

Bonneville Power Administration's Response to 2022-2027 Energy Efficiency Action Plan Comments

To: Customers, Stakeholders and Interested Parties
From: Bonneville Power Administration, Energy Efficiency
Date: April 25, 2023
Re: Bonneville Power Administration's 2022-2027 Energy Efficiency Action Plan Comments and Response

On Feb. 21, 2023, the Bonneville Power Administration (BPA) published its [Draft 2022-2027 Energy Efficiency Action Plan](#) (Action Plan), outlining BPA's operational strategy for achieving its energy conservation goal. The Action Plan is guided by the Northwest Power and Conservation Council's 2021 Power Plan and BPA Power Services' 2022 Resource Program. The final version will be posted to the [Energy Efficiency Action Plan website](#) in May.

BPA invited public review and comment on its draft Action Plan over a three-week period through March 17, 2023. Eleven parties provided comments, which BPA thoroughly reviewed and has enclosed. The feedback received was thoughtful and constructive. Common themes, responses, and clarifications to some specific questions regarding figures in the draft Action Plan are provided below.

1. BPA's Action Plan Goal

BPA received several suggestions to increase its energy savings goal in the Action Plan, citing the value energy efficiency provides to the region and its role in supporting customers' ability to meet clean energy requirements. The agency also received comments supporting its goal, stating it reflects the reality of declining potential for energy efficiency and its declining cost effectiveness. The agency believes its goal of achieving 300 aMW is reasonable and in line with BPA's 2022 Resource Program least cost portfolio (299 aMW). It is also within the Council's 2021 Power Plan target range for BPA (270-360 aMW). In setting the goal and creating the forecast BPA followed guidance from the Power Plan and Resource Program which, respectively, calculate the cost effective amount of energy efficiency the region requires and the energy efficiency necessary to meet BPA's needs. BPA also considered past energy efficiency achievements, current resources, market factors and utility feedback. Progress will be closely tracked against the goal and BPA will include an updated forecast in its midpoint Action Plan update.

2. Utility Self-Funding

BPA received comments expressing concerns it may be over-relying on utility self-funding. Except for years most impacted by the COVID-19 pandemic, historically BPA customers have met or exceeded self-funding expectations. The proportion of self-funded to Energy Efficiency

Incentive (EEI) funded savings will continue to be monitored to determine if changes to future planning assumptions are necessary.

3. Mitigation for Savings Shortfalls

Some commenters expressed a desire for BPA to explain why conservation acquisitions fell short of its Seventh Power Plan goals and specify how the agency will prevent underachievement moving forward. Both the Power Plan and Resource Program are forward-looking analyses that use the region's current resource mix, conservation potential and anticipated needs as inputs. These analyses already include any previous shortfalls in savings acquisitions in the goals they establish. In other words, energy savings that have not been achieved are identified in the Council's calculations of future energy efficiency savings potential in future Power Plans. Similarly, any uncaptured energy savings were embedded in the remaining energy efficiency potential used to develop BPA's Resource Program.

Throughout the Action Plan period, performance will be monitored against the Action Plan goals and forecast. BPA will adaptively manage its portfolio to address changing conditions and if needed, implement corrective actions. Some of these actions could include:

- **Shifting portfolio offerings:** BPA may refine its Energy Efficiency Program offerings and redirect program investments to pursue savings from measures that are lagging behind. This could include adding new measures to the portfolio and refocusing programmatic infrastructure support to pursue high-volume, high-savings potential measures. The first phase of this work is already underway with the agency preparing for the FY 2024-2025 rate period, but BPA may take additional steps should current actions prove insufficient to meet EE Action Plan goals.
- **Offering special promotions:** BPA can increase incentives for targeted measures and offer contractor sales incentives for midstream offerings like Residential Comfort Ready Homes or the Commercial Trade Ally Network NW. Additionally, the agency can use programs like the direct funding demonstration pilot to enable conservation which would not be possible with existing incentive budgets.
- **Making updates to Integrated Program Review budget:** In 2024, BPA will begin the Integrated Program Review budget setting process for FY 2026-2027. The agency will consider Energy Efficiency Program progress toward achieving its energy conservation goals as it establishes budgets for the last rate period of the Action Plan.

4. Demand Response Work Plan

A few commenters asked BPA to publish a more detailed demand response goal and work plan. As background, the Council's 2021 Power Plan and BPA's 2022 Resource Program both identified a subset of frequently deployable, low-cost demand response as potentially valuable for BPA, namely demand voltage reduction, or DVR, and rate-based products like time-of-use rates. DVR and time-based pricing can serve as energy-related, load-shifting products used frequently to move load from high-cost periods to low-cost periods as well as save energy. For example, the agency has already established in its power rates higher demand charges that serve to reduce or shave peak load. BPA has also been successful with the use of traditional demand response in specific historical situations (e.g., Orcas Power and Light, Demand Exchange) and has tested traditional DR in multiple pilots. The agency has and continues to employ actions which are the same or similar to DR. Examples include establishing demand

charges that send price signals intended to reduce demand or securing contract rights that enable BPA to cut or curtail power deliveries, i.e., decrease load service. In contrast, BPA's experience with DVR may not be sufficient to quickly stand up the specific programs outlined in both the Council's Power Plan and BPA's Resource Program. BPA will need to thoughtfully engage with customers and stakeholders before offering a new program.

BPA intends to stand up an effective energy-related DVR program to help meet Power Plan and Resource Program needs. The agency may be able to provide an important enablement role, but it is too soon in our program design process to know how this might occur. As a more detailed plan develops, BPA will provide progress updates to the region.

5. Nontraditional Energy Efficiency

BPA appreciates the interest among some commenters to expand the use of Energy Efficiency Incentive (EEI) dollars to cover technologies not traditionally considered conservation measures (e.g., renewables projects like solar). However, there are statutory and pragmatic reasons for separating conservation measures from nonconservation measures.

BPA considers how to effectively use emerging technologies to meet its load-serving obligations, but they must fall within the definition of a "resource" or "conservation" as defined in the Northwest Power Act. The Act defines "resource" as "electric power, including the actual or planned power capability of generating facilities, or actual or planned load reduction from direct application of a renewable resource by a consumer, or from a conservation (energy savings or peak reduction) measure." Section 3(19). The Act includes conservation measures, like insulation or weatherization, as well as the more technologically complex measures like energy management that BPA offers in our energy efficiency program. In contrast, renewable projects (like rooftop solar) or traditional demand response that provide peak shaving benefits without an increase in efficiency are not conservation measures. Given the Act's definitions and BPA's administration of the Act, the agency will not interpret its governing statutes in an inconsistent manner to allow for redirection of dollars budgeted for acquiring conservation to be used for nonconservation measures. Any fundamental restructuring of BPA's programs would need to be informed by potential costs, benefits and impacts to BPA and our customers.

In the demand response section of the Action Plan, BPA discusses the ways it is exploring demand flexibility products, beyond traditional demand response use cases, which may result in new customer offerings.

6. Achieving All Cost-Effective Energy Efficiency

BPA received a suggestion to work with Council, NEEA, and utilities to identify strategies for achieving all cost-effective energy efficiency. The agency will continue to collaborate with regional partners to identify pathways to develop new and innovative cost effective energy efficiency measures that can be implemented by BPA's firm power customers. This includes continuing to support NEEA's market transformation efforts to increase adoption of measures that do not lend themselves well to our portfolio. BPA is committed to continued partnership with NEEA to ensure the delivery of complementary market transformation savings.

While there will always be measures which seem appealing from an analytical perspective, in reality not all lend themselves well to program implementation. Good examples are data centers and residential lighting fixtures. Utilities recognize this challenge and noted in their comments that BPA should balance the outcomes of modeling with the realities of implementation and

consider non-cost effective measures valuable to specific utilities, especially our small, rural and residential customers.

7. Electrification Policies

Another theme in the comments was a call for the agency to be a proactive leader in advancing electrification and responding to federal and state decarbonization policies. BPA recognizes the impact of state and national policy on the region and kept these policies in mind when developing the Action Plan strategy and forecasts.

BPA also recognizes the implementation plans for these policies are not yet fully defined and/or are rapidly changing. The impacts of the dynamic policy environment on the power system are not yet clear. The Action Plan is flexible enough to adapt to the changing landscape and will be updated at least once during the 2021 Plan period, and more frequently if necessary.

While efficiency is a critical component to the region's decarbonization efforts, decarbonization in and of itself is not BPA's primary objective. In general BPA's efficiency programs better enable customers to respond to electrification, decarbonization, and other landscape changes as they occur. As BPA acquires conservation from its customers it helps make electric loads more efficient and contributes to electrification and decarbonization goals. Some specific activities BPA and its customers have completed or are pursuing include:

- BPA re-examined its approach to applying the Council's cost effectiveness requirements to ensure it can offer a portfolio that is on the whole cost effective while including important measures critical for efficient electrification and decarbonization. This includes heat pump measures, many of which would not have remained in the portfolio if BPA applied a strict cost effectiveness screen at the measure level.
- BPA is working with customers to streamline its approach to large new construction projects which will be of value to customers in jurisdictions restricting the use of fossil fuels in new buildings.
- BPA is conducting research on critical technologies, like industrial heat pump applications that will enable large scale decarbonization of energy intensive loads.
- BPA's Low Income program is adding staff resources and streamlining application and verification processes. This will enable increased uptake of various technologies, like insulation and efficient windows, which increase end-user resilience during outages and extreme weather events.
- BPA's 2024 Resource Program will examine how variation in loads, resources, market availability, and other uncertainties interact in identifying a least-cost portfolio of resources which meets the agency's expected future needs. The impact to BPA's firm obligations from regional electrification and other sources of customer load growth are key areas of focus for BPA.
- The agency BPA is continuing to work with NEEA and fund end use load research, which helps the agency and the region understand its loads better and identify opportunities for potential roadblocks to electrification.
- BPA is working with NEEA to create a regional working group around federal funding opportunities including the Inflation Reduction Act, or IRA, and the Infrastructure

Investment and Jobs Act (IIJA). The working group will be a NEEA Regional Portfolio Advisory Committee (RPAC) subcommittee.

8. Grouping Utilities

BPA acknowledges the request to group utilities with similar adoption rates and/or offer different measures and incentive structures based on variable savings potential among BPA's broad customer base. The agency understands many of our customers face challenges unique to their service territory when implementing energy efficiency programs. Customers with service territories that are slower to transform often lose access to measures while there is still local savings potential, and customers with limited access to resources within their territories may be unable to implement complex programs. Creating programs customized to geography, adoption rate, or other characteristics could lead to undue complexity and add significant burden and cost to the management of BPA's Energy Efficiency Program. Ultimately, BPA determined the value would not outweigh the costs, but believes the composition of its portfolio offers customers implementation flexibility. For example, BPA preserved many of the residential HVAC measures despite their cost effectiveness challenges based on stated customer needs.

9. Low Income and Weatherization

BPA understands the desire from some parties for the agency to offer more support for low income customers and advance weatherization in the region. BPA will continue to work with customers and regional partners to support low income and tribal communities. The agency provides substantial support to these customers through the use of utility EEI funding as well as state and direct tribal grant funding, which includes funding for weatherization, HVAC and water heating projects. Efforts to increase support for these offerings include:

- BPA is working to expand the low income measure offerings across multiple technologies for all housing types and increase EEI payment cost caps for several measures to reflect increasing costs of materials and labor. For example, BPA is adding low income measures for commercial HVAC installations in shared multifamily spaces to help address the needs and challenges of working with multifamily property owners.
- BPA recently changed our policy to allow utilities to accept a signed self-attestation of income from the applicant, which is in line with national trends for low income programs. This will help address challenges with income qualification for utilities struggling to find staff or community action agency resources to perform income qualification.
- BPA is initiating a process evaluation of its Low Income Program, focusing on identifying broader opportunities to expand uptake of its offerings. Key research activities will include:
 - A review of existing research on low income programs to identify common challenges, best practices, opportunities for improvement, and lessons learned from other jurisdictions.
 - Interviews with utilities and Community Action Agencies (CAAs) to understand program experience (including barriers and benefits), identify needs for additional support, and gauge receptivity to potential solutions.
 - A demographic analysis to understand household types and areas that present the greatest program need or opportunity.

- Identification of innovative ways to support utilities with limited EEI budgets, fewer local resources, or local community action agencies that have longer, sometimes multiyear waitlists to complete energy efficiency work.
- BPA is increasing funding to expand high performance heat pump installations to serve more low income households across the region. BPA recently completed installations of two high performance, high capacity ductless heat pumps for Glacier Electric Cooperative at two Blackfeet Tribal Housing Authority homes in Babb, Montana, one of the coldest places in our region. BPA's engineering teams installed monitoring equipment to collect performance data to inform future applications. Our engineering and program teams are working to identify additional sites for both ducted and ductless installations, which BPA staff are committed to getting installed in 2023.
- BPA's Low Income Program supports workforce development for both weatherization and low income contractors. We are consistently developing trainings and contractor and homeowner informational resources, and actively supporting regional utilities and contractors through the Comfort Ready Home Program. BPA will meet with state agencies, tribes, regional training centers, and attend regional and national conferences including the National Home Performance Conference in Seattle, Energy OutWest, Oregon Energy Coordinators Association, Affiliated Tribes of NW Indians, and others, to better understand workforce challenges and discuss how BPA can be a partner in the effort to build regional capacity for weatherization, HVAC and water heating.
- BPA's Tribal Affairs Account Executives and Energy Efficiency's Low Income Program team regularly meet virtually and on-site with tribal staff to discuss grant opportunities and ensure tribes have access to much needed resources. New grant initiatives and innovations stem from these critical conversations and help address unique challenges tribes face around the region. In 2023-2024, visits with housing managers at Yakama, Makah, Quinault, Quileute, Blackfeet, Fort Bidwell, Burns Paiute, Spokane, Colville, Tulalip, Cowlitz, and Duck Valley will take place to discuss Low Income Program offerings.
- To support customer utilities who want to offer low income measures and help utility staff better understand BPA's Low Income Program, the agency's Comfort Ready Home Program is developing a checklist and optional and customizable data collection form for low income measures.
- BPA's Comfort Ready Home Program includes research of additional weatherization measure opportunities as well as regional trainings and contractor development opportunities to help meet the high demand for weatherization work.

10. Program Support and Incentives

BPA received diverse requests from commenters related to program offerings, including adding and removing programs and increasing incentives. The agency appreciates the specific suggestions and will keep them in mind as it considers future program plans. Overall, the agency seeks to offer a portfolio of measures and supporting infrastructure programs that meet the needs of the region as a whole and enables the acquisition of resources at a reasonable overall cost. As we move through the Action Plan period we will continue to work with customers and stakeholders to refine our programs to maximize their impact and better meet customer needs.

Energy Efficiency program activity will be monitored to determine if measures need to be added, removed or altered. In the forthcoming October 2023 Implementation Manual update, there are a number of new measures and changes to existing measure requirements, incentives and savings. These changes attempt to reconcile updated evaluation findings, trends in market cost and technical options, and feedback from diverse stakeholders. BPA is working to maintain and/or increase incentive levels where needed and provide as much program support as possible with the resources available. The agency welcomes continued utility and stakeholder feedback which can be provided to BPA's Energy Efficiency Representatives, utility roundtables, utility sounding board meetings, and/or other forums.

11. Connection Between Action Plan and 2021 Power Plan

BPA acknowledges the comment received regarding the Action Plan's deviation from the Power Plan, both qualitatively and quantitatively. There will be continue to be differences between the Power Plan and the Action Plan. BPA seeks to align its portfolio with the Power Plan's measure mix and simultaneously balance it with programs and products that allow customers to achieve conservation in the loads they serve with electric power supplied by BPA.

Regarding cost effectiveness, BPA does not dictate the order in which utilities acquire savings (for example, requiring cost effective savings to occur before less effective savings). The agency also does not identify exactly which future savings will be cost effective. BPA's approach will continue to allow customers to choose which measures best fit the needs of their individual service territory. What customers report and when is within their discretion. The portfolio presented in the Action Plan will largely be cost effective per the Power Plan and/or will be responsive to other Power Plan goals. BPA will add some language to the Action Plan to better highlight areas of alignment between the Action Plan and the Power Plan.

12. Cost Effectiveness and Non-Energy Impacts

BPA received comments pointing out flaws in its cost effectiveness methodology and asking the agency to both explain the assessment of Non-Energy Impacts in the Action Plan and incorporate more Non-Energy Impacts into cost effectiveness calculations. The cost effectiveness methodology and outcomes are within the purview of the Northwest Power and Conservation Council. The agency has included in its portfolio measures that may not comport as a priority by the Power Plan, but have been identified by the Resource Program as valuable to achieving conservation.

13. Small, Rural, Residential Utility Definition

BPA understands its definition of small, rural, and residential utilities may need to evolve to accurately reflect the changing regional landscape. Redefining the SRR designation is not in scope for this Action Plan, but it is something the agency is willing to evaluate.

14. Clarifications in Text

BPA provides the following clarifications to questions we received from commenters (in italics):

What accounts for the differences in the green shaded numbers between Figure 3 and Table 5? There is a difference of \$5.8M in FY 22-23 and \$0.8M in FY 24-25.

In Figure 3 the segment in green indicates the Conservation Purchases (or Energy Efficiency Incentive) budgets BPA set during the agencywide Integrated Program Review budgeting

process. Table 5 shows the predicted cost of the forecasted savings for the 2022-2025 Energy Efficiency Program, inclusive of rollovers between rate periods.

What is “Unallocated savings” referring to in Table 2 (p. 18, 18.5 aMW in FY 22-23) and Table 5 (p. 24, \$34.5M in FY 22-23)?

BPA defines unallocated savings in the Action Plan’s Section 2.1, Savings Forecasts – Program Energy Savings. The total program savings forecast required fewer expenditures in the near term than the allocated program budget for Conservation Purchases (Energy Efficiency Incentive). BPA’s customers will likely spend the remaining budget above the total cost estimate and generate additional savings, but it is uncertain in which sectors they will choose to invest. Consistent with its previous Action Plan, BPA refers to these savings as “unallocated.” They are the direct result of anticipated spending of the portion of BPA’s budget not utilized in any particular sector forecast.

Figure 4, p. 24 appears to include “self-funded” savings but NOT “self-funded costs.” Why include savings without corresponding costs? It seems misleading. If self-funded savings were excluded, cost would be in the low 20s cents/kWh, instead of 15 cents. If infrastructure costs were included, \$54.0M and \$52.1M for FY 22-23 and FY 24-25 respectively (Figure 3, p. 23), the number would be in the 30s. Same issue for Fig 9 p32, Fig 14 p39, Fig 19 p46, Fig 24 p53, Fig 29 p61 and Fig 34 p66.

BPA understands that the delivery of self-funded savings comes at a cost to customers. However, consistent with the previous Action Plan, BPA presents data in figures and tables from an agency perspective. We compare the energy conservation savings BPA can claim (both EEI-funded and self-funded) with the costs incurred by BPA (only EEI, not self-funded, costs). This is done to accurately represent the costs BPA pays and must therefore collect in rates. Since BPA has no line of sight to the cost associated with self-funded savings we would be unable to accurately account for the overall regional cost of efficiency acquisition.

