imposed on Bonneville customers for those portions of their regional loads that are within states or political subdivisions that have not, or on customers who have not, implemented conservation measures that achieve savings of electricity comparable to those that would be obtained under the model conservation standards.

- The surcharge is to be designed to recover additional costs incurred because projected energy savings have not been achieved.
- The surcharge must be no less than 10 percent and no more than 50 percent of the Administrator’s applicable rates for a customer’s load or portion of load.

The intent of the surcharge possibility is to provide a strong incentive to utilities and state and local jurisdictions to adopt and enforce the standards or comparable alternatives.

MCS in the Power Plans

- In the first three Power Plans (1983, 1986, 1991), the focus of the MCS was on developing and adopting efficient building codes. These were very prescriptive, building-coded like standards that resulted in strong state building energy codes
- The Fourth Plan (1998) included prescriptive requirements for residential and recommended ASHRAE 90.1 for commercial
 - Less focus on MCS due to utility restructuring
- The Fifth (2004) and Sixth (2010) Plans included further prescriptive requirements especially for residential and commercial buildings and added new construction program requirements for “all cost-effective conservation”
- The Seventh Plan (2016) focus was globally to “acquire all cost-effective efficiency” as well as on more specific actions (e.g. detailed process to acquire distribution efficiency)
- The 2021 Plan (2022)

MCS in the Power Plan (cont'd)

First Power Plan MCS April 27, 1983

- Established space heating performance targets for new electrically heated residences for three Northwest Climate Zones
- MCS requirements were 40% better than toughest existing energy codes in region
- Recommended that MCS be adopted by January 1, 1986 or BPA impose 10% surcharge on utilities serving non-complying areas
- Council was sued. Ninth Circuit affirms MCS. *Seattle Master Builders* case

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Example MCS Table from Plan 1

Table J4-1.
Thermal Performance Criteria for Low-Rise Residential Buildings
(Occupancy Groups R-1 and R-3)

Element	Climate Zone*					
	Zone 1 Group R		Zone 2 Group R		Zone 3 Group R	
	Div. 3	Div. 1	Div. 3	Div. 1	Div. 3	Div. 1
Walls ¹ (U _o Value)	.10	.115	.09	.115	.09	.115
Roof/Ceiling ² (U _o Value)	.028	.035	.028	.035	.028	.035
Floors over Unconditioned Spaces (U _o Value) ³						
Exposed to Outdoor Air	.05	.05	.035	.035	.035	.035
All Others (U _o Value)	.08	.08	.05	.05	.05	.05
Slab-on-Grade Floors						
Unheated ⁴ (R Value)	5	5	10	10	10	10
Heated (R Value)	10	10	12	12	15	15

*Zone 1 = 4000 - 6000 heating degree days at 65° F

*Zone 2 = 6001 - 8000 heating degree days at 65° F

*Zone 3 = over 8000 heating degree days at 65° F

¹Includes all components of gross wall area (see definition)

²Includes all components of skylights in gross roof/ceiling area (see definition)

³Includes all components of gross floor area (see definition)

⁴Not incorporating a heating system within floor slab

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Implementing the MCS

- 1986
 - Washington State Legislature enacts state energy code that achieves about 50% of the savings called for by the MCS
 - Oregon Energy Conservation Board revises state energy code that achieves about 40% of savings called for by MCS beginning in 1987 and 55% beginning in 1989
- 1991/92 – Oregon and Washington update codes to near MCS levels
- 2009 – Idaho and Montana adopt codes roughly equivalent to MCS

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MCS in the Power Plan (cont'd)

- The Fourth Plan (1998) included prescriptive requirements for residential and recommended ASHRAE 90.1 for commercial
 - Less focus on MCS due to utility restructuring
- The Fifth (2004) and Sixth (2010) Plans included further prescriptive requirements especially for residential and commercial buildings and added new construction program requirements for “all cost effective conservation”
- The Seventh Plan (2016) focus was globally to “acquire all cost-effective efficiency” as well as on more specific actions (e.g. detailed process to acquire distribution efficiency)

No surcharge recommendation included in Plans 4 through 7.

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MCS in the Seventh Plan

The focus of the Seventh Power Plan MCS was on three areas intended to improve program design and delivery:

- Ensuring full participation in programs
 - MCS-1 – Improve participation in programs from “hard to reach” or “underserved” markets
- Achieving voltage optimization
 - MCS-1 – Evaluate and pursue savings on utility distribution circuits
- Enhancing codes and standards
 - MCS-3 through MCS-7 – efforts related to supporting building codes and Federal standards
 - Much of this is accomplished through NEEA

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A Few Notes from the Power Act... (3)(4)

Cost-effective means that such measure or resource must be forecast...

- to be reliable and available within the time it is needed, and
- to meet or reduce the electric power demand ... of the **consumers** of the **customers** at an estimated incremental **system cost** no greater than that of the least-cost similarly reliable and available alternative measure or **resource**, or any combination thereof.

“System cost” means an estimate of **all direct costs of a measure or resource over its effective life**, including ... the cost of distribution and transmission to the consumer and, among other factors, waste disposal costs, end-of-cycle costs, and fuel costs (including projected increases), and such **quantifiable environmental costs and benefits ... are directly attributable to such measure or resource.**

Resource means -- electric **power**, including the actual or planned electric power capability of **generating** facilities, **or** actual or planned load reduction resulting from direct application of a renewable energy resource by a consumer or from a **conservation measure.** (3)(19))

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A few more notes from the Power Act...

4(e) Plan priorities and requisite features; studies

4(e)(1). **The plan shall, as provided in this paragraph, give priority to resources which the Council determines to be cost-effective. Priority shall be given: first, to conservation;** second, to renewable resources; third, to generating resources utilizing waste heat or generating resources of high fuel conversion efficiency; and fourth, to all other resources. [Northwest Power Act, §4(e)(1), 94 Stat. 2705.]

4(e)(2). **The plan shall set forth a general scheme for implementing conservation measures and developing resources pursuant to section 839d of this title** to reduce or meet the Administrator's obligations with due consideration by the Council for (A) environmental quality, (B) compatibility with the existing regional power system, (C) protection, mitigation, and enhancement of fish and wildlife and related spawning grounds and habitat, including sufficient quantities and qualities of flows for successful migration, survival, and propagation of anadromous fish, and (D) other criteria which may be set forth in the plan. [Northwest Power Act, §4(e)(2), 94 Stat. 2706.]

4(e)(3). To accomplish the priorities established by this subsection, the plan shall include the following elements which shall be set forth in such detail as the Council determines to be appropriate:

4(e)(3)(A). **an energy conservation program to be implemented under this chapter, including, but not limited to, model conservation standards;** [Northwest Power Act, §4(e)(3)(A), 94 Stat. 2706.]

4(e)(3)(B). **recommendation for research and development;** [Northwest Power Act, §4(e)(3)(B), 94 Stat. 2706.]

4(e)(3)(C). **a methodology for determining quantifiable environmental costs and benefits** under section 839a(4) of this title; [Northwest Power Act, §4(e)(3)(C), 94 Stat. 2706.]