For Figures 7 and 8 (p. 31-32), is weatherization included in the whole building/meter level category?

Weatherization is included in the HVAC end use.

March 17, 2023

Jamae Hilliard Creecy, VP Energy Efficiency
Bonneville Power Administration

RE: PPC Comments on BPA’s Draft 2022-2027 Energy Efficiency Action Plan

The Public Power Council (PPC) appreciates this opportunity to provide comments on BPA’s Draft 2022-2027 Energy Efficiency Action Plan. PPC is the broadest trade association of Northwest public power, representing the full diversity of utilities with preference rights to purchase wholesale power and transmission services from BPA.

PPC members rely on these services to provide reliable, economic, and environmentally responsible power supply to the communities and businesses they serve at cost. PPC members provide the majority of the funding that supports BPA’s operations and obligations to repay the federal and private investments in the federal system. This includes final “take or pay” responsibility for costs of the power system under long-term contracts.

PPC members have and continue to make substantial investments in energy efficiency. The entire BPA energy efficiency program is funded by the power rates paid by preference customers, in addition to programs and support at individual utilities. Although a distinction is sometimes made between Energy Efficiency Incentive (EEI) and “self-funded” conservation, in actuality all conservation acquired by BPA is funded directly by power customers. Further, with the Tiered Rates Methodology, customers are subject to price signals and a rate design that ensures that the costs, benefits, and risks of their energy efficiency investments (and other resource investment decisions) are their own. Finally as context, PPC members are non-profit, locally governed entities that do not have a profit motive that could be a disincentive to energy efficiency investments.

PPC strongly supports the ongoing use of the BPA Resource Program analysis as an analytical foundation for development of energy efficiency acquisition strategies. In combination with appropriate inputs from the Northwest Power and Conservation Council’s power plan, this results in an approach that is consistent with the power plan while fulfilling BPA’s obligation to conduct its own due diligence in resource

acquisition. PPC supports further enhancement of the Resource Program analytical capabilities through time to enable the most informed resource decisions for both generating and supply-side resources.

PPC believes that the recommendations and driving factors behind the Action Plan are generally reasonable. It is of particular importance to emphasize that a lower target range of programmatic acquisition is not indicative of a diminished commitment to pursuing cost-effective energy efficiency. Rather, there is a reality of declining potential for energy efficiency due to previous achievements both programmatically and in terms of codes, standards, and general technological progress. In terms of cost effectiveness, the costs of alternative resources (including carbon free) have also declined dramatically.

PPC supports reasonable flexibility in implementation of the energy efficiency program to meet customer needs. Outcomes of optimal production cost modeling must be balanced with consideration for “real world” implementation for diverse customer circumstances. For example, there are varying levels of potential in different sectors by service territory and also different levels of access to materials and contractors to implement measures. Rural utilities in particular face unique challenges and PPC supports implementation options to meet their needs as part of an overall portfolio - even where that may not be completely optimal from a modeled cost-effectiveness standard. We also note that with new large load types coming on, retail energy sales may not be the best measure of a “small” or “rural” utility – a utility could be a generally a small rural community but serve a large server load for example.

Finally, we encourage BPA to be adaptable to changing circumstances during the course of the Acton Plan period. Regular check ins and adjustments as needed represents prudent business practice.

Thank you for your consideration of these comments.

Sincerely,

A handwritten signature in blue ink that reads "Michael Deen". The signature is written in a cursive style and is contained within a thin black rectangular border.

Michael Deen
Policy Director, Public Power Council

March 17, 2023

Submitted via email to Elena Kazarov, Long Term Energy Efficiency Planner (ekazarov@bpa.gov)

Thank you for the opportunity to provide comments regarding BPA's Draft 2022-2027 Energy Efficiency Action Plan. We hope that the following points are helpful as the agency considers and finalizes its plan.

We appreciate that BPA staff were very accommodating and willing to provide individualized meetings to review elements of the Draft Plan, and we appreciate their time and expertise. A more formal public process for the development of future plans that would bring together a diversity of views could lead to a more thoroughly reviewed plan. We understand the next opportunity may occur through the Provider of Choice process. We support broad review of BPA's program and policy through that process prior to negotiation of Energy Conservation Agreements in 2025 and 2026.

We understand the Northwest Power and Conservation Council (Council) identifies forecast targets identifying amounts of energy efficiency savings for the region. And, BPA utilizes its Resource Plan to apply those targets and determine the appropriate mix of least-cost resources to meet its needs. We support BPA's approach to utilize the Resource Plan to identify cost-effective levels of energy efficiency for BPA and its customers.

The draft plan aligns with NRU members' experience that conservation opportunities are becoming more limited. While all measures must remain cost effective for the system as a whole, NRU members expressed interest in expanding and identifying new program offerings that would be beneficial to utilities. We also heard a general theme that utilities have different needs, varying in levels of support needed to implement measures and types of measures that would be successful due to historical investments that impact future opportunities. And particularly, small and mid-sized utilities may have difficulty utilizing conservation measures due to lower levels of staffing support and smaller utility service territories and opportunities. Some ideas to reflect these concepts are listed below.

- We heard that there are measures that require technical assistance that may be difficult for small utility staff to accomplish, such as in-depth energy audits or engineering support for certain measures. To the extent that BPA already offers assistance it may be beneficial to share that information more broadly as we heard from some members support for that type of assistance. We also understand there may be a lack of contractors performing certain measures in different areas across BPA's footprint. NRU wonders if there might be savings by providing opportunities

to share technical assistance among a number of utilities in a region. We hope that BPA or others might be able to provide assistance to encourage or develop these opportunities, and NRU may have an interest in facilitating these opportunities and helping to bring contractors to small and rural utilities.

- We understand there is variation among preference customers in the adoption of energy efficiency measures with some utilities adopting certain measures faster than others. To recognize this variation, NRU recommends that BPA consider grouping utilities that have similar adoption rates of measures together and applying measures and incentive structures differently to recognize savings potential that still exist for certain utilities. That way the approach would vary according to the opportunity in the utility and better meet the utility's needs (and therefore better meet the overall targets).
- It is NRU's understanding that when considering the cost-effectiveness of particular measures BPA looks at the value of the measure to the BPA system in meeting its load obligations and may not consider the value to the utility of certain measures. Recognizing that the Council drives the measures, if utilities were able to provide more input or apply more control over identifying measures and approaches for the use of their incentive dollars in their service territory, they could identify where greater potential lies in their service territory or look at the benefit of various measures to better align the utility's load shape with the federal system, thus resulting in a reduction of load shaping and demand charges and reducing the need for BPA to acquire resources to meet peak load needs.
- Many utilities are interested in the potential to use their conservation dollars to support projects that may achieve the same goal as a conservation measure to reduce a utility's usage of federal power – some ideas that NRU members offered were to use dollars for small renewable generation projects, such as solar, and other related technologies. To the extent that expanding the use of energy efficiency dollars will result in more savings and will offset the need for BPA to acquire resources, there is additional value to all preference customers.

Related to specific measures about which we received input from members, please see below.

- The NW Power Plan removed a number of measures that are most valuable to residential customers, such as ductless heat pumps. BPA proposes to include those in their program and NRU supports that inclusion.
- We heard from a number of members that the Comfort Ready program may not be providing value and would appreciate further exploration of the value of retaining the program.
- The Energy Smart Industrial Program has been a valuable program. Some NRU members wonder if additional support at this time will be enough to overcome staffing shortages and supply chain constraints and perhaps delaying an expansion would be a good idea until these other factors change.

- Many utilities indicated concern about eliminating the promotional HVAC and promotional payments as of April 1, 2022. If these promotions were retained, utilities may be better able to achieve savings and utilize their budget, especially since we are still experiencing economic impacts and supply chain constraints.
- Some utilities indicated concern about eliminating the Performance Tested Comfort System and would have liked additional discussion prior to BPA determining it would end that program.

Last, we understand there may be new federal and state incentives that will be implemented during the period of the Draft Plan. Our members are interested in ensuring a cohesive approach and encourage BPA to work toward that end. And, to the extent that the incentives are significant and could benefit from a change in strategy by BPA, NRU recommends a public review of the incentives and impact on the program and plan at that time.

We appreciate BPA's work to develop the Draft Plan and appreciate the opportunity to provide these comments for your consideration. If you would like to discuss these concepts further, please contact Tashiana Wangler at twangler@nru-nw.com or 503-956-9281.



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3/14/2023

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Submitted electronically via: eakazarov@bpa.gov

RE: Comments on BPA's 2022-2027 Energy Efficiency Action Plan

Clatskanie People's Utility District (CPUD) hereby submits comments in response to the Bonneville Power Administration's (BPA) comment request regarding the draft 2022-2027 Energy Efficiency Action Plan (Plan).

CPUD appreciates the time and effort put into the creation of the Plan and recognizes the diverse set of stakeholder needs that BPA is tasked with balancing. We are broadly supportive of the plan as presented and provide the following with the hope of building upon the draft.

Consumer needs are evolving at an incredible rate and in many ways we are seeing a reemergence of loads that mirror the magnitude of the DSI's of past. Data centers, modern material smelters, and hydrogen producers consume electricity in a way that is vastly different than what the region has come to expect from modern load. In a way electricity has become a raw commodity input into their product. Hydrogen production in and of itself is the transformation of electricity into another commodity form. Electrification aside, these developing industries are transforming the way we build and use the electric grid. Energy Efficiency (EE) and the way that we discuss the conservation of energy is going to require a categorical imagination in the near future. We believe the Plan can be improved upon by adding comments that call for discussions about this evolution. Many of these loads at minimum will be classified as New Large Single Loads (NLSLs) by BPA and it is yet to be seen how they will impact the EE landscape in the future. In many ways CPUD is experiencing several preemptive symptoms of what can happen to a preference customer loads become centralized around unique consumption profiles. CPUD load is heavily industrialized and participating in BPA's EE program is becoming increasingly difficult.

We also recommend an expanded section on electrification and believe this to be an area of enormous energy savings potential. As a region we are seeing voluntary and regulated electrification happen at an increasing rate. The potential of transportation electrification alone is going to transform the way we

use the grid. This is an area where BPA can lead the region by allowing for the creation of a forum to discuss electrification and how EE best occurs at the time of transformation rather than after the fact.

We recommend BPA evaluate the criteria for the determination of a “small rural utility”. CPUD is a small rural utility but for the purposes of EE program categorization we are not treated as such. This phenomenon is expected to grow as the region sees large users in traditionally rural communities.

We also recommend BPA consider the adoption of an expanded EE incentive structure that considers recent global events, market challenges, and the ability for rural utilities to participate in BPA’s programs. Many preference communities in the region face significant disadvantage when it comes to adopting what are now being called mature and “adopted” technologies. **Measure adoption curves and incentive structures should be amended for a broader and more equitable path to implementation.** The risk we face is stranding a material amount of conservation potential behind the uniform application of assumptions that don’t fit individual utilities. CPUD believes the creation of discrete adoption curves accounting for the grouping of similarly situated utilities will aid in better matching incentive payment tables and the diversity in implementation reality.

Finally, we recommend the consideration of how BPA’s EE program impacts preference customers resource portfolio, load forecast assumptions, and tier 1 allocations. There are significant implications for BPA customers when considering the choice to pursue EE or build new resources. Customers are having these difficult discussions through the course of the Post-2028 workshops and what many utilities are finding is that EE investment comes at the cost of tier 1 allocation. CPUD is an example of how a utility is faced with the potential loss of contract high water mark due to the acquisition of conservation as a resource alternative. This is an issue that warrants discussion.

Again; we appreciate the work that has gone into the drafting of the Plan and hope that you find benefit in our comments.

Chris Roden

Clatskanie PUD – Director of Energy Resources

Greg Kelleher, P.E. (he/him/his)
Customer Solutions Manager

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2022-2027 BPA Draft EE Action Plan – EWEB Comments

- We appreciate your efforts to partner with utilities and third parties to achieve energy savings targets cost effectively.
- Commercial lighting comes at a low cost, with incentives a fraction of many residential measures, and half of many commercial measures. Is BPA studying how much more lighting savings could be achieved by increasing those incentives? These projects are often much simpler to sell, achieve and process than others.
- Can we find a way to more accurately target and achieve savings from replacement of the most inefficient lighting still in use, rather than using a smaller savings value based on a more efficient “market” baseline?
- The opportunity to provide BPA pass-through incentives, much like conservation, for peak shifting measures (think water heaters and EV charging) and renewables such as PV installations could add options for utilities, with benefits similar to energy efficiency.
- Is there a way for BPA to count utility conservation investments for a longer period of time when determining high water marks for post-2028 contracts? Utilities may be reluctant to invest ratepayer funds in conservation if it reduces their future access to lower cost BPA power.
- Is BPA looking at ways to reduce infrastructure costs and utility burden for BPA processes and reporting? Conservation Infrastructure is roughly 25% of BPA budget (Figure 3, page 23). Utilities must also develop and fund their own infrastructure for program delivery, processes and reporting, and there is a lot of money being spent here that does not directly contribute to savings.
- What accounts for the differences in the green shaded numbers between Figure 3 and Table 5? There is a difference of \$5.8M in FY 22-23 and \$0.8M in FY 24-25.
- What is “Unallocated savings” referring to Table 2 (p. 18, 18.5 aMW in FY 22-23) and Table 5 (p. 24, \$34.5M in FY 22-23)?
- Figure 4, p. 24 appears to include “self-funded” savings but NOT “self-funded costs”. Why include savings without corresponding costs? It seems misleading. If self-funded savings were excluded, cost would be in the low 20’s cents/kWh, instead of 15 cents. If infrastructure costs were included, \$54.0M and \$52.1M for FY 22-23 and FY 24-25 respectively (Figure 3, p. 23), the number would be in the 30’s. Same issue for Fig 9 p32, Fig 14 p39, Fig 19 p46, Fig 24 p53, Fig 29 p61, and Fig 34 p66.
- We appreciate you looking at large volume HPWHs for multifamily buildings. We also appreciate efforts with cold climate heat pumps, and whatever will reduce the use of electric resistance heat as outside temperatures approach freezing.
- We appreciate any efforts to help support utility customers who are negotiating how to best promote BPA measures alongside state and federal funding streams. This can be confusing to negotiate.

- For Figures 7 and 8 (p. 31-32), is weatherization included in the whole building/meter level category?
- Although not called out specifically, savings potential from commercial and institutional new construction is a lost opportunity that needs to be focused on.
- We appreciate and are finding significant value working with the ESI program.
- Something analogous to the Energy Project Manager might be useful for large commercial complexes and campuses.
- There is significant potential in water and wastewater and we appreciate your efforts in this area.
- We find a significant challenge, yet also significant opportunity, for commercial savings from retro-commissioning. We would appreciate increased assistance in this area.

**Oregon Department of Energy
Oregon Public Utility Commission**

March 17, 2023
Via Electronic Mail

Ms. Elena Kazarov, Long Term Energy Efficiency Planner
Bonneville Power Administration
905 NE 11th Ave
Portland, OR 97232

Re: Bonneville Power Administration Draft Energy Efficiency Action Plan 2022-2027

Dear Ms. Kazarov,

The Oregon Department of Energy (ODOE) and Oregon Public Utility Commission (OPUC) submit the following comments in response to Bonneville Power Administration's (BPA) Draft 2022-2027 Energy Efficiency Action Plan (Draft Action Plan). We appreciate the opportunity to comment and BPA's collaboration as a regional partner.

ODOE's mission is to help Oregonians make informed decisions and maintain a resilient and affordable energy system. It advances solutions to shape an equitable clean energy transition, protect the environment and public health, and responsibly balance energy needs and impacts for current and future generations.

The OPUC is responsible for regulation of Oregon's investor-owned electric utilities (Portland General Electric, Pacific Power, and Idaho Power) and natural gas utilities (Avista, Cascade Natural Gas, and NW Natural). The PUC mission is to ensure Oregonians have access to safe, reliable and fairly priced utility services that advance state policy and promote the public interest.

ODOE and OPUC encourage BPA to set more ambitious energy efficiency targets. Collectively, our two state agencies are working with the industry to help transition our energy system in line with state policies that prioritize energy efficiency and demand response as resources (ORS 469.010, Northwest Power Act, and [SB 1547, Sec. 19](#)) and require Oregon's investor-owned utilities (IOUs) to reduce their greenhouse gas emissions 80% by 2030 and 100% by 2040 (House Bill 2021). We recognize the short-term rate pressures BPA, distribution utilities, and their customers face due to supply chain issues and inflation. However, the long-term savings and associated benefits of energy efficiency make continued investment in energy efficiency essential to meeting the region's long-term energy needs.

Meeting Oregon's climate and energy requirements requires ambition and increased reliance on no-regrets resource acquisitions, principally energy efficiency and demand response. We therefore submit the following recommendations to BPA:

1. As possible, incorporate the many co-benefits of energy efficiency to improve cost-effectiveness and create future energy efficiency potential.

2. Set more ambitious energy efficiency targets that reflect increasing electrification efforts and IRA incentives.
3. Establish specific demand response goals and launch programs to meet those goals.
4. Consider how underperformance on acquiring additional energy efficiency and demand response may impact BPA's customers and the region as a whole.

As we will expand upon in our comments below, the Draft Action Plan does not sufficiently recognize the pivotal moment we find ourselves in as we transition into a new energy future. Setting higher energy efficiency targets and more specific demand response goals can improve the draft plan.

1. As possible, incorporate co-benefits of energy efficiency to improve cost-effectiveness and create future energy efficiency potential.

We are glad to see that BPA mentioned value beyond energy savings as a guiding principle in developing this Draft Action Plan. We agree that co-benefits are an important consideration in assessing the value of energy efficiency. ODOE's 2022 Biennial Energy Report includes a [policy brief](#) on the co-benefits of energy efficiency, many of which are often overlooked in standard cost-effectiveness tests. These include capacity, resiliency, flexibility, and decarbonization, each of which was determined to be in scope for energy efficiency cost-effectiveness by the Northwest Power and Conservation Council's (NWPCC or the Council) Regional Technical Forum ("RTF").¹ We believe these co-benefits, and others, should be accounted for when conducting cost-effectiveness tests, either directly through quantitative analysis, where possible, or indirectly through qualitative considerations. The California Public Utilities Commission has pioneered several strategies for incorporating co-benefits into cost-effectiveness analyses.² We recognize the Pacific Northwest has a fundamentally different energy landscape than California, but we believe this is a strong example of how co-benefits can be incorporated into cost effectiveness measures. The Draft Action Plan does not make clear the extent to which these benefits were considered, and the Plan concludes that low renewable energy prices eliminate the ability for energy efficiency to compete with these resources. The co-benefits of energy efficiency are likely to shift the calculus of cost-effectiveness and demonstrate the value of continuing to pursue energy efficiency resources aggressively despite the changing landscape.

The decreasing cost of renewables is but one of many significant changes taking place in the transition of the electric power sector. In part due to the significant value of these co-benefits, we see tremendous potential for future energy efficiency in the region. Energy efficiency can continue to be one of the key drivers of Oregon's energy policy goals. Below, we highlight energy efficiency contributions to tackling three of today's most important energy priorities:

- **Decarbonization** – Oregon is actively exploring decarbonization policies for existing buildings. These policies are supported by recent Oregon Global Warming Commission and ODOE analysis, which found commercial and residential energy efficiency and weatherization to be some of the most effective measures for achieving the state's greenhouse gas emissions reduction goals.³

¹ Northwest Power and Conservation Council. (2022, March 30). Update on the NEI Discussion: Is the RTF scope broad enough? <https://nwcouncil.app.box.com/v/20220330RTFPACNEIs>

² State of California, P. U. C. (2021). Order Instituting Rulemaking Concerning Energy Efficiency Rolling Portfolios, Policies, Program, Evaluation, and Related Issues, Rulemaking 13-11-005. Pages 10-14. <https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M385/K864/385864616.PDF>

³ Oregon Global Warming Commission. See the [TIGHGER Project Report](#) and the Oregon Global Warming Commission December meeting (2022, December 16). <https://www.keeporegoncool.org/meeting-calendar/2022/12/16/oregon-global-warming-commission-meeting-virtual>

These findings are the result of analysis from Sustainable Solutions Group that considered co-benefits and equity impacts along with traditional cost-effectiveness analysis. The bulk of the cumulative \$120 billion in net financial and health benefits to Oregonians, as well as the thousands of additional jobs, comes from energy efficiency actions, in particular weatherization of residential and commercial buildings.

- **Resiliency** – High-impact events can be expensive and taxing on the electricity system. Reducing system demand through efficiency could mitigate the impacts of these events. At the household level, efficiency also provides benefits to customers who can better withstand severe weather events due to an efficient building’s ability to maintain comfortable temperatures during outages and an overall reduction in the amount of load that must be replaced with an alternative source during an outage.⁴
- **Capacity** – In addition to the traditional value of energy efficiency realized through kWh savings, there is tremendous value in the kW capacity reductions during peak and net peak demand that energy efficiency investments can help achieve. To ensure our grid can handle the increased loads expected under high electrification scenarios, we must deploy energy efficient resources as a means for lowering peak demand, even as peak need shifts through deployment of customer-sited resources. Energy efficiency can also help offset the need for transmission and distribution infrastructure, helping to avoid the expense and long-lead times associated with transmission projects.⁵ Avoided costs of new transmission are likely to be higher than the Council’s current value, leading to an undervaluing of energy efficiency.⁶ Finally, this valuable capacity translates to net revenues when it is available to markets at peak price intervals and represents an opportunity cost that could be considered in any cost effectiveness evaluation. BPA is well-aware of the revenue potential from selling additional electricity when it is in demand elsewhere. In 2022, BPA recorded \$964 million in net revenue and cited surplus power and transmission sales driven by higher electricity prices and favorable water conditions.⁷

We also agree with BPA that the Northwest Energy Efficiency Alliance (“NEEA”) plays an important role in creating market opportunities for cost-effective energy efficiency. This work has been crucial to the historical success of energy efficiency in the Pacific Northwest. NEEA has proven itself exceptional at transforming the market to constantly create new “low-hanging fruit” and develop opportunities for cost-effective energy efficiency. Oregon’s IOUs, with the help of Energy Trust of Oregon, exceeded

⁴ U.S Department of Energy. (n.d.). Resilience. Retrieved March 13, 2023, from HYPERLINK "https://betterbuildingssolutioncenter.energy.gov/resilience/about" https://betterbuildingssolutioncenter.energy.gov/resilience/about

⁵ American Council on an Energy Efficient Economy (ACEEE). “Energy Efficiency as a Resource” Accessed 15 March, 2023. <https://www.aceee.org/topic/ee-as-a-utility-resource>

⁶ PacifiCorp and Portland General Electric’s most-recent IRP Transmission Deferral Credits are \$6.34/kW-yr and \$55.93/kW-yr respectively. These are both increased from prior values and are significantly higher than the Council value. ProCost v5.07 uses \$3.61/kW-yr for the combined T&D credit, down from \$26.00/kW-yr in the 7th Power Plan. PacifiCorp and PGE avoided costs per UM 1893:

<https://edocs.puc.state.or.us/efdocs/HAU/um1893hau15168.pdf>. Council avoided costs:

<https://nwcouncil.app.box.com/v/ProCostv5-07>.

⁷ Annual Report 2022. BPA. P. 24. Accessed online: <https://www.bpa.gov/-/media/Aep/finance/annual-reports/ar2022.pdf>.

energy efficiency targets in recent years, including 2020 and 2021.⁸ Further, recently filed integrated resource plans are forecasting even higher levels of gas and electric savings in years ahead. For this reason, we are confident that there will continue to be significant cost-effective energy efficiency opportunities even in a changing environment.

2. Set more ambitious energy efficiency targets that reflect increasing electrification and IRA incentives.

The Council's 2021 Power Plan and BPA's 2022 Resource Program made it clear that under scenarios of higher electrification, energy efficiency and demand response targets increase significantly. The Council's least cost portfolio selects 300 MW of demand response, while a high-electrification scenario selects five times that amount at 1,500 MW.⁹ With increasing electrification in both transportation and buildings, we recommend BPA set more ambitious targets to hedge risks against underperformance in achieving the targets, which has occurred relative to previous plans.

BPA's own market research for the residential HVAC (ResHVAC) market demonstrates an important example of accelerating regional electrification. Over the study's six-year window, the number of homes without cooling fell from 52% in 2016 to just 28% in 2021.¹⁰ While there are many subtexts to this finding, the demand for cooling is driving a dramatic increase in air source heat pumps (ASHP) being installed in the region. Over the same period, the number of northwest homes with a heat pump as the primary heat source rose 60% from 990,000 households to 1.6 million households.¹¹ BPA states that much of that heat pump load is displacing electric resistance; it is likely that those heat pumps are also displacing some fossil fuel HVAC use. In BPA territory, this new load will be low cost and low carbon considering BPA's cost and emissions profiles.

BPA's decreasing programmatic efficiency targets, from 69 aMW in FY '22 and '23 to 63.8 aMW in FY '26 to '27 (an 8% decrease), are particularly concerning in light of these electrification scenarios. Reducing near-term energy efficiency targets while likely facing increasing electricity demand may create a scenario in which the region must later spend aggressively on relatively costly energy efficiency to manage high demand. Investing in energy efficiency in the near-term will help avoid this issue by maintaining effective program capacity and capturing opportunities created by the organic capital stock turnover cycle.

In addition to the aMW targets laid out in the Draft Action Plan, the performance metrics outlined in Section 3.7 are helpful for understanding how BPA evaluates the success of its programs. However, the Draft Action Plan does not provide any mechanism of accountability for failing to meet the goal for each of these metrics. We believe it is important for BPA to specify how it will do ongoing monitoring of progress and what type of corrective action it will take if it appears BPA is not going to meet its goals. BPA should not repeat the underperformance in meeting the last NWPC five-year conservation target during this upcoming period.

⁸ 2021 Annual Report. Energy Trust of Oregon. Accessed online: <https://www.energytrust.org/2021-annual-report/>

⁹ BPA EE Action Plan 2022-2027. Accessed online: <https://www.bpa.gov/-/media/Aep/energy-efficiency/energy-efficiency-action-plan/2022-2027-bpa-draft-ee-action-plan.pdf>.

¹⁰ BPA ResHVAC Model Report and Slideshow. Slide 7. Accessed online: <https://www.bpa.gov/-/media/Aep/energy-efficiency/momentum-savings/2016-2021-res-hvac-market-model-presentation.pdf>.

¹¹ Ibid, slide 13.

We are encouraged by the results of the ResHVAC model that provide one example of how much BPA programs have delivered efficiency in the residential market. Further, we appreciate BPA’s dedication to their ResHVAC programs, as discussed in the Draft Action Plan, despite short-term cost-effectiveness challenges. Heat pumps are both a specific and illustrative example of an area where we encourage BPA to consider the impacts of the Inflation Reduction Act (IRA) on the Draft Action Plan. Given ODOE’s leadership role for Oregon on implementing several heat pump and electrification elements of the IRA, we stand ready to assist BPA in this area. Federal and state incentive programs will reduce up-front costs, support contractor workforce training, and can help advance shared priorities for regional stakeholders. In particular, the most efficient heat pumps will not only reduce peak loads, but because of the enhanced up-front incentives and the reduced monthly energy costs, they can also help reduce the energy burden of low-income customers.

Overall, BPA should consider the impact of federal funding more closely in setting its efficiency targets. The Draft Action Plan accurately summarizes the key policy advances relevant to energy efficiency in the Northwest at both the federal and state level. However, it is unclear the extent to which these policy actions were taken into account in setting BPA’s target for energy conservation acquisition in the Action Plan, particularly the new federal rebate programs authorized by the IRA. We encourage BPA to consider the impacts of these recent policy changes more thoroughly.

As noted in the draft, the rebate programs and other funding in the IRA represent a historic investment in energy efficiency. We are excited about the potential of these funds and the benefits they will deliver to Oregon consumers. We are aware that further guidance from the U.S. Department of Energy is needed to fully understand the extent to which new federal rebates can “stack” with BPA-funded programs, however we feel confident that there will be pathways that enable consumers to benefit from a variety of funding sources and ensure efficiency funding is appropriately braided.

BPA’s COU customers have existing energy efficiency programs that are highly accessible to customers, and ODOE is actively working with these partners to deploy federal funding in a way that seamlessly layers these new federal funds with existing local programs.¹² With this approach, we hope to maximize the impact of federal funds for customers of these COUs. Further, IRA programs emphasize serving low- and moderate-income populations, which in Oregon includes many rural households that are served by COUs.¹³ This means that a large amount of the federal investments in energy efficiency may be targeted toward households that receive power from BPA. We encourage BPA to take these additional investments into consideration.

3. Establish specific demand response goals and launch programs to meet goals.

We encourage BPA to commit to more ambitious and specific demand response activities. After reviewing both this Draft Action Plan and the prior Action Plan for the 2016-2021 period, we find evidence of BPA underperforming relative to prior goals, while lacking clear landmarks for progress in the new plan. For example, in the 2016-2021 Action Plan, BPA committed to five goals.¹⁴ Of those goals, BPA succeeded in understanding demand response need and developing in-house experts. However,

¹² Public testimony on HB3166 (February 22, 2023).

<https://olis.oregonlegislature.gov/liz/2023R1/Downloads/PublicTestimonyDocument/53631>

¹³ Climate and Environmental Justice Screening Tool. The White House (November 2022).

<https://screeningtool.geoplatform.gov/en/#3/33.47/-97.5>

¹⁴ Page 108, accessed online: <https://www.bpa.gov/-/media/Aep/energy-efficiency/energy-efficiency-action-plan/2016-2021-bpa-ee-action-plan.pdf>

BPA also committed to facilitating development of a provider base (set of approved demand response providers) and committed to a commercialization plan. This Draft Action Plan makes no mention of those concrete goals and instead sets more general and exploratory objectives, including “exploration” and “monitoring of electrification load impacts.”¹⁵ Modeling from both the Council and BPA’s Resource Program give clear guidance that demand response is an essential component of the least cost portfolio. The 2021 Power Plan selects 300 MW of frequently used demand response products by 2026.¹⁶ BPA’s 2022 Resource Program model selects 436 MW of summer demand response and 283 MW of winter demand response by 2027.¹⁷ These modeling results provide clear objectives, that if not acquired will result in a more expensive system to operate.

Today, Oregon already has valuable, cost-effective, and diverse applications of demand response programs implemented by several electric utilities. The programs and pilots come in all varieties of demand response including:

- Infrequent and “traditional” load shed type programs;
- Passive time-of-use tariffs; and
- Active, direct-load-control with little-to-no advanced warning.

These programs are cost-effective, incorporate equitable outreach and enrollment, and allow consumers to opt-out of events as necessary. By 2023, Oregon’s two largest electric utilities, Portland General Electric (PGE) and Pacific Power (PAC) project 104 MW and 53 MW respectively of summer demand response capacity, and these are forecasted to grow.¹⁸ Combined, PGE and PAC serve 1.5 million customers in Oregon, about half the amount of BPA’s customer base.¹⁹ This means that by 2023, PAC and PGE anticipate demand response resources equal to BPA’s per capita target for 2026 set forth by the 2021 Power Plan.

We recommend that BPA set clear demand response goals. We acknowledge some of the challenges that BPA cited in the Draft Action Plan but believe there is still opportunity for BPA to be more ambitious. BPA can establish the regional infrastructure necessary to support the customers who enter future, long-term contracts with BPA. Specifically, we recommend BPA take the following actions.

3.a. Stand up a joint Conservation Voltage Reduction (CVR) and Demand Voltage Reduction (DVR) program.

Via prior demand response activities, BPA has relevant experience implementing successful CVR and DVR programs and setting those up in relatively short periods of time. Plus, the Council’s 2021 Power Plan and the 2022 Resource Program both call for significant amounts of CVR and DVR in the least cost portfolio. CVR and DVR present a significant opportunity for a blended

¹⁵ Pages 77-80, accessed online: <https://www.bpa.gov/-/media/Aep/energy-efficiency/energy-efficiency-action-plan/2022-2027-bpa-draft-ee-action-plan.pdf>

¹⁶ Ibid, P. 77.

¹⁷ Ibid, P. 78.

¹⁸ PGE Flexible Load Plan Forecasted MW Capacity. P. 6, accessed online: <https://edocs.puc.state.or.us/efdocs/HAD/um2141had163540.pdf>; ADV 1436, based on PAC 2021 IRP. Accessed online: <https://edocs.puc.state.or.us/efdocs/HAU/adv1436hau10313.pdf>

¹⁹ PGE: 912,000 retail customers, <https://portlandgeneral.com/about/info/quick-facts>; PAC: 618,000 retail customers, https://www.pacificpower.net/content/dam/pcorp/documents/en/pacificpower/about/Pacific_Power_Fact_Sheet.pdf; BPA: nearly 3 million people depend on BPA power. <https://www.bpa.gov/about>

product in which DVR is deployed daily during summer and winter seasons where intra-day material price variation exists. Such a DVR product could reduce voltage, within acceptable parameters, during morning and evening peaks, while reducing voltage during midday and overnight periods of low-price and higher concentrations of renewable energy on the grid. Establishing such a program and offering will help the region achieve the least cost, least risk energy system.

3.b. Solicit bids to establish demand response software and platforms that BPA's customer utilities can use to run their own programs.

A similar goal was identified in BPA's 2016-2021 Action Plan, and we believe this is essential for achieving a future, valuable demand response asset. Several large Oregon electric utilities have successfully completed requests for proposals (RFPs), in which they've solicited competitive bids on the software and services necessary to support distributed demand response across multiple sectors including irrigation, commercial and industrial, transportation, and residential. Many companies exist in this space that offer ability to connect and operate demand response programs with a range of connected technologies such as thermostats/HVAC, water heaters, battery energy storage, and electric vehicles.

We realize many of the smaller utilities that BPA serves may not have the resources to conduct and operate the competitive solicitations or the implementation directly with vendors. Therefore, similar to BPA's role with energy efficiency, BPA can act as the regional infrastructure by establishing trusted relationships and cost-effective services that enable successful implementation by any BPA utility customer.

3.c. Establish mechanisms for time-of-use pricing in 2028 contracts.

Time-based pricing can successfully shift demand into less constrained and less expensive hours by using a price signal. For example, Portland General Electric operates a Peak Time Rebates Program and a Time-of-Day Pilot in which they have enrolled by 2023, 19.9 MW and 2.6 MW of demand reduction respectively.²⁰ BPA should consider updates to rate structures which reflect the time-based impacts to costs and emissions of electricity consumption. BPA's current contracts effectively protect their consumer-owned utility (COU) partners from price volatility in electricity markets. We fully support efforts to keep ratepayer bills low and simultaneously recognize that there is a need for alignment on how to cost-effectively use regional resources. Time-of-use rates are one of several tools that help align energy use with market pricing and that reward consumers with even lower rates for prioritizing their energy use during less expensive hours. Without an incentive structure to shift consumption away from peaks, BPA runs the risk of acquiring expensive power to meet COU needs. In the short term, COU ratepayers may be insulated from this impact, but the dynamic adds long term risk to BPA and their utility customers.

BPA's history of success gives us confidence in BPA's ability to operationalize demand response based on their institutional success in standing up demand response programs of all scales. In the early 2000s, BPA operated a multi-year demand response program through BPA Power, which enrolled 850 MW of

²⁰ Flexible Load Multi-Year Plan September 2022 Update. Portland General Electric. Accessed online: <https://edocs.puc.state.or.us/efdocs/HAD/um2141had163540.pdf>.

curtailable load, mostly large commercial and industrial loads.²¹ The program delivered net savings of \$2.5 million from 2000 to 2002, during the energy crisis—a period of high uncertainty.²²

Further, BPA’s demand response successes extend beyond the curtailing of large loads. BPA has successfully implemented demand response programs to resolve acute needs with their customer utilities. In a non-wires project to avoid new transmission to Orcas Island, BPA and Orcas Power & Light Cooperative successfully operated a demand response program mostly targeting residential water heating and HVAC loads that saved a net \$6 million to \$23 million over six winters.²³

4. Consider how underperformance on acquiring additional energy efficiency and demand response may impact BPA’s customers and the region as a whole.

The Federal Columbia River Power System, for which BPA markets the electricity, is the region’s most valuable decarbonization asset. Oregon’s largest electric utilities are required to decarbonize their electricity supply and meeting the requirements of HB 2021 requires regional coordination and relies on the services of BPA’s systems including electricity generation, capacity, and transmission. Additionally, electrification among BPA’s customers spurred by state and national public policy, climate change driven pressures on hydro availability and timing, and increased market price volatility all raise the risk of cost pressure for BPA customers. In the Draft Action Plan, BPA, “does not anticipate a need for peak load reduction through the mid 2030’s.” We believe this view is short-sighted, considering the regional needs and pressures in the next decade. We understand the modeling constraints leading to the conclusion, but we encourage BPA to think and act regionally, placing significant value on risk mitigation, when it comes to efficiency and demand response.

BPA’s system may not forecast transmission and capacity constraints by 2030, but many other regional utilities do. The beginning of this phenomenon is already being seen in general rate cases and during integrated resource plans (IRPs), in which the avoided costs of decarbonized energy, capacity, and deferred transmission and distribution investments are all increasing. Every aMW of energy efficiency adds value to BPA’s utility customer, protecting them from exposure to volatile market prices and creating the opportunity for regional sales to defray the cost of purchasing power when hydropower is not available. This also frees up valuable clean, firm power to support regional load growth and economic prosperity, particularly in rural counties served by BPA. Every MW of demand response not acquired by BPA during peak events limits capacity and transmission that all regional utilities must compete for and pay a scarcity price premium to access. In low water conditions, that could include BPA customers.

The region relies on BPA’s firm and flexible hydro resources, which is even more valuable to the region now in reducing the carbon intensity of its supply while adapting to new climate extremes. We encourage BPA to increase energy efficiency and demand response goals to embrace this regional role and to think long-term. In doing so, BPA will help its utility customers reduce energy costs by investing in

²¹ Demand Response Potential in Bonneville Power Administration’s Public Utility Service Area. BPA. March 19, 2018. P. 13, accessed online: <https://www.bpa.gov/-/media/Aep/energy-efficiency/technology-demand-response-resources/180319-bpa-dr-potential-assessment.pdf>

²² Ibid, p. 13.

²³ Ibid, p. 12.

more efficiency and demand response. It will also reduce the risk of price volatility and regional scarcity that can be difficult to insulate native load from.

Conclusion

We recommend BPA embrace the opportunity presented by the market momentum, the energy transition, and the IRA to set higher and more ambitious energy efficiency and demand response goals. As evidenced by the high electrification scenarios, there is little risk to over-acquiring efficiency and demand response in the near and long-term. BPA's effort in raising its goals and targets will also help them manage risk in a future with higher and more variable costs.

We appreciate the opportunity to comment on BPA's Draft Energy Efficiency Action Plan. Thank you for considering our comments.

Sincerely,



Janine Benner
Director, Oregon Department of Energy
550 Capitol St. NE, 1st Floor
Salem, OR 97301



Megan Decker
Chair, Oregon Public Utility Commission
201 High St SE#100
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March 17, 2023

John Hairston
Administrator
Bonneville Power Administration
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jlhairston@bpa.gov

RE: Draft 2022-2027 Energy Efficiency Action Plan

Dear Administrator Hairston:

On behalf of the Columbia River Inter-Tribal Fish Commission, we are pleased to provide these comments on BPA's Draft 2022-2027 Energy Efficiency Action Plan. BPA and its customers have been leaders in promoting energy efficiency in the Pacific Northwest, and these efforts have provided significant benefits to consumers, the economy, and fish and wildlife.

We urge BPA to maintain and expand its energy efficiency efforts. The proposal in the draft to significantly reduce BPA's programs is not consistent with the Administration's Climate Action Plan, will reduce benefits to consumers, result in more greenhouse gas pollution, and hurt fish and wildlife and other tribal resources.

Background

The Columbia River Inter-Tribal Fish Commission (CRITFC) was created by the Nez Perce, Umatilla, Warm Springs, and Yakama tribes in 1977. CRITFC provides technical, policy coordination and enforcement services to the four tribes. More than 40 years ago, CRITFC assisted its member tribes in developing the provisions for the Northwest Power Act's energy planning and fish and wildlife requirements. Since then, it has supported its member tribes desire for improving the condition of the Basin's anadromous fish populations.

Recent dramatic reductions in Columbia Basin salmon populations and the West Coast energy planning environment prompted CRITFC to undertake a second major revision to its Energy Vision for the Columbia Basin. The CRITFC Energy Vision includes recommendations intended to protect the tribes' treaty-secured fish, wildlife, cultural and other resources.

The first Tribal Energy Vision in 2003 included recommendations to avoid another energy shortage like that of 2001, which damaged fish and wildlife and the economy. The second Energy Vision in 2013 focused on reducing hydroelectric dam impacts on salmon populations and decreasing costs for consumers.

The 2022 Energy Vision takes a holistic approach to meeting energy needs during this time of energy transition while protecting tribal resources. It includes recommendations to increase energy efficiency, improve load management and energy storage, strategically site new renewable resources, ensure resource adequacy and address transmission availability and reliability. These recommendations will reduce peak loads and other pressures on the power system while improving reliability and reducing costs. They will also protect the resources that are vital to the tribes' economies, culture, and religion. A copy is available at <https://critfc.org/energy-vision/>.

The 2022 Energy Vision includes specific recommendations; relevant excerpts are attached to these comments.

Comments on BPA Energy Efficiency Draft Plan

The Columbia River Inter-Tribal Fish Commission recommends that BPA increase its targets for energy efficiency to maintain the level of activity called for in the Seventh Power Plan (581 average megawatts identified as BPA's portion). We offer the following specific comments and the excerpts from the Energy Vision provide more details and analysis.

1. Energy efficiency is a low-cost resource that has saved Pacific Northwest consumers over \$75 billion dollars—these savings are growing at about \$5 billion per year and it does not make sense to reduce these benefits.
2. Energy efficiency improvements are inherently fish and wildlife friendly. They require no “steel in the ground” in undisturbed landscapes and will not damage tribal cultural resources. They do not create any greenhouse gases.
3. Energy efficiency provides benefits to the power system and salmon. The energy savings are matched to loads and provides more saving during peak hours in the winter and summer. This reduces the need for peak energy resources and river fluctuations that hurt salmon migration.
4. Reducing energy efficiency programs is not consistent with the Administration's Climate Action Plan. BPA should continue to be a leader in aggressive actions to address the climate crisis.
5. Energy efficiency is a proven, reliable resource. The region has 45 years of experience delivering these programs. The region has saved 7,200 average megawatts since 1978 through energy efficiency programs, codes, and standards. Energy efficiency operates 24/7, unlike wind and solar energy resources they are generally not subject to variations in weather. Unlike thermal resources they are immune from fuel price increases.
6. The U.S. Energy and Employment Report shows that over 100,000 people are employed in our region working with energy efficiency at utilities, the Northwest Energy Efficiency Alliance (NEEA), the Energy Trust of Oregon, state agencies, and at the many trade allies

and contractors that work to implement programs and deliver efficiency services.¹ Reducing these programs will threaten the businesses and jobs in this industry.

7. The tax credits and incentives in the recently enacted Inflation Reduction Act will increase the demand for these programs.
8. Energy efficiency and conservation can benefit low-income populations including tribal peoples. The IRA includes billions of dollars for tribal governments to implement retrofits of tribal housing (page 12 of your draft). The BPA Action Plan should have specific provisions for tribal programs to address the unique circumstances in this sector. As we have stated before, tribal housing often requires additional repairs for energy efficiency, solar, and battery technologies to be effective. These efforts need to be expanded not reduced.
9. The BPA action plan should specifically include heat-pump water heaters, thermal-mass of buildings; and pilot programs to promote net-zero buildings.
10. BPA did not meet the Council's energy efficiency goals under the Seventh Power Plan it needs to fill that deficit and maintain programs. "BPA and its customers delivered 537.5 aMW of energy savings over the Seventh Power Plan, nearly meeting the plan's overall goal of 580.7 aMW." (Page 18 of BPA draft action plan). BPA starts with a 43 average megawatt deficit in the meeting the Council's prior goals and now proposes to reduce its goal to 300 average megawatts through 2027 (page iii of the draft action plan).
11. BPA references changes in cost effectiveness for energy efficiency (page 7 of draft action plan). CRITFC provided detailed comments to the Council that its analysis on this issue was flawed. The Council assumed unrealistic river operations that violated current ESA requirements and did not address future structural and operational changes at the federal dams. These faulty assumptions reduced the costs of integrating wind and solar and made less energy efficiency cost competitive. The Council promised to review its analysis but has so far failed to do so.
12. To close on a positive note, we support BPA's inclusion of demand response. This was a significant recommendation in the Energy Vision—the region needs to control loads to better match the availability of renewable resources. We urge BPA to provide leadership on this important issue.

We have provided excerpts from the CRITFC Energy Vision that describe the recommendations for BPA related to our comments. The excerpts also provide more technical information to support our recommendations.

Sincerely,



Aja K. DeCoteau
Executive Director

¹ 2020 Report: <https://www.usenergyjobs.org/>.

Cc: Jennifer Granholm, Secretary of Energy
Elena Kazarov, Long Term Energy Efficiency Planner, eakazarov@bpa.gov
David Conrad, DOE, Office of Indian Affairs
Sara Gonzales-Rothi, Council on Environmental Quality

Excerpts from the Energy Vision for the Columbia River Basin Adopted by the Columbia River Inter-Tribal Fish Commission on February 15, 2022

Summary

CRITFC has provided excerpts from the Energy Vision for the Columbia River Basin related to the comments on BPA's Energy Efficiency Action Plan. Copies of the Energy Vision were provided to BPA and are available at <https://critfc.org/energy-vision/>.

A major theme of the Energy Vision is to ensure that renewable resources in combination with increased storage, reductions in peak demand, and increased energy efficiency can provide clean, adequate, reliable, and affordable electricity, support the restoration of healthy, harvestable salmon populations, and prevent future damage to salmon and steelhead and other tribal resources caused by the electrical system.

The Northwest is at a critical crossroad, facing challenges to the health of the planet and the future of iconic fish and wildlife. These challenges are especially important to tribal resources that have sustained tribal people since time immemorial.

One path leads to affordable, carbon-free energy that harmonizes with the ecosystem. This future would prioritize energy efficiency, renewable resources, new storage technologies, reductions in peak loads, and other strategies that are compatible with the needs of fish and wildlife. These efforts would reduce the impacts of renewable resource projects and transmission lines on tribal resources and save consumers money.

The other path creates conflicts between renewable resources and tribal resources and results in higher costs for consumers.

Choosing the first path will require the courage to act, common-ground solutions, and a commitment of resources to accomplish the hard work ahead. It will also require the humility to periodically evaluate and adjust course based on new information and understanding.

CRITFC and its member tribes are committed to working with other regional interests to lead the region to a brighter and healthier future. Affordable and reliable power is important to regional families and businesses, tribal and non-tribal. The true wealth of our region begins with the health of our rivers, fish, and the ecosystem they support, which is our culture, history, and future.

Excerpts from the Energy Vision for the Columbia River Basin

3.3. Reduce Peak Demand

Controlling energy demand during times of peak energy usage needs to be a priority for the region. Electric supplies must meet energy demand every second of the day. Electricity demand peaks in the mornings as individuals and business begin their day to heat or cool buildings and in the late afternoons when people come home and need to heat or cool their houses, prepare

dinner, and turn on other appliances. These daily peaks get larger on very cold or very warm days because it takes even more energy to heat and cool buildings.

Cutting peak demand will reduce damage to salmon and steelhead. River fluctuations disrupt migration and increase exposure to predators. Reducing peak demand will also reduce greenhouse gas emissions from thermal power plants.

There are quantifiable benefits to consumers from reducing peak loads. For the electrical system, lower demand on peaks translates into fewer capital resources that are needed to serve loads. The grid can serve the same total energy needs with fewer generating plants and a smaller investment in new transmission and distribution lines over time if peaks are lowered. Line losses and ancillary services can also be reduced with lower demand.

Appendix E [of the Energy Vision] describes the high cost of the transmission and distribution system associated with meeting peak demand. For example, serving the highest 600 hours during a year (out of 8,760 hours) is estimated to cost between \$0.50 and \$1 per kilowatt hour, compared to the average costs residential customers pay of about \$0.08 to \$0.12 per kilowatt hour. These high transmission and distribution costs get averaged into everyone's electric bill.

The analysis of the cost effectiveness of energy efficiency, storage, and other demand response actions should incorporate more accurate costs for the transmission and distribution systems needed to meet peak loads. The Council's analysis for the draft 8th Power Plan appears to use an average rate for transmission in the region of \$31 per kilowatt per year and the average distribution cost of \$26 per kilowatt year² in calculating the benefits of deferring construction. CRITFC's analysis estimates that the transmission and distributions costs of serving the top 600 hours (out of 8760 per year) is between \$80 and \$100 per kilowatt year.³ Using these higher costs when calculating the value of deferring peak loads would likely improve the cost effectiveness of actions that reduce peak loads.

Reducing peak demand would also defer or eliminate the need for some new transmission and distribution systems. For example, BPA and four Northwest investor-owned utilities spent more than \$8 billion on transmission and distribution systems over the past five years. Future expansions will add significant costs and can adversely affect sensitive resources along power line routes. See Section 3.10 and Appendix E for more information on transmission and distribution costs.

As discussed above, the region is currently valuing the "flexibility" of the hydroelectric system at zero, but we know the changes projected for the system will have devastating effects on fish and wildlife. The evaluation of programs to reduce peak demand must address these impacts on fish and wildlife and other tribal resources.

Adopting technologies that allow for peak load control may have significant advantages for fish passage. Once in place to control peak loads, it is a small step to use them to shape loads on a

² Northwest Power and Conservation Council memorandum *Updated Transmission and Distribution Deferral Value for the 2021 Power Plan*, March 5, 2019.

³ Draft *Energy Vision for the Columbia River Basin*, Appendix E.

continual basis. Shaping loads could then translate into reducing energy demand pressures that compete with salmon and steelhead.

By 2030, according to one estimate, the United States will have nearly 200,000 megawatts of cost-effective load flexibility potential, equal to 20% of estimated U.S. peak load. That is three times the existing demand response capability, with savings for consumers from avoiding utility system costs estimated at \$15 billion annually. This flexibility, largely by use of technology for managing energy use in buildings, can help cost-effectively address several grid challenges, from growth in peak demand, to higher levels of variable renewable energy generation, to increasing electrification of transportation and other loads.⁴

As energy systems acquire the general ability to control loads, we can envision a time when loads can be shaped to harmonize with electricity supplies and the hydro system configurations and operations needed for fish and wildlife.

Several utilities have experienced flat or declining peak winter loads, while their summer peak loads have increased slightly.⁵ The region needs to build on these efforts to reduce future peak loads. These efforts will reduce costs, improve salmon survival, and improve the reliability of the electric system.

3.3.1. Energy Efficiency Reduces Peak Demand

Recommendation 4: The Council, BPA, and utilities should include the peak savings and reductions in transmission and distribution benefits in calculating the capacity value of energy efficiency programs.

Energy efficiency programs continue to be among the lowest-cost ways to meet future energy needs. They have the added benefit of reducing peak demand. Extensive regional experience shows that balanced energy efficiency portfolios disproportionately save electricity during peak periods. A well-insulated home or office requires less heat in the winter and less air conditioning in the summer. Energy efficiency is “fish friendly”. It is the energy resource that has the least potential to damage tribal resources. The table below shows the NPCC analysis of the energy efficiency savings between 2016 and 2019. It shows that the total savings were 857 average megawatts. These programs resulted in 1,683 megawatts of peak savings in the winter and 1,042 megawatts in the summer.

⁴ Hledik, R., A. Faruqui, T. Lee, and J. Higham. 2019. The Brattle Group. “The National Potential for Load Flexibility: Value and Market Potential Through 2030.”

https://brattlefiles.blob.core.windows.net/files/16639_national_potential_for_load_flexibility_-_final.pdf.

⁵ For more information, see Appendix E.

Capacity Savings by End Use - All Sectors Combined		
Year	(Multiple Items)	
Row Labels	Sum of Winter MW Savings	Sum of Summer MW Savings
Lighting	698.06	445.43
HVAC	519.19	145.70
Whole Bldg/Meter Level	185.24	133.75
Unknown	59.56	47.57
Process Loads	47.83	49.15
Electronics	45.71	37.14
Water Heating	44.68	25.12
Refrigeration	40.84	44.73
Motors/Drives	22.12	21.13
Compressed Air	14.88	14.77
Utility Transmission System	1.62	1.57
Food Preparation	1.31	1.23
Facility Distribution System	0.97	1.00
Utility Distribution System	0.67	2.91
Irrigation	0.60	70.97
Grand Total	1,683.28	1,042.17

These programs have the added benefit of matching electric energy growth. As the number of new homes and business are built and new efficient appliances are added, the energy and capacity savings increase.

The Council’s draft 8th Power Plan⁶ assumes a total additional conservation potential of 5,103 average megawatts in 2041 that “saves 9,105 megawatts of summer peak and 8,511 megawatts of winter peak.”⁷

The Lawrence Berkely Laboratory collected data on costs, energy savings and peak demand savings for electricity efficiency programs for 36 investor-owned utilities and other public agencies in nine states (Arizona, Arkansas, California, Colorado, Illinois, Massachusetts, Maryland, New York, and Texas) for 2014 to 2017.⁸ The savings during the study period averages \$0.029/kilowatt-hour (kWh) and varies by a factor of three (\$0.013/kWh to \$0.039/kWh) across the nine states. The report states:

Based on this initial study, electricity efficiency programs appear to be a relatively low-cost way for utilities to meet peak demand, compared to the capital cost of other resources (Lazard 2018; EIA 2019) that can be used to meet peak demand. However, many energy efficiency technologies, such as more efficient light bulbs, are “passive” and are not dispatchable. In such cases, efficiency resources do not provide the same services as a natural gas peaking turbine, making comparisons between these resources complex. At the same time, our results suggest that electricity efficiency programs that reduce peak demand merit strong consideration by utilities and regional grid operators.

⁶ Please note that the Energy Vision was adopted before the Eighth Power Plan.

⁷ https://www.nwcouncil.org/2021powerplan_conservationpotential.

⁸ <https://emp.lbl.gov/publications/peak-demand-impacts-electricity>.

Further, “active” efficiency measures such as lighting controls enable active management of efficiency resources, offering additional grid services.

These cost-effectiveness calculations should also consider the very high costs of transmission and distribution systems that serve these peak loads as discussed above and in Section 3.10 and Appendix E.

3.3.3. Demand Response and Load Management

Integrating renewable resources with the region’s electricity needs will require better management of electricity loads. This section describes several important actions.

A. Load Management.

Recommendation 6: Utilities should use demand response to manage system loads, reducing peak loads, ensuring reliability by encouraging customers to reduce demand during peak periods or shift loads from peak to off-peak hours.

Utilities and BPA should pursue actions to manage loads by shifting them to times when renewable power is available and to minimize impacts on fish and wildlife. These actions will reduce costs and environmental impacts.

The Council’s 7th Power Plan (2016) identified significant potential to reduce or shift peak demands. It found:

The Seventh Power Plan assumes the technically achievable potential for demand response in the region is over eight percent of peak load during winter and summer peak periods by 2035. This assumption is based on the Demand Response Program Potential Study commissioned by the Council and feedback from regional stakeholders. This figure represents approximately 3,500 megawatts of winter peak load reductions and nearly 3,300 megawatts of summer peak load reductions by the end of the study period. In addition, the study identified additional potential for summer and winter demand response that could be available by the end of the study period to provide for load and variable generation balancing services.⁹

The Council’s draft 8th Power Plan significantly reduced the estimates for demand response, primarily because it was not as cost effective as renewable resources.

The Council recommends utilities examine two demand response products: residential Time-of-Use (TOU) rates and Demand Voltage Regulation (DVR) as a means to offset the electric system needs during peaking and ramping periods and to reduce emissions. A given utility’s time of need may differ from the region’s, but these products are likely still

⁹ nwcouncil.org/7thplan, page 14-2.

part of a cost-effective strategy. Our assessment shows about 520 megawatts of DVR and 200 megawatts of TOU available by 2027.¹⁰

As discussed elsewhere, the flawed assumption that the hydroelectric system can integrate all the new renewable resources at low or no cost creates an artificially low cost that crowds out resources like demand response. The analysis of these measures should fully consider the environmental benefits and significant cost savings from reducing the need for transmission and distribution to serve peak loads. Including an accurate accounting of the environmental impacts associated with the “steel in the ground” these costs of renewable resource and transmission construction is likely to make more demand response and related measures cost effective. Viewed from a broader perspective, the federal and state environmental policies, such as carbon reduction and endangered species preservation, are not limited by cost-effectiveness thresholds.

CRITFC urges the Council to expand demand voltage reduction and time of use programs and consider other demand response programs as alternatives to batteries or other storage devices. For example, innovators like OhmConnect are marketing their free demand response assistance as a way of reducing energy blackouts in California.¹¹

Utilities should pursue demand response in residential and commercial buildings and other sectors. For example, Idaho Power and PacifiCorp are running demand response programs for air conditioning cycling and irrigation pumping. These programs are designed to reduce summer peak demands.

B. Electric Vehicles

Recommendation 7: Automobile manufactures should include systems that allow electric vehicles to schedule charging during off-peak periods.

Electric cars and plug-in hybrid cars should be a win-win-win for consumers, the environment, and salmon. Electric vehicles have very low operating and maintenance costs, reduce greenhouse gases and other air pollution, and reduce dependence on foreign oil. If owners charge car batteries at times that help integrate renewable resources and improve salmon survival the region can achieve these benefits.

Auto manufacturers should provide scheduling software that can control when the cars charge and promote its use (these systems are already standard on some electric vehicles). If timers are not incorporated and used, drivers might start charging when they get home from work and add to peak energy demand. This would make things worse for consumers, the power system, and salmon.

Recommendation 8: Utilities should integrate electric vehicle charging and batteries into the power system to reduce costs to consumers and the power system and improve salmon migration.

¹⁰ Draft 2021 Power Plan, page 6-41.

¹¹ <https://www.ohmconnect.com/about-us>.

Utilities should install smart meters that would charge electric vehicles when there is low-cost surplus power and use electricity from those vehicles' batteries during peak periods. In these "vehicle to grid" systems, a electric vehicle owner could get a discount on the electricity, and this could be a cost-effective way to meet peak and provide storage at a lower-cost than utility-scale batteries.¹² This approach could also reduce the need for new transmission and distribution lines. These efforts will require improvements in information sharing so charging can be scheduled during the optimum time to reduce environmental impacts.

Electric vehicles should also be integrated with on-site solar systems to charge vehicles while the sun is shining and use their batteries when the sun goes down or during extended shortages. For example, the 2022 Ford F-150 Lightning battery can power an average home for about three days.¹³

Recommendation 9: BPA and utilities should work to improve the efficiency of electric vehicles.

An analysis by Amory Lovins concludes:

Efficiency gains achievable by integrative design of whole light-duty vehicles can be severalfold larger, yet cheaper, than those predicted by canonical incremental technology-by-technology analyses. This means that US and international efficiency standards rest on overly conservative analyses; electrification can be cheaper and faster than conventionally assumed; and the efficiency potential predicted by groups like the US National Research Council and assumed in climate-mitigation assessments need major revision, aided by evaluation processes that better assess whole-vehicle design and early signals from concept vehicles.¹⁴

Current electric vehicles have high EPA miles per gallon (electric equivalent) ratings compared to internal combustion engines. For example, a Tesla Model 3 has a combined rating of 142 MPGe and a Hyundai Ioniq is rated at 133 MPGe.¹⁵ Increasing the efficiency several fold would stimulate the adoption of these vehicles and reduce impacts on the electricity system.

C. Hot Water Heaters

Recommendation 10: the Council, BPA, and utilities should fund the incremental costs of heat pump water heaters to stimulate the adoption of this technology.

Heat pump water heaters are more efficient than conventional systems and provide both energy and capacity savings in new houses. The conversion of existing houses to heat pump water

¹² Clean Vehicles as an Enabler for a Clean Electric Grid: <https://iopscience.iop.org/article/10.1088/1748-9326/aabe97>.

¹³ <https://www.motortrend.com/news/2022-ford-f-150-lightning-electric-truck-charging-generator-power/>

¹⁴ Lovins, A., "Reframing Automotive Fuel Efficiency," 2020, <https://doi.org/10.4271/13-01-01-0004>.

¹⁵ <https://www.fueleconomy.gov/feg/evsbs.shtml>.

heaters will also provide benefits. The Council's 7th Power Plan estimated that cost-effective conversions from electric resistance to heat pump water heaters would reduce peak demands by 1,250 megawatts during winter (January) and just over 1,850 megawatts in summer (August) by 2035. These systems come with built-in demand reduction capability to help reduce peak loads.

Utility incentive programs would increase market penetration and likely drive down costs. This was the experience with "new technology" such as six-inch wall insulation and R-50 windows in the 1st Power Plan in 1983. BPA and utilities paid the added costs of these measures, suppliers started stocking them, manufacturers mass produced them, subcontractors learned to install them, and the costs came down.

Recommendation 11: Utilities and BPA should develop and fund programs to schedule when water heaters operate.

Time of day water heating technology is commercially available. Water pre-heated during the middle of the night, can last through the morning peak use period. This technology can be used in today's hot water heaters, and can be made more effective in replacement tanks, by increasing the size of the water tanks. More sophisticated and easy to use demand-response enabled equipment is also coming onto the market, thanks to state-level standards passed in Oregon and Washington for CTA-2045 compliant water heaters for the residential market. To get the benefits of the peak reduction potential, however, utilities will need to develop customer-centric demand response programs.

3.3.4. Increase Electricity Storage

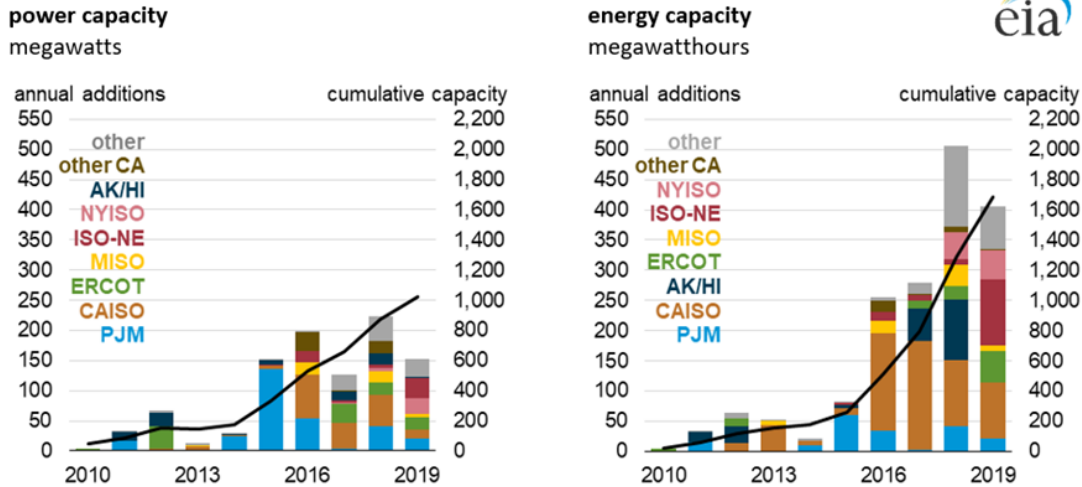
Integrating renewable resources with the region's electricity needs will require significant energy storage. This section describes several important actions to secure energy storage by fish friendly means.

A. Utility-Scale Batteries

Recommendation 12: BPA and utilities should implement utility-scale battery projects.

The chart below from the U.S. Energy Information Agency shows the expansion of utility-scale batteries between 2010 and 2019.

Figure ES1. Large-scale battery storage capacity by region (2010–2019)



Source: U.S. Energy Information Administration, 2019 Form EIA-860, *Annual Electric Generator Report*

The growth of these batteries is expanding quickly as costs come down.¹⁶ California will have 3,000 megawatts of utility-scale batteries to store electricity to meet peak demands online by the end of 2021. These lithium battery systems store power from solar plants during the day and can provide four hours of electricity when the sun sets.

New battery technologies, such as those based on iron flow chemistry, are on the horizon that may reduce the need for the use of precious metals in energy storage.¹⁷ An iron flow battery has six-to-twelve-hour storage cycles, are scalable to 2000-megawatt hour systems, and have a 25-year operating life.¹⁸ These and other technologies can provide reliable energy storage and do not require the rare earth minerals of lithium batteries. The WECC projections show approximately 200,000 megawatts of solar and battery projects by 2045.

These batteries could help address some reliability and renewable resource integrations issues in the Northwest. Winter peaks often last more than twelve hours and will likely require a combination of storage, improved efficiency measures, demand management, and other strategies to serve these electricity needs, especially in low-water years (please see Section 3.7 on Resource Adequacy).

Northwest utilities should review the experience with these batteries and begin construction of systems at strategic locations. For example, these batteries could be located near load centers or near major generation and transmission hubs to reduce the transmission and distribution costs.

The Council’s draft 8th Power Plan discusses the role of batteries but does not call for actions to promote their use. It is CRITFC’s understanding that the Council did not find them cost effective compared to other alternatives. As discussed elsewhere, the Council is assuming the hydroelectric dam reservoirs can be used as a huge battery at low or no costs (except to salmon). This flawed assumption prejudices the cost effectiveness of storage technologies that do not

¹⁶ See Oregon Department of Energy 2020 Biennial Energy Report [Utility Scale Storage Technology Review](#).

¹⁷ <https://www.bloomberg.com/news/articles/2021-09-30/iron-battery-breakthrough-could-eat-lithium-s-lunch>.

¹⁸ <https://essinc.com/iron-flow-chemistry/>.

increase the mortality of migrating salmon. It is also contrary to the Northwest Power Act's mandate for due consideration to environmental impacts in the Council's energy planning processes.¹⁹

B. On-Site Batteries

Recommendation 13: BPA and utilities should implement incentive programs to expand the use of on-site batteries.

On-site generation and home and business storage systems are becoming commercially available. For example, Tesla has a Solar Roof and Powerwall system to generate and store electricity for a house. The Powerwall also tracks National Weather Service alerts for severe weather and fully charges the battery in case of a forecasted power outage. The system also has time-based controls to use stored power when grid costs are expensive and net metering credits for excess solar energy sent to the grid.

The Oregon Legislature passed a bill in the 2021 session to allocate an additional \$10 million for the solar and storage rebate program to help bring down the costs of these systems. The rebates may cover up to 40 percent of the net cost for a residential system installed for a customer that is not considered low- or moderate-income, up to 60 percent of net cost for a low- or moderate-income customer, and up to 50 percent for a low-income service provider.²⁰ Other states should establish such programs.

The chart below, prepared by Lazard Bank, shows the unsubsidized levelized cost of storage alternatives.²¹

¹⁹ For more details, see CRITFC's letters to the NPCC posted at https://critfc.org/tribal-treaty-fishing-rights/policy-support/public-documents/?topic_area=energy-vision.

²⁰ <https://www.oregon.gov/energy/Incentives/Pages/Solar-Storage-Rebate-Program.aspx>.

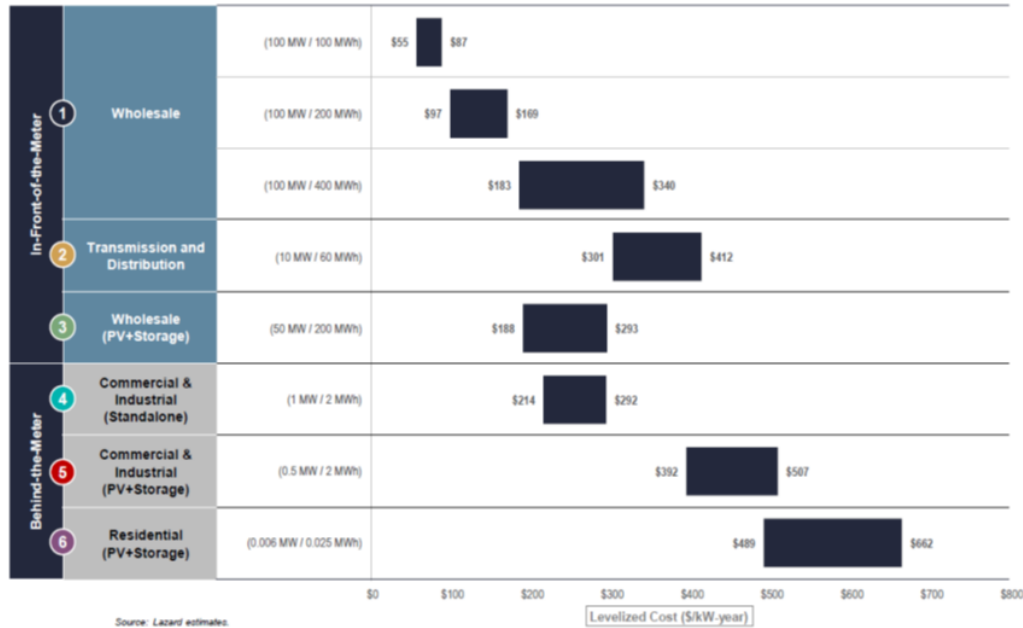
²¹ Lazard's Levelized Cost of Storage Analysis – Version 6.0, Lazard's Bank, 2020, page 5.

LAZARD

II LAZARD'S LEVELIZED COST OF STORAGE ANALYSIS V6.0

Unsubsidized Levelized Cost of Storage Comparison—Capacity (\$/kW-year)

Lazard's LCOS analysis evaluates storage systems on a levelized basis to derive cost metrics based on nameplate capacity



C. Space Heating and Cooling Stored in Buildings

Recommendation 14: BPA and utilities should fund programs to reduce peak loads using the thermal mass of buildings.

Heating and cooling effects can be stored in building mass, including mass that may have been added for this specific purpose. The technique of using thermal mass (*e.g.*, properly located rocks, concrete, or other material) to store heat and cold is ancient but may be coming back in style as Northwest universities include energy efficient building design courses in their renewable energy engineering programs.²² Adding mass to residential buildings is being tested in regional pilots. Storage of heating and cooling in buildings to meet these needs through peak periods has possibilities for around the clock applications similar to hot water storage.

Commercial buildings generally have a high mass, so they can be pre-heated and pre-cooled by using off-peak energy prior to the buildings being occupied in the morning. The potential for saving on transmission and distribution, generation, line losses, and ancillary services is very large.

With appropriate incentives for building owners, web-based thermostat controls can enable existing buildings to store energy for heating and cooling. These controls allow a utility dispatcher to pre-heat and pre-cool buildings thereby shifting the power consumption to an off-

²² The University of Oregon has created an Energy Studies in Buildings Laboratory with programs in Eugene and Portland employing and educating students in building designs that address climate change needs of society. [See https://esbl.uoregon.edu](https://esbl.uoregon.edu). The Oregon Institute of Technology was the first university in the nation to offer a renewable energy engineering degree including coursework in energy efficient building design. [See http://catalog.oit.edu/preview_program.php?catoid=9&pooid=2030](http://catalog.oit.edu/preview_program.php?catoid=9&pooid=2030).

peak period. This is an example of using the thermal mass already in the building as a storage medium. Once the platform that enables these web-based controls is in place, all energy devices using these controls could be operated for energy management purposes.

3.4 Energy Efficiency Resources

Energy efficiency programs reduce both peak demands and year-round energy needs. Energy efficiency has been proven as a reliable resource in the Northwest with costs that are less than half the cost of new gas-fired power plants. These programs save consumers money and reduce the emissions of pollutants that cause climate change. They are fish compatible.

Energy efficiency also reduces the region's seasonal storage needs because energy savings closely track energy demand. The "flexibility" of energy efficiency is extremely valuable. Energy efficiency programs have no adverse effects on fisheries or other tribal resources.

According to the Council, the region has saved 7,000 average megawatts since 1978 through energy efficiency programs, codes, and standards. That is enough electricity to serve more than 5 million homes. The U.S. Energy and Employment Report shows that over 100,000 people are employed in our region working with energy efficiency at utilities, the Northwest Energy Efficiency Alliance (NEEA), the Energy Trust of Oregon, state agencies, and at the many trade allies and contractors that work to implement programs and deliver efficiency services.²³

These energy efficiency programs have saved northwest consumers over \$70 billion dollars and those savings are growing at about \$5 billion per year. The NPCC data shows that more than \$8.5 billion has been spent by northwest utilities on energy efficiency programs—a significant portion of these funds were spent in the region, providing jobs and economic activity.

3.4.1. Secure All Cost-Effective Energy Efficiency.

Recommendation 17: The Council should increase the conservation targets in the 8th Power Plan to maintain at least the level of activity called for in the 7th Plan and work with BPA and utilities to try to exceed the targets.

In the draft 8th Power Plan, the Council recommends "that the region acquire between 750 and 1,000 average megawatts of energy efficiency by the end of 2027 and at least 2,400 average megawatts by the end of 2041."²⁴ These energy efficiency targets are significantly lower than the 7th Power Plan when the Council estimated that over 4,000 average megawatts of conservation could be acquired cost-effectively over the 20-year planning period.

One reason for the Council's decreased recommendation appears to be that solar and wind energy costs are lower than some of the energy efficiency. These lower renewable resources costs include the Council's assumption that this energy can be integrated using the regions' dams

²³ 2020 Report: <https://www.usenergyjobs.org/>.

²⁴ Draft 2021 Power Plan, page 5-29.

and reservoirs at little or no cost. This planning assumption is not accountable to the reality of dam operations on the Columbia River System.

It is also CRITFC's understanding that part of this reduced conservation potential is because LED lights are already in wide use and the Obama Administration adopted 49 new federal standards that are capturing some of the 7th Plan's targeted savings, so the baseline load forecast for 7th plan is lower. If this is the case, the Council should clearly communicate this change is the baseline and that new conservation measures are in addition to this baseline.

The CRITFC recommendation to maintain at least the level of activity for energy efficiency programs called for in the last plan are based on several factors:

First, we understand that the Council will be evaluating alternative river operations that we believe are likely to increase the costs of integrating solar and wind energy when compared to energy efficiency. Maintaining the program levels from the 7th Power Plan would avoid slowing energy efficiency efforts that the region may regret.

Second, the Council's cost-effectiveness calculations should include the very high peak energy costs of transmission and distribution systems. CRITFC's analysis from 2013 showed the transmission and distribution costs of meeting the highest 15 percent of peak energy needs ranged from 79 cents to \$1.19 per kilowatt-hour. Energy efficiency and other behind-the-meter actions avoid those high transmission and distribution costs. These avoided costs must be duly accounted for in cost-effectiveness determinations.

Third, the Council notes that the energy conservation industry employs 100,000 people. Reducing these programs means downsizing this work force and reducing the number of companies providing these services when the region will likely need them in the future. Many industries are experiencing shortages of workers. Losing a trained work force could take years to recruit and retrain.

Fourth, as the Council reconsiders its energy efficiency targets for the 8th Power Plan, it should assume a higher penetration rate. The 7th Power Plan assumed that only 85 percent of the cost-effective conservation will be achieved. If the region could achieve 100 percent of these savings, it would save consumers an additional \$300 million per year.²⁵ If we assume these savings are phased in over the life of a 20-year power plan; the additional savings could total about \$3 billion by 2036.

Fifth, the Council, BPA, and utilities should include incentive programs for measures that are on the margin to stimulate new technologies. The Council and Northwest Energy Efficiency Alliance should identify promising measures and develop programs to bring down cost and increase the commercial availability. The region has had success with similar efforts where early investments reduced long-term costs.

²⁵ De-rating the energy efficiency that is achievable by 15 percent represents 600 average megawatts of low-cost power that were not included in the NPCC conservation targets for the Seventh Power Plan. A simple calculation of the value (marginal resource costs minus cost of conservation²⁵ multiplied by 1000 average megawatts) shows that the value of this additional conservation is \$300 million per year.

BPA and utilities can afford to pay the incremental costs of these marginal measures. The Northwest Power Act requires measures to be economically feasible for consumers, taking into account financial assistance from the Bonneville Power Administration and the region's utilities.

It is important to note that BPA and utilities do not pay the full cost of the energy efficiency. Consumers usually pay a share of the costs of these programs. Building codes and appliance standards provide significant savings at no cost to utilities. A rough calculation of the costs of energy efficiency savings that were paid for by utilities is about \$8 per megawatt hour²⁶—a fraction of the costs of alternatives or the value of the electricity sold in the market over this period. The Council should conduct its own analysis of the utility paid costs in considering the costs and benefits of stimulating new technologies. During the first seven power plans energy efficiency was about half the cost of alternative generating resources.

Sixth, there is a great deal of business and public interest in energy efficiency that did not exist in prior decades. Customers are asking for green certifications and business are routinely marketing products with zero-carbon footprints. Congress and the Biden Administration are considering infrastructure programs to address the climate crisis and increase funding for these programs.

Seventh, analysis indicates that there is likely additional energy efficiency available. We reviewed two papers that addressed this issue:

The first is a paper entitled: *Beyond Supply Curves*, by Fred Gordon and Lakin Garth of the Energy Trust of Oregon and Tom Eckman and Charles Grist formerly at the Northwest Power and Conservation Council. It discusses how new technologies, which are often impossible to forecast, have significantly increased the amount and reduced the cost of energy efficiency measures. Based on prior experience, the high efficiency windows in the 2005 Council Power Plan were 12 percent more efficient than the assumptions used in the Council's 1983 plan. The paper also shows how the cost of compact fluorescent lamps dropped from the \$12 per bulb assumed in the 1991 plan to \$3 assumed in the 2005 plan. It is likely that future innovations will continue this trend and they should be recognized in future uncertainties.

The second paper, by David Goldstein of the Natural Resources Defense Council, describes the methodologies that are "excessively conservative if the goal of policymakers is to meet aggressive climate change emission reduction goals." The paper documents the systematic biases that result in low potentials in energy efficiency. These include: 1) subjecting efficiency measures to a criterion of proof beyond a serious doubt; 2) assuming arbitrary realization factors less than 100 percent due to questions about social acceptance of energy efficiency; 3) implicit assumptions that a lack of research on the cost or feasibility of a measure means that it is excluded from a study; 4) a failure to consider system integration; 5) assumptions that once known efficiency measures are implemented, technological progress ceases and no further improvements are possible; and 6) reliance on projected costs of efficiency without looking at realized costs, which has always been lower whenever data has been available.

²⁶ The analysis assumes that the energy 7,200 average megawatts of savings when phased in over the past 38 years totaled savings of more than 1.2 billion megawatt hours, divided by utility spending of about \$9 billion.

Eighth, the Council projects that electrification of transportation could add 700 to 900 average megawatts of load by 2040. There appears to be significant potential for additional efficiency improvements in these vehicles (see Section 3.3.3.B).

In summary, the challenges for the region are to set realistic targets for energy efficiency and ensure the flexibility to achieve higher savings as they become available. CRITFC calls upon the region to do so.

After 40 years of experience, there are ample results in the Pacific Northwest to demonstrate that improving energy efficiency can reliably save energy. We also know that the Council's targets have been conservative. New technology has repeatedly made conservation more cost effective than estimated by the Council. Finally, the Northwest Power Act calls for energy conservation to be developed as a resource ahead of traditional resources.²⁷

For all these reasons, the Council should address all the factors discussed above and increase the conservation targets to continue programs at the levels in the 7th Power Plan and work with BPA and utilities to try to exceed them.

D. Hot Water Heaters

Recommendation 10: the Council, BPA, and utilities should fund the incremental costs of heat pump water heaters to stimulate the adoption of this technology.

Heat pump water heaters are more efficient than conventional systems and provide both energy and capacity savings in new houses. The conversion of existing houses to heat pump water heaters will also provide benefits. The Council's 7th Power Plan estimated that cost-effective conversions from electric resistance to heat pump water heaters would reduce peak demands by 1,250 megawatts during winter (January) and just over 1,850 megawatts in summer (August) by 2035. These systems come with built-in demand reduction capability to help reduce peak loads.

Utility incentive programs would increase market penetration and likely drive down costs. This was the experience with "new technology" such as six-inch wall insulation and R-50 windows in the 1st Power Plan in 1983. BPA and utilities paid the added costs of these measures, suppliers started stocking them, manufacturers mass produced them, subcontractors learned to install them, and the costs came down.

Recommendation 11: Utilities and BPA should develop and fund programs to schedule when water heaters operate.

Time of day water heating technology is commercially available. Water pre-heated during the middle of the night, can last through the morning peak use period. This technology can be used in today's hot water heaters, and can be made more effective in replacement tanks, by increasing the size of the water tanks. More sophisticated and easy to use demand-response enabled

²⁷ 16 U.S.C. § 839; 126 Cong.Rec. H9848 (Rep. Pritchard) ("[The Act] treats energy conservation as a resource, making it the top priority in meeting the region's energy needs. *NRIC and Yakama Nation v. Northwest Power Planning Council*, 35 F.3d 1371, 1378 (9th Cir. 1994).

equipment is also coming onto the market, thanks to state-level standards passed in Oregon and Washington for CTA-2045 compliant water heaters for the residential market. To get the benefits of the peak reduction potential, however, utilities will need to develop customer-centric demand response programs.

3.4.2. Ensure that Utilities Achieve the Targets

Recommendation 18: The Council should monitor the implementation of energy efficiency programs to ensure that utilities meet the conservation targets.

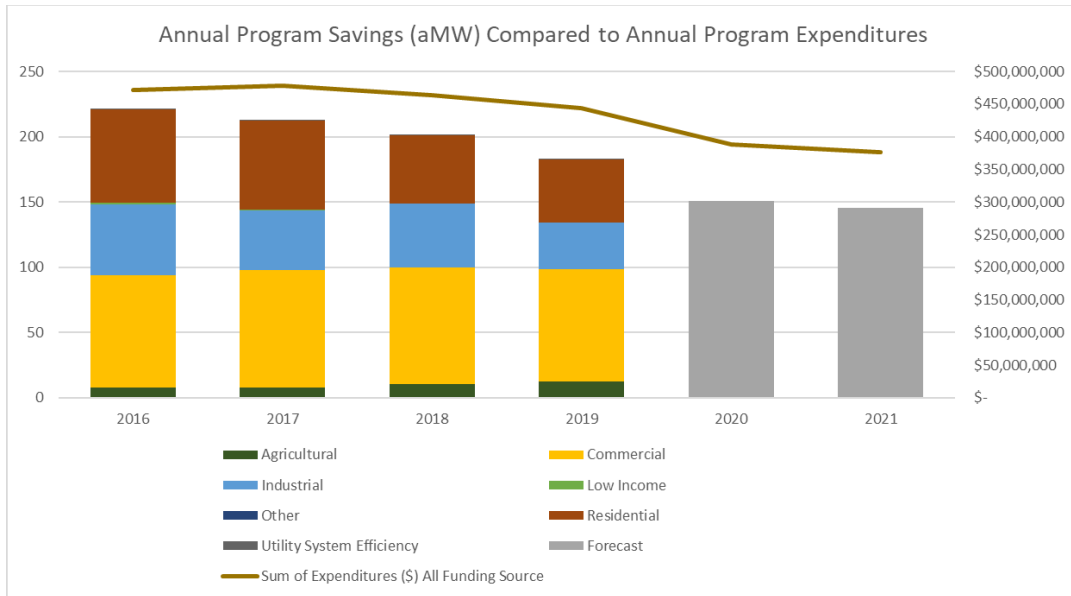
The NPCC summary of achievements²⁸ shows the region ended up exceeding 6th Plan targets and is slightly ahead of 7th Plan goals – despite the impact of Covid-19 on programs. The table below shows the region exceeded the NPCC’s targets for all energy efficiency activities between 2005 and 2019:

	Year	Cumulative Target (aMW)	Actual Achievements (aMW)	Actual Over/Under Target (aMW)	% Over/Under Target
5th Plan	2005	130	141	11	8%
	2006	265	293	28	11%
	2007	405	500	95	23%
	2008	550	735	185	34%
	2009	700	966	266	38%
6th Plan	2010	900	1,223	323	36%
	2011	1,120	1,503	383	34%
	2012	1,360	1,747	387	28%
	2013	1,620	2,009	389	24%
	2014	1,900	2,249	349	18%
	2015	2,190	2,492	302	14%
7th Plan	2016	2,375	2,695	320	13%
	2017	2,560	2,904	344	13%
	2018	2,790	3,133	343	12%
	2019	3,020	3,349	329	11%

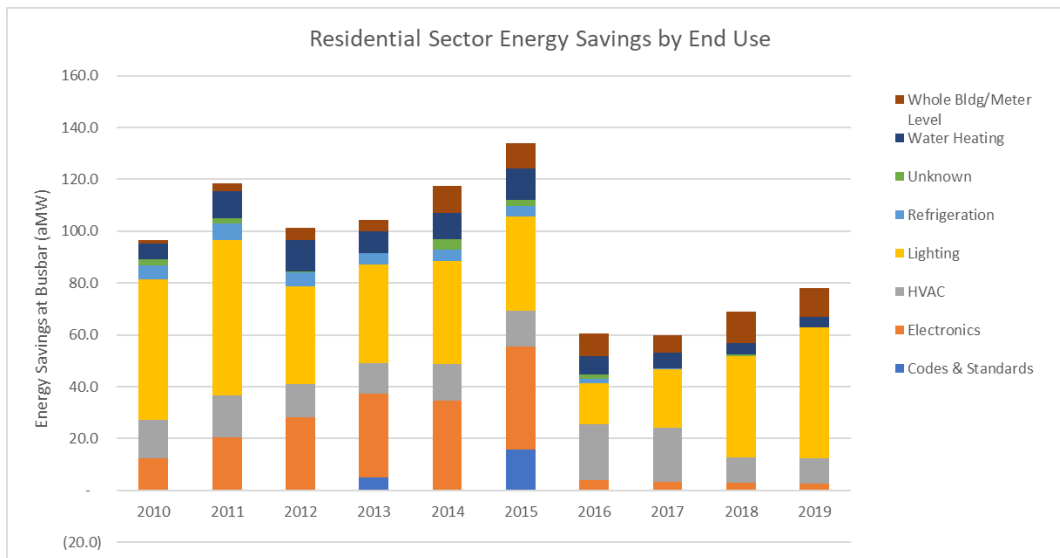
Unfortunately, progress has slowed. The Council figure below shows total funding in 2021 was about \$100 million per year less than in 2016 and annual savings declined from approximately 225 average megawatts in 2016 to a projected 145 average megawatts in 2021:²⁹

²⁸ <https://rtf.nwcouncil.org/about-rtf/conservation-achievements/2019>.

²⁹ <https://nwcouncil.app.box.com/v/2019RCPRResults>

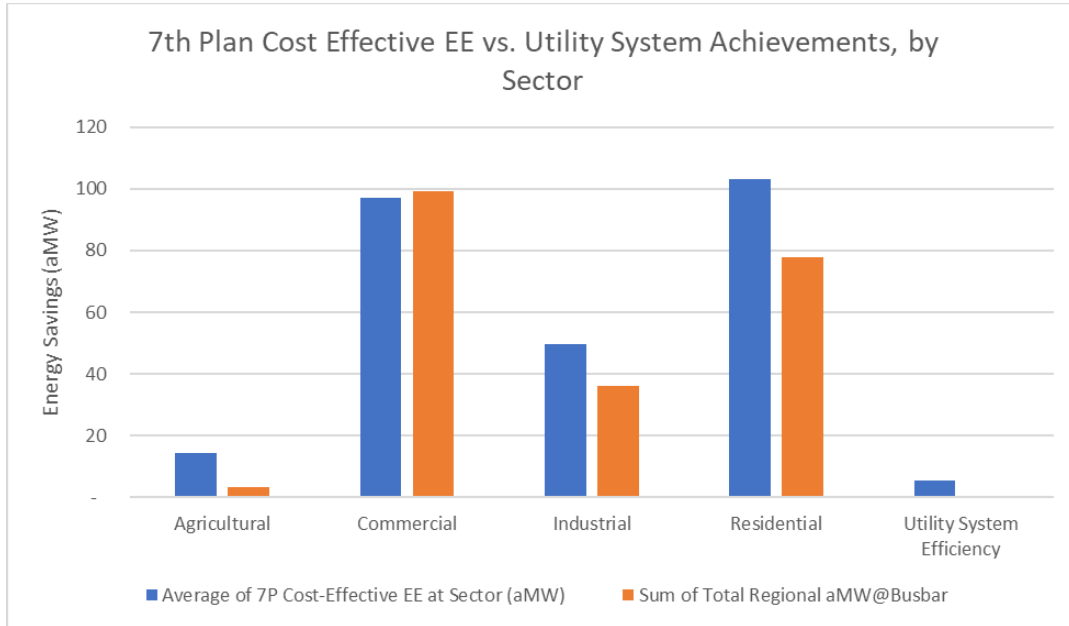


The reductions in energy savings have been significant in the residential sector, with savings for 2016 through 2019 averaging about half the progress in 2015³⁰. The chart from the NPCC shows the energy savings, by end use between 2010 and 2019.



The chart below shows that utilities are not meeting NPCC goals in the agricultural, industrial, and residential sector.

³⁰ NPCC 2019 Regional Conservation Progress Report by the Regional Technical Forum.



Many utilities in the Northwest are national leaders in implementing energy efficiency programs. We applaud their efforts. Some utilities have not embraced this proven, low-cost resource. Failure to achieve these targets means more resources and transmission and distribution lines need to be built. These actions will add costs and present risks to upland resources like First Foods that the tribes are striving to protect. Failure to meet efficiency targets also puts more pressure on the hydroelectric system that has imposed economic resource transfers that have discriminated against the tribes’ treaty secured commitments to their fishery resources.

The Council, BPA and PUCs should monitor future implementation to ensure that all utilities are meeting the targets. If the Council finds that some utilities are continuing to impose costs on other consumers, salmon, and other tribal resources, then the Council should impose a surcharge under the provisions of the Northwest Power Act.³¹

CRITFC would support a safe harbor provision to the surcharge requirements. For example, a utility could avoid the surcharge if it had: 1) well designed programs in place in all sectors; 2) offered funding to cover the cost to the consumer of the energy-efficiency improvements up to the costs of the next most expensive resource;³² 3) had an effective public education program so all customers were aware of the programs; and 4) had committed sufficient funds to implement all requests for the energy efficiency programs.

3.4.3. Expand Low-Income Weatherization Programs

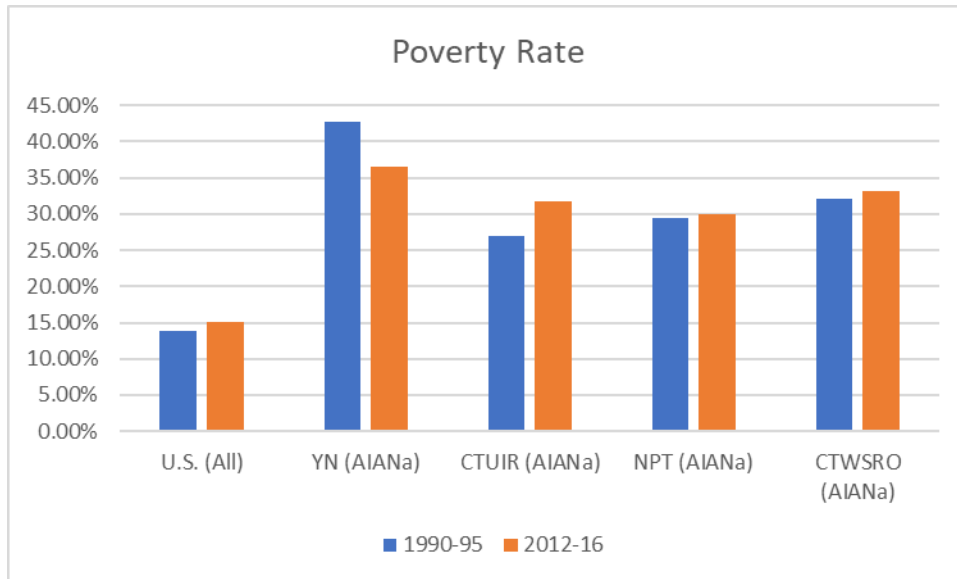
³¹ Section 4(f)(2) of the Northwest Power Act authorizes the Council to recommend a surcharge of 10 to 50 percent for utilities that do not achieve the model conservation standards in Section 4(f)(1).

³² The Northwest Power Act requires 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.

Recommendation 19: All tribal homes and businesses should be fully weatherized by 2025 and all tribal homes and businesses should receive solar panels and battery systems that provide zero net energy by 2030.

Given the long history of damage by the electric power system to the Northwest tribes' resources, CRITFC recommends that energy efficiency and renewable resource programs implemented by private, public, and federal power suppliers give priority to tribal communities. The interim target should be to weatherize all tribal homes and businesses by 2025. Furthermore, all willing tribal homes and businesses should receive solar panels with battery systems and energy efficiency improvements so that these energy efficiency and solar system resources will meet all the energy needs of the building.³³

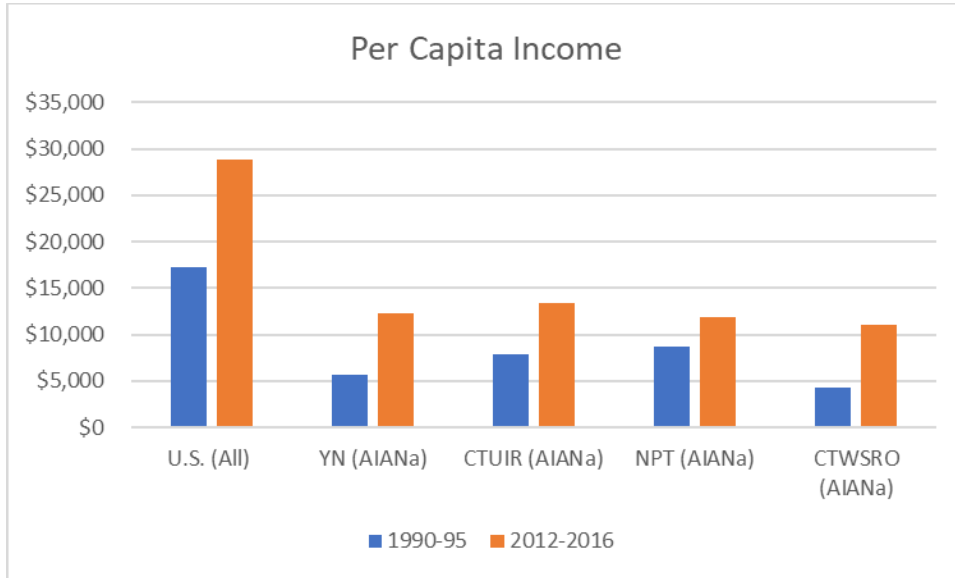
Tribal communities include many low-income people. Tribal poverty rates for Columbia River Treaty Tribes are still two to three times the national average. Per capita income is less than half the national average.³⁴ Data for CRITFC tribes are shown in the next two tables.³⁵



³³ Many informal promises were made by federal officials during the 1930s that electricity would be made available to tribal people free of charge after the dams were built.

³⁴ The 1990-95 data (blue) were obtained from the 1999 Meyer Report, which presented information from the 1990 Special Tribal Run U.S. Census. The 2012-2016 data (orange) were obtained from the Center for Indian Country Development, which is a project of the Federal Reserve Bank of Minneapolis.

³⁵ YN is the Yakama Nation, CTUIR is the Confederated Tribes of the Umatilla Indian Reservation, NPT is the Nez Perce Tribe, CTWSRO is the Confederated Tribes of the Warm Springs Reservation of Oregon.



The Clean Energy Transformation Act (CETA) in Washington requires utilities to ensure an equitable distribution of benefits from the transition to clean energy for all customers.³⁶ The act also requires utilities to make programs and funding available for energy assistance to low-income customers.

Oregon requires that the total generating capacity of community solar projects be made available for use by low-income residential customers.

Recommendation 20: Utilities should weatherize and achieve net zero energy for all low-income homes by 2035.

After forty years, too many low-income houses and multi-family buildings still have not been weatherized. People who can least afford it are exposed to higher bills. It is time to solve this problem. Achieving zero net energy will insulate people from higher future costs.

Recommendation 21: Utilities, the Northwest Energy Efficiency Alliance, and other organizations should implement comprehensive programs to improve energy management practices in the commercial and industrial sectors.

Energy efficient commercial buildings and industrial facilities are a source of great potential savings, with the biggest gains in heating, ventilation, and air-conditioning (HVAC) and improved energy management in industrial plants.

Because HVAC systems and smart thermostats are complicated, they need continuing attention to remain efficient and tuned to the tasks for which they are designed. All new buildings should go through a building certification process to assure that they are operating as they were designed and to assure that the operation is efficient.

³⁶ Chapter 288, Laws of 2019.

Most commercial buildings rely on programmable thermostats that are not always maintained. Many buildings are operated as though occupied continuously. Better scheduling can result in 30-40% savings in many of these buildings. With Smart Grid technologies and strategies that enable one to essentially dispatch loads behind customers' meters, these savings can now be more easily captured. We recommend a concerted regional effort to do so. In Washington state, there is a new building performance standard law that affects most commercial buildings over 50,000 square feet. It will require continuous assessment of operations and that buildings hit certain energy use targets.³⁷

Recommendation 36: BPA and utilities should invest in solutions that minimize transmission and distribution expansions.

As discussed above and in more detail in Appendix E, there are significant economic and environmental costs associated with the existing and new transmission and distribution lines.

CRITFC estimates that BPA and four Northwest investor-owned utilities spent approximately \$8.8 billion on transmission between 2016 and 2020. Of this total, BPA spent \$1.4 billion on transmission capital expenses. BPA is projecting another \$2 billion between 2021 and 2025³⁸ for a ten-year total of \$3.4 billion. The funding for expansion of BPA system represents more than half these total costs. BPA spent \$601 million between 2016 and 2020 and is projecting a transmission expansion program totaling \$730 million over the next five years.

CRITFC was able to compile distribution and transmission costs from the past five years for four investor-owned utilities in the region that totaled \$6.8 billion. The information for the investor-owned utilities did not have details on expansions.³⁹

CRITFC could not find enough detail to determine how much of these costs were related to activities that could be reduced or delayed if additional energy efficiency, on-site solar, and peak-demand reduction programs described in this document had been implemented.

If utility spending on transmission and distribution over the next five years is similar to the recent past, the total BPA and investor-owned spending could total \$8.8 billion. Spending by other utilities would add to this total. If additional energy efficiency, on-site solar, and peak-demand reduction programs described in this document could reduce the transmission and distribution capital costs by ten percent, it could save consumers approximately \$880 million over the next five years. Even a five percent reduction in the construction of new transmission and distribution systems could save consumers about \$100 million per year.

The large magnitude of these transmission and distribution costs and the significant potential for savings for consumers and the environment should convince regional energy decision makers to focus on the benefits of reducing these economic and environmental costs. The construction costs are averaged into utility rates, so consumers do not see the magnitude of the expense. The environmental costs often fall on tribal resources (such as First Foods and sacred sites), rural

³⁷ <https://www.commerce.wa.gov/growing-the-economy/energy/buildings/>

³⁸ BPA Historical & Future Capital Spend, page 8 of presentation on Integrated Program Review 2, March 2, 2021.

³⁹ See Appendix E for details on these costs.

areas, and populations that are not represented in energy siting or ratemaking processes. Investor-owned utilities receive a rate of return on these investments. All these factors may create an incentive to expand these facilities rather than pursue activities that reduce the need for these expensive assets. Therefore, CRITFC recommends that all proposals for transmission and distribution expansions should evaluate the other alternatives described in this Energy Vision that could delay or eliminate the need for the project. BPA and utilities should pursue those alternatives when they reduce costs or cultural and environmental impacts.

BPA and utilities should also implement time-of-use transmission pricing that is based on the cost of adding new facilities. Some of BPA's customers are charged for the highest transmission use in a year; however, these marginal uses are priced at the average cost of the transmission system, not the full cost of meeting peak or the cost of expanding the system.

These efforts to reduce the costs and impacts of transmission and distribution lines will require an interstate approach that addresses the actions of federal and state agencies, utilities, utility regulators, and siting agencies.

Recommendation 39: Federal, state, and local policy makers should develop programs to reduce the use of fossil fuels.

It is impossible to discuss energy without talking about carbon-based fossil fuels such as crude oil, coal, and natural gas. Their products and by-products include petroleum-based fuels (e.g., butane, diesel, kerosene, liquefied natural gas, liquefied petroleum gas, propane, fuel oil), crude oil, natural gas, various types of coal, and methane. From extraction, to conveyance, to consumption, and by-product waste treatment, fossil fuels dominate global energy markets and drive climate change and hazardous waste management. The extraction, transport and use of fossil fuels are generally incompatible with Tribal Nations' ultimate obligations to protect sacred First Foods and precious water.

The fossil fuels life cycle includes points of extraction, conveyance and import or export project siting such as receiver terminals, refineries, and power plants, and finally consumption, usually through a combustion process. At each step to fossil fuel use, the planet and its resources are harmed. While fossil fuel extraction is not a dominating issue in the Columbia River Basin, the region is a target location for fossil fuel transport and export projects. The Basin also suffers from regional and global consumption effects, such as air deposition of mercury from coal plants in Asia.

These developments have placed undue burdens on the backs of the Region's salmon populations.

In the Columbia River Basin, fossil fuel projects include transport terminals, refineries (located on northern Puget Sound native lands), and gas and coal-fired generation plants. In the 1970s, there were proposals for pipelines from northern Puget Sound area to the Midwest. These

proposals would have provided a few dozen jobs offloading supertankers and created significant risks to the environment and communities that depended on it.⁴⁰

In 2005 there were proposals to import liquefied natural gas through ports along the Columbia River (these proposals were later reverted to developing export terminals when fracking in the United States became economical). Later coal companies eyed markets in Asia and rail lines that connected the Powder River Basin with the Pacific Northwest, and by 2012, crude oil companies were considering similar options, finding rail suitably cheaper than pipelines to export large quantities of Bakken crude and Canada oil sands (bitumen) crude. Bitumen's toxic by-product, petroleum coke, is also transported through the Columbia River Gorge.

Transport terminals usually include three separate components: the conveyance that serves the terminal, the terminal itself, and the marine vessels to export the product. These terminals are transitional facilities that cannot operate but for the other transport components. Typical conveyances include rail, barge, trucking, and pipeline. Of these options, rail is the component with the least amount of state, tribal, or federal regulatory oversight. In addition, many states and federal agencies are reluctant to comprehensively analyze the risks transport of fossil fuels poses to human health and the environment, leaving high consequence risks unmitigated. This poses an advantage to project proponents who, in the last decade, have rushed to propose dozens of fossil fuel-by-rail projects, particularly crude-by-rail and most recently, methane and liquefied natural gas by rail.

Export projects do not provide abundant energy to regional markets, but rather burden local resources, increase risks of catastrophic harm, and provide no benefit for affected tribes. Starting in 2010, dozens of fossil fuel transport projects were proposed for the Pacific Northwest, specifically the states of Oregon and Washington, and the province of British Columbia. Regional tribes and First Nations were forced to spend time and resources analyzing and unifying in opposition to this onslaught. Most of the projects were not permitted, due in large part to tribes' coordination with allies in the environmental community, groups such as "Power Past Coal," "Stand Up to Oil," and "Power Past Gas." In the landscape of these victories, a new term was coined, "the thin green line" of the Pacific Northwest.

Besides providing the tribes and public with the only regulatory means to evaluate projects, the terminals themselves can be a problem. In more than one case, terminal projects were proposed for locations impacting sensitive cultural resources, areas that provide salmon spawning or rearing habitat and other aquatic resources or were situated such that they directly impeded tribal treaty fisheries. Most of the terminals lie near water bodies, such as the Columbia River, adding or expanding dock infrastructure that attracts predators – both avian and aquatic – that impact treaty fisheries. Finally, the terminals' operations that involve transfer and storage of fossil fuel products, and these terminals' proximity to water bodies, increases risks of spill and injury to the river.

The variety of conveyances that feed these terminals and refineries all pose unique risks depending on location and product. Fossil fuels are conveyed via pipeline, long-haul truck, rail

⁴⁰ In 1977, Senator Warren Magnuson added an amendment to the Marine Mammals Protection Act to ban the construction of an oil superport inside Puget Sound that was designed to deliver crude oil to the Midwest.

car, barge, and marine vessels throughout the Columbia River Basin. Oil and natural gas pipelines create risks of explosions and are often highly destructive to natural areas when constructed and are notoriously leaky during operation. Natural gas pipelines have been proven to pollute the air with methane, volatile organic compounds, and particulate matter. In British Columbia, a proposed pipeline would bring heavy oil sands crude over fragile habitat and to the Salish Sea for transfer to oil tankers. Marine vessels pose their own elevated spill risks and have been shown to impact Southern Resident orcas and tribal fishing.

Rail has been in the Columbia River Basin for a very long time, hauling materials and supporting the regional economy for over a century. In the Columbia River Gorge, the rail lines both sides of the river, the construction and operation of which continues to directly – and often negatively – affect the hydrology and flow of the river. Long trains delay tribal access to fishing sites and create hazards to tribal members trying to exercise their treaty fishing. Adding more rail traffic increases the danger.

The amount of coal hauled through the Columbia River Gorge has been that minimally necessary to serve local generation.⁴¹ When excessively large-scale coal storage and transport projects were proposed in the Pacific Northwest that would have substantially increased the number of coal trains severalfold, the tribes stood against these projects. Even with the smaller number of coal trains, many tribal fishers complained of coal dust in the windy Gorge. Coal dust contains arsenic and polycyclic aromatic hydrocarbons (PAHs), a known carcinogen. High levels of both contaminants have been found in the soil around coal piles, and arsenic can leach into water. Airborne coal dust has been associated with bronchitis, emphysema, and asthma. Burlington Northern Railroad estimates that each coal car loses 500 pounds of dust each trip, with each 100-car train potentially losing 50,000 pounds. With the specter of more coal trains, then, the tribes were adamantly opposed to this additional burden.

Meanwhile, in the Bakken fields of the Dakotas, the United States found itself in possession of large depositions of domestic crude. Oil companies looked west to markets in Asia and considered rail as the simplest form of conveyance to get the product to market. To this point, rail tanker cars had not been tested for light crude such as that from the Bakken fields. In 2013, an oil train derailed in Lac-Mégantic, Quebec and exploded, killing forty-seven people and there were continual derailments and explosions, spilling more oil into rivers, lakes, and marine waters than in the previous forty years. New and retrofitted tank cars were developed that decreased the severity of the derailments, but nonetheless, spills occurred on an annual basis. Along with greater risks of high consequence spill events, the increase in oil terminal proposals meant a sharp increase in rail traffic. Most oil trains are made up of more than 100-120 cars, stretching a mile and a half. For the Columbia River, this meant long and numerous oil trains travelling both sides of the river, impeding tribal fishers' access and creating potentially dangerous conditions.

In the past, natural gas has been peddled as a clean-burning fuel less impactful to the environment than coal and crude oil, and a potential “bridge” fuel to move from fossil fuels to renewables. Riding this message, in recent years, the U.S. has become a global leader in natural

⁴¹ In 2020, the PGE Boardman Coal Plant shuttered permanently and was the only coal plant in Oregon. Currently the TransAlta Coal Plant in Centralia, Washington is operating at reduced capacity and is slated for permanent closure in 2025.

gas extraction, mostly through fracking processes. However, fracking is extremely water intensive and when methods do not meet industry standards can contaminate drinking water. When natural gas is produced or transported, methane can leak into the atmosphere. Methane is a potent greenhouse gas, with 34-80 times the warming power of carbon dioxide on a pound-for-pound basis (IPCC 2014).

In Canada, oil sands bitumen extraction is the most polluted and polluting extraction process of any fossil fuel, creating toxic waste and hazardous by-products like petroleum coke. The oil sands are located on Indigenous Nations' territories and extraction has destroyed thousands of acres of natural homelands and habitat.⁴²

Overall, new fossil fuel projects have no place within any plan to protect salmon or treaty resources. Mitigation is often unavailable or inadequate, and most projects pose risks of irreparable physical consequences to cultural and natural resources.

⁴² See, generally, <https://www.theguardian.com/commentisfree/2015/jun/23/canadas-tar-sands-oil-fields-sacred-lands>, <https://www.nationalgeographic.com/environment/article/alberta-canadas-tar-sands-is-growing-but-indigenous-people-fight-back>, <https://www.ienearth.org/what-are-the-tar-sands/> (First Nations' subsistence food sources have diminished where habitat and entire ecosystems have been fatally disrupted by oil sands projects).

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March 17, 2023

Jamae Hilliard Creecy
Vice President Energy Efficiency
Bonneville Power Administration

RE: Draft Bonneville 2022-2027 Energy Efficiency Action Plan

Dear Ms. Hilliard Creecy,

The Council takes the opportunity to provide comments on Bonneville's draft 2022-2027 Energy Efficiency Action Plan. For over 40 years, energy efficiency has been the primary resource recommended by the Council, helping the region achieve the vision of the NW Power Act of an adequate, affordable, and efficient energy supply. The Council's 2021 Power Plan identified the continued importance of energy efficiency for maintaining system adequacy, while recognizing new challenges impacting cost-effectiveness. Bonneville has a critical role in implementing the conservation program in the Council's 2021 Power Plan, which includes acquiring all cost-effective energy efficiency and supporting the region in achieving other important objectives. Collectively, these actions will extend the value of the Columbia River power system to help maintain resource adequacy and provide direct benefit to rate payers throughout the Pacific Northwest.

The Council appreciates the challenges the region faces in implementing a robust energy efficiency strategy, including the ongoing supply chain limitations and labor shortages, higher costs for raw materials and finished products, declining avoided costs of energy efficiency, and the rapidly evolving policy and legislative landscape. Bonneville's draft 2022-2027 Energy Efficiency Action Plan provides a path forward for achieving the conservation elements outlined in the 2021 Power Plan, despite these challenges. While the Council supports many of the strategies outlined in the draft Action Plan, we offer five recommendations for consideration as this Energy Efficiency Action Plan is finalized.

Create a More Explicit Connection to the 2021 Power Plan

The 2021 Power Plan calls on Bonneville to acquire between 270 and 360 average megawatts of cost-effective energy efficiency by the end of 2027, of which a minimum of 243 average megawatts should come from cost-effective Bonneville program and NEEA initiative savings. Additionally, the 2021 Power Plan identifies several areas of specific focus, requiring Bonneville and the region to capture energy efficiency above and beyond this cost-effective amount. This includes the efforts to support small and rural utilities with a robust portfolio of options, capture weatherization for unweatherized homes, and support states and other jurisdictions with decarbonization policies.

Under the Act, Bonneville is to acquire conservation and implement conservation measures as Bonneville determines to be consistent with the 2021 Power Plan. And the draft Energy Efficiency Action Plan does properly identify the 2021 Power Plan as one of the guiding principles driving the strategy. Yet the draft Energy Efficiency Action Plan fails to connect all of its elements to the 2021 Power Plan, with no explanation for the deviations from the Plan. The Council recommends this should be remedied before the Action Plan is finalized. Specifically, Bonneville should clearly identify the efficiency that is cost-effective per the Council methodology and parameters, as outlined in the 2021 Power Plan. For the energy efficiency that – while not cost-effective – is in support of broader regional goals, Bonneville should clearly connect those to plan elements as well.

The Council believes this would be an easy adjustment. For example, the draft Energy Efficiency Action Plan highlights the importance of residential HVAC measures, such as ductless heat pumps. These measures, while not cost-effective under the 2021 Power Plan, do meet other goals of the conservation program. Including these measures in the Bonneville portfolio helps to ensure a robust suite of options for all utilities, particularly those small and rural utilities that otherwise would be limited if Bonneville were to focus on just cost-effective efficiency. These same measures also provide significant value to customer utilities in those jurisdictions with new decarbonization policies that direct increased electrification of buildings. Explicitly connecting Bonneville's efforts to the 2021 Power Plan in this way provides a stronger justification for the pursuit of this efficiency.

Revisit Strategy for Cost-Effective Programmatic Savings in Advance of Setting Budgets for 2026-2027

The 2021 Power Plan calls on Bonneville to acquire a minimum of 243 average megawatts of cost-effective energy efficiency through its programs and NEEA initiatives. It appears that Bonneville is planning to acquire close to that minimum amount of cost-effective energy efficiency. While the Council supports the other elements of the draft Energy Efficiency Action Plan that relate to 2021 Power Plan goals, the Council wants to reiterate that achieving these other elements should not come at the expense of acquiring all cost-effective energy efficiency. Therefore, the Council urges Bonneville to closely monitor its cost-effective programmatic efforts to date and adjust the strategy, if needed, in advance of setting budgets for the 2026-2027 rate period. The Council looks

forward to working closely with Bonneville to understand the near-term achievements and other factors to help inform that strategy.

Additionally, the Council notes that new state and federal decarbonization policies are likely to result in new electric load for many of Bonneville's customer utilities. The 2021 Power Plan and recent 2027 Adequacy Assessment both identified that additional energy efficiency – as well as additional cost-effective generating resources – would be required to support regional adequacy under a high load future. Additionally, the 2021 Power Plan developed a model conservation standard targeted at those jurisdictions with decarbonization policies, which recognized electrification should be done efficiently and would likely justify increased conservation in those jurisdictions. To mitigate risks of rapid regional load growth, maintain high levels of resource adequacy, and better position the region in the face of uncertainties, Bonneville should target programs to deliver the higher end of the 2021 Power Plan range of programmatic efficiency, particularly in those jurisdictions with policies that drive growing resource needs. Leveraging existing mechanisms, such as the utility self-funded portion of Bonneville's energy efficiency program, will help to ensure that those jurisdictions that have the needs and policies pay a higher share of the cost of this additional efficiency.

Work with Council, NEEA, and Utilities to Identify Strategies for Achieving All Cost-Effective Energy Efficiency

The Council identified several areas of cost-effective energy efficiency potential that are not fully addressed by the draft Energy Efficiency Action Plan. We understand that some of these areas are not well suited to a programmatic approach and likely require a broader regional strategy to acquire the cost-effective potential – whether it be a market transformation initiative or other approach. The Council recommends that Bonneville work with NEEA, regional utilities, and the Council to (1) identify cost-effective energy efficiency potential that is not currently being captured through either utility programs or NEEA initiatives and (2) work collaboratively to develop strategies to ultimately acquire this cost-effective energy efficiency. These discussions are timely, as NEEA is currently working with funders to develop a scope and budget for their next business cycle. Finding solutions to acquire this low-cost energy efficiency are critical for ensuring both an adequate and affordable power system. Bonneville's leadership in these discussions is critical.

Continue to Explore Approaches for Addressing Long-Standing Barriers to Achieving Weatherization for All Northwest Consumers

Weatherization programs have been included in every Council power plan. While significant progress has been made, there continue to be pockets of the population with leaky homes that have little to no insulation. Many of these are lower income residents with higher energy burdens. Despite being a high-cost measure under today's avoided costs, the Council determined that addressing these remaining homes was critical and called on Bonneville and the region to continue to invest in weatherization programs focusing on those leaky and unweatherized homes. Bonneville's draft Energy

Efficiency Action Plan also recognizes the important role weatherization has for the region and aims to continue to invest in this space, but the Action Plan currently falls short of achieving all the potential weatherization in this space. The Council recognizes that there are ongoing infrastructure barriers to acquiring this conservation, many of which are outside of Bonneville's direct ability to address. In an effort to continue to make progress despite these challenges, the Council recommends that Bonneville continue to work with NEEA, utilities, state agencies, tribal agencies, the Council and others to identify and develop strategies to address these barriers. The Council looks forward to working with Bonneville and the region on these issues.

Develop a Strategy to Leverage the Efficiency Funding from the Bipartisan Infrastructure Law and the Inflation Reduction Act

The Bipartisan Infrastructure Law and the Inflation Reduction Act will provide significant funds for energy efficiency across the US. Bonneville should develop a strategy that ensures its energy efficiency program is complementary to, and ultimately leverages the benefits from, these federal funds for efficiency. In many cases, the most effective way to leverage these funds may be to help eligible customers identify opportunities and apply for funding or incentives. Small rural utilities and communities and tribal agencies in particular are eligible for significant incentives but may lack information or resources to help them gain access. The goal would be to ensure that the Bonneville program is supportive and not duplicative, focusing program efforts where more investment is needed, and leveraging Federal dollars where it can offset or support regional efforts. Bonneville should also work with NEEA and other regional partners to maximize the opportunity from these programs.

There is important work ahead, and the Council looks forward to working closely with Bonneville in its efforts to acquire all cost-effective conservation in the 2021 Power Plan, while also addressing these other important elements of the energy efficiency infrastructure.

Sincerely,

A handwritten signature in black ink, appearing to read "Jeff Allen", with a horizontal line extending to the right.

Jeff Allen
Chair



NW Energy Coalition
for a clean and affordable energy future

March 17, 2023

Jamae Hilliard Creecy
Vice President, Energy Efficiency
Bonneville Power Administration
P.O. Box 3621
Portland, Oregon 97208-3621

Re: Runnin' Down a Dream: Comments on Bonneville Power Administration's Draft 2022-2027 Energy Efficiency Action Plan

Dear Ms. Creecy:

Thank you for the opportunity to comment on the Bonneville Power Administration's (BPA's) Draft 2022-2027 Energy Efficiency Action Plan ("Action Plan").

The NW Energy Coalition is an alliance of over 100 environmental, civic, and human service organizations, utilities, and businesses in Oregon, Washington, Idaho, Montana, and British Columbia, plus many individual members, united around a mission to advance clean, equitable, and affordable energy policies in the region.

Our organization's founding more than 40 years ago was spurred by BPA putting unacceptable cost risks onto customers and neglecting to instead pursue energy efficiency that directly helps customers and the power system. While BPA and the region have made great strides on energy efficiency since the NW Energy Coalition was founded, there is still much to do *now*. Our energy system is transitioning to be cleaner, and BPA's energy efficiency and demand response programming is vital to ensuring we can make this transition affordably and equitably for customers.

Overall, we appreciate the guiding principles of the Action Plan and the work to detail the program and the anticipated programmatic changes to achieve the stated targets—and hopefully go further, as the forecasted savings indicate.

However, we are concerned that the Action Plan does not lay out enough concrete actions to ensure that BPA and its customers will achieve all the needed cost-effective energy efficiency and demand response in the region. We have noted in other venues that the 2021 Power Plan target for conservation for the region, and for BPA, is far too low: it does not account for the increasing scale of electrification; it does not value the other attributes of conservation that are important to the region and its customers; it degrades the capacity and capability of the conservation market to deliver savings; and it exposes the region to further market price spikes. **The region needs BPA to lead on developing strong energy efficiency programs for all customers in the region.**

Summary Comments

As BPA reviews comments and updates the draft Action Plan over the next six weeks, we have provided some recommendations that, in our view, would strengthen it as a guiding document over the next five years, as well as recommendations for other actions BPA should be doing in coordination of this Action Plan.

As part of the final Action Plan, BPA should:

- Provide a “stretch target” for energy efficiency that better accounts for expected increased electrification in the region and the not-yet-accounted-for values of energy efficiency that BPA notes are important, including resilience and equity.
- Explain in more detail why the energy efficiency program missed targets in the last Action Plan; while the COVID pandemic was obviously a major driver, as we have detailed in past comments, BPA was showing strong signs of missing efficiency targets prior to the start of the pandemic—due to underfunding of these programs. Knowing and acknowledging why BPA’s efficiency programs have missed targets will help BPA course-correct in its future implementation.
- Describe risks to the program and Action Plan if estimated utility self-funding amounts (estimated at approximately 30%) do not materialize, or do not materialize equitably across the region.
- Consider creating a targeted action plan to ensure that energy efficiency acquisition is equitably achieved in the eastern part of BPA’s service territory.
- Provide information on when and how BPA will evaluate the non-energy benefits of energy efficiency. We think this guiding principle is important for the Action Plan and for the region and deserves a robust discussion; BPA should define a specific process and path forward.
- For demand response, develop a workplan—with dates, timelines, venues, and metrics for evaluation—for how BPA staff will implement a demand response program in coordination with customers and regional stakeholders.

In coordination with this Action Plan, BPA should:

- Do a deep dive into impacts on BPA programs and customers and reevaluate the Action Plan target, once federal programs related to building efficiency and electrification have more structure.
- As a board member and funder of NEEA, push for significant investment in NEEA’s electric Cycle 7 business plan to capture all cost-effective efficiency available to the region.
- Evaluate whether to restart meetings of the Regional Low Income Energy Efficiency Workgroup, which does not seem to have met since early 2021.
- Consider any changes to energy efficiency program implementation that could influence acquisition in the Post-2028 contracts as part of its policy development for Provider of Choice. BPA should also ensure that it is not devaluing customer self-funded energy efficiency in the Provider of Choice process, while simultaneously assuming that customer self-funded savings will contribute meaningfully to BPA meeting its efficiency target.

Further Comments

I Won't Back Down: The Region Needs BPA's Leadership on Energy Efficiency

Historically, BPA has contributed substantially to regional progress on energy efficiency by coordinating and helping achieve public power's share of our region's targets. Energy efficiency program investments are fiscally sound and smart for the region - they keep rates low for customer utilities, reduce bills and improve health and comfort for end use customers, and provide jobs and other financial benefits to businesses, schools, communities institutions, and public agencies.

Looking to the future, BPA's energy efficiency acquisitions will become even more valuable for both BPA and the region. Unfortunately, the historic cost-effectiveness framework for evaluating energy efficiency versus other resources does not adequately value the full benefits of energy efficiency, including resiliency and equity.

In reviewing this Action plan, first, we appreciate that BPA acknowledges in its guiding principles that we should consider value of efficiency beyond just energy savings including, "economic, environmental, and resiliency benefits." We agree, and look forward to working with BPA as the agency begins to better quantify these benefits. As part of the final Action Plan, we recommend that BPA provide information on when and how BPA will evaluate the non-energy benefits of energy efficiency. We think this guiding principle is important for the Action Plan and for the region and deserves a robust discussion; BPA should define a specific process and path forward. There are already aspects of this conversation underway with Washington investor-owned utilities and the Washington Utilities and Transportation Commission, as well as the NW Power and Conservation Council, which could help inform BPA's work in this area.

While the Action Plan does not yet quantify these other efficiency benefits, we appreciate that the program planning does take steps to focus on measures that provide multifaceted benefits to BPA's customers and to the power system during times of greatest system need, including high-value HVAC measures and weatherization. We have supported BPA's work to develop the Comfort Ready Home initiative, and we also support efforts to remove barriers for customers participating in low-income weatherization programs. Previously, BPA convened a Regional Low Income Energy Efficiency Workgroup, but this group does not seem to have met since early 2021. We recommend BPA evaluate whether a regrouping of this workgroup could help inform what barriers BPA could influence as part of low-income weatherization programs.

While we have these positive aspects of the plan in mind, we are concerned with some major aspects of the plan. Namely, the efficiency target that BPA has set of 300 aMW is not ambitious enough to capture the needed efficiency acquisition the region needs. Moreover, for various reasons BPA risks not meeting even that lackluster target.

As we have noted in other venues, the 2021 Power Plan target for conservation for the region, and for BPA, is far too low and does not account for the increasing scale and need for electrification or value the other attributes of conservation that BPA notes are important. We recommend BPA develop a "stretch target" for energy efficiency that better accounts for expected increased electrification in the region and the not-yet-accounted-for values of energy efficiency that BPA notes are important, including resilience and equity. In addition, once federal programs related to building efficiency and electrification have

more structure, BPA should do a deep dive into impacts on BPA programs and customers and reevaluate the Action Plan target.

At the same time, we risk history repeating itself and BPA again missing its own targets if there is not serious evaluation of structures and past implementation. While the COVID pandemic obviously had significant impacts on efficiency acquisition in the region, BPA was already showing signs of missing its efficiency target before the start of the pandemic. As we noted in our comments on BPA's BP-22 Integrated Program Review (IPR) from July 2020, "BPA has failed to reach its share of regional energy efficiency acquisition every year of the Seventh Plan period. Furthermore, over three IPR timeframes, BPA has failed to take any corrective action to remedy the energy efficiency shortfall..." Knowing and acknowledging why BPA's efficiency programs have missed targets will help BPA course-correct in its future implementation and provide confidence to the region that BPA will acquire this resource in this action plan.

Structurally, we see other issues that make us concerned that BPA will not reach its target:

1. **Mismatch between eastside and westside states:** While, on aggregate, efficiency potential as evaluated through the conservation potential assessment framework is declining, much of the efficiency that was previously available to Idaho and Montana utilities still remains available. We appreciate the focus that this plan has on meeting the needs of small and rural utilities – we suggest that BPA create a targeted plan to ensure that energy efficiency acquisition is equitably achieved in the eastern part of BPA's service territory, where particular challenges must be overcome for the benefit of those customers and the region as a whole.
2. **Overreliance on utility self-funding:** BPA continues to estimate that about 30% of programmatic efficiency achievement will come from utility self-funding programs. Related to the above point, that utility self-funding does not happen equitably in the region, but instead approximately 90% of the achievement comes from just six utilities on the westside of BPA's territory. This Action Plan should describe risks to the program and Action Plan if estimated utility self-funding amounts (estimated at approximately 30%) do not materialize, or the implications of what happens when these investments do not materialize equitably across the region. Relatedly, as part of the Provider of Choice discussions, BPA should also ensure that it is not devaluing customer self-funded energy efficiency in the Provider of Choice process, while simultaneously assuming that customer self-funded savings will contribute meaningfully to BPA meeting its efficiency target.
3. **Continued reliance on momentum savings:** We appreciate that BPA has lowered its reliance on momentum savings for this Action Plan and is considering risk mitigation measures related to this savings category. We would further note that, as BPA has lowered conservation investment over the years, it seems that it is harder to quantify the magnitude of momentum that can readily attributed to BPA programs and efforts, versus other actors in the region.

Something Good Coming: Investment in NEEA

The Northwest Energy Efficiency Alliance (NEEA) pools resources and share risks to transform the market for energy efficiency to the benefit of consumers in the Northwest. BPA is not only a funder of NEEA, but the organization's largest funder, and Ms. Creecy is a key board member, currently serving on the executive committee for the alliance's Board.

The NW Energy Coalition is closely watching as NEEA develops its Cycle 7 Business Plan, which will direct operations for 2025-2029. NEEA's efforts, due to its regional reach and pooling of utility resources, result in very low-cost efficiency savings with long-term effect. At the NEEA Board Meeting on March 13, 2023, we were pleased to hear support, especially from some consumer owned utilities, for NEEA's budget to aim to get as much cost-effective savings as possible. We were, however, troubled to hear Ms. Creecy note that, if the NEEA budget was developed on a higher end to get those savings, that BPA would need to find cost reductions elsewhere in BPA's own energy efficiency budget.

We understand that BPA has a budget setting process that is somewhat at odds with the various resource planning and acquisition timeframes, but we also know that BPA has an obligation to acquire all cost-effective efficiency. As a board member and funder of NEEA, BPA should push for significant investment in the electric Cycle 7 business plan that captures all cost-effective efficiency available to the region, and then work within its own future budget setting processes to ensure that BPA has the resource to contribute to NEEA's work.

Stop Dragging my Heart Around/Learning to Fly: Demand Response

Demand response has been a topic of conversation around BPA for many years, with actual discussion in resource planning documents starting in 2018. In 2018, BPA first contracted for a Demand Response potential assessment as part of the 2017-2018 Resource Program, and then the 2018 Resource Program identified demand response as a potential economically effective solution for meeting BPA's summer capacity needs.¹ The 2020 Resource Program, however, did not find demand response in the least-cost portfolio for BPA.² And then in 2022, the Resource Program again found that demand response was needed – with 213 MW summer and 158 MW winter in the two year timeframe.³

With the back and forth direction from BPA's resource program, we can understand to some extent the lack of action on developing this resource more fully. However, all indications from the 2021 Power Plan and from other regional resource adequacy efforts are that demand response efforts need to ramp up sharply.

As BPA's Interim Planning & Evaluation Manager, Bonnie Watson noted in presentation before the Power Council on March 14, "Bonneville cannot do demand response on our own", which is true.⁴ However, demand response is a regional resource that BPA needs and BPA's customers, especially smaller customers, will likely need support to get these efforts off the ground.

The current discussion on demand response in the draft Action Plan is limited and vague given the urgency and timeline over which this acquisition needs to happen. At a minimum, BPA should, as a part of this Action Plan, develop a workplan—with dates, timelines, venues, and metrics for evaluation—for how BPA staff will implement a demand response program in coordination with customers and regional stakeholders.

¹ BPA 2018 Resource Program. <https://www.bpa.gov/-/media/Aep/power/resource-program/2018-resource-program.pdf> (page 3).

² BPA 2020 Resource Program. <https://www.bpa.gov/-/media/Aep/power/resource-program/2020-resource-program-final-9-9-20.pdf> (page 6).

³ BPA 2022 Resource Program. <https://www.bpa.gov/-/media/Aep/power/resource-program/2022-resource-program.pdf> (page 23).

⁴ NW Power and Conservation Council, Power Committee. March 14, 2023 Meeting. Comments of Bonnie Watson.

Handle with Care: Implications between Provider of Choice Policy and Energy Efficiency

We noted above some concerns with the Provider of Choice discussions and the interplay with the policy around how efficiency is acquired by customer utilities, but it bears repeating here. The draft Action Plan notes, “The Provider of Choice process will influence many facets of BPA’s relationship with its power customers, including how the agency acquires energy efficiency.” This is true, and there are many ways in which changes to post-2028 contracts could change the magnitude and structure of how much efficiency BPA is able to acquire through its customers. While technically outside the timeframe of this Action Plan, the discussion around utility self-funding could introduce risk into this Action Plan time period. As part of the Provider of Choice process, BPA should ensure that it is not devaluing customer self-funded energy efficiency, while simultaneously assuming that customer self-funded savings will contribute meaningfully to BPA meeting its efficiency target. In public meetings, at least one customer has suggested that BPA’s energy efficiency program should be 100% funded through BPA’s EEI in the future – this signals that customers are not getting a fair deal from BPA for their self-funded savings.

In sum, there is a lot to be excited about for the future: BPA has new and emerging opportunities to build up its energy efficiency programming and demand response programming by collaborating with utility customers and communities, and the federal administration direction seems clear—there will be a lot of federal funding to help with the clean energy transition. Customer side resources are the key piece to that clean energy transition, and we need BPA to be a leader for the region on these issues. We look forward to an improved final Action Plan, as well as further coordination and collaboration in the future with BPA staff.

Sincerely [*End of the Line*],

Lauren McCloy
Policy Director

Fred Heutte
Senior Policy Associate

Diego Rivas
Regulatory Counsel

Amy Wheelless
Senior Policy Associate

With credit to Tom Petty and the Heartbreakers

March 6, 2023



Elena Kazarov
Bonneville Power Administration
905 NE 11th Ave.
Portland, OR 97232

Thank you for providing the opportunity to review Bonneville's draft 2022-2027 Energy Efficiency Action Plan.

We appreciate you and your team taking the time to present the Plan at NEEA's office last week.

After reviewing the document and hearing your presentation, NEEA staff would like to express its support for the 2022-2027 Energy Efficiency Action Plan and the strategic priorities that the agency has defined.

We appreciate Bonneville's ongoing leadership and commitment to advancing energy efficiency in the Northwest.

Sincerely,

A handwritten signature in black ink that reads "Becca Yates".

Becca Yates,
Executive Director
NEEA

Dear Colleagues,

Thank you for providing an opportunity to comment on BPAs draft EE action plan.

My main comment about the plan is that it is VERY underspecified on equity.

The main focus on equity is about portfolio equity between utilities.

There is a comment about social equity but it is limited to low-income households. Equity should be defined in more modern terms and include households of color, underserved populations, marginalized populations etc.

There is a big push for electrification in the region for decarbonization and resilience purposes which typically includes heat pump technologies.

But, these technologies are being adopted by single-family detached, white and Asian households.

Barring significantly more aggressive program incentives and community partnering, they will remain out of reach of underserved households.

Please include explicit targets for reaching out to these customers.

Also, BEETs and BPA funding should require that implementers track the race and ethnicity of residential (and also small commercial) EE measure installations.

Thanks for including these comments in the final version of the action plan.

All the best,

Hal Nelson, Ph.D., CFA (he/him)

Associate Professor

Mark O. Hatfield School of Government

HNelson@pdx.edu

3/2/2023

Energy Efficiency Action Plan Public Comment

I support the draft energy efficiency action plan. Energy efficiency is absolutely crucial to mitigating climate change, as we need to electrify nearly everything – drastically increasing the demand for energy. Maximizing energy efficiency is how we can do that most effectively, to ensure that we're able to use our energy resources to the greatest possible extent.

Sincerely,
Jack Hogan