



Energy Efficiency Action Plan 2022-2027 Update



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Introduction

The Bonneville Power Administration (BPA) and its public power customer utilities are leaders in promoting energy efficiency in the Pacific Northwest. In accordance with the Pacific Northwest Electric Power Planning and Conservation Act of 1980 (Northwest Power Act), BPA acquires and encourages the development of energy conservation to maximize the value of the Federal Columbia River Power System and reduce the agency's need to acquire other resources to supply firm power to its customers. Since the early 1980s, the agency has acquired more than 2,590 average megawatts (aMW) in electricity savings through energy conservation efforts to help meet the agency's power resource needs. While the regional energy landscape has evolved significantly since the passage of the Northwest Power Act, energy conservation remains a proven, reliable, and cost-effective resource for BPA, its customers, and the region.

The [BPA Energy Efficiency Action Plan](#) (Action Plan) published June, 2023 serves as the agency's roadmap for meeting its energy conservation goal of 300 aMW from 2022 through 2027. This planning document created an operational strategy for achieving objectives set forth by BPA Power Service's 2022 Resource Program and the Northwest Power and Conservation Council's 2021 Power Plan. It identified individual sector and program targets, and strategic opportunities within existing markets to achieve conservation goals.

The Energy Efficiency Action Plan 2022-2027 Update highlights BPA's progress toward meeting its energy conservation goals and provides refinements to:

- Energy Savings Forecast
- Cost Forecast
- Conservation Purchases Costs
- Sector Strategies
- Market Transformation Savings
- Momentum Savings

Energy Savings Forecast

In the FY 2022-2023 rate period, BPA acquired 89.6 aMW of programmatic conservation. Conservation Purchases (Energy Efficiency Incentive (EEI) funded programs) resulted in 79.1 aMW of energy savings and an additional 10.5 aMW of savings was delivered through Market Transformation activities led by the Northwest Energy Efficiency Alliance (NEEA). While activity slowed during these two years, BPA remains on track to exceed its 300 aMW energy conservation goal.

The Agricultural, Federal, Industrial, Residential, and Utility Distribution sectors met or exceeded their two-year targets. Industrial efficiency was an area of significant success, exceeding the forecast by more than 25 percent at a cost of less than \$0.12 per kilowatt hour (kWh). Supply chain constraints, high equipment costs, and uncertainty over the impact of federal legislation targeting energy efficiency are contributing to project delays and increased costs across all sectors.

Based on FY 2022-2023 energy savings results, market drivers, and new data, BPA has reduced its six-year forecast from 358.4 aMW to 340.7 aMW. The following factors influenced the adjustment:

- Lower than anticipated Commercial sector savings acquisition forecast
- Oregon code legislation that will reduce nonresidential lighting savings in the final years of the Action Plan
- A small reduction in NEEA's Market Transformation savings forecast

Incremental adjustments to planning forecasts are expected given the time horizon covered by the Action Plan. Table 1 represents the overall change in the forecast by savings type.

Table 1. BPA Energy Savings Forecast by Sector and Rate Period

Savings Category	FY 22-23 (aMW)		FY 24-25 (aMW)		FY 26-27 (aMW)		Total Forecasted Energy Savings (aMW)		Change	
	Original Forecast	Actual	Original Forecast	Updated Forecast	Original Forecast	Updated Forecast	Original	Actuals + Updated	AMW	%
BPA Programs	90.6	79.1	95.9	95.9	90.3	88.3	276.8	263.3	-13.5	-5%
Market Transformation	10.3	10.5	17.5	14.7	23.8	22.2	51.6	47.4	-4.2	-9%
Total Programmatic Savings Forecast	100.9	89.6	113.4	110.6	114.1	110.5	328.4	310.7	-17.7	-5%
Momentum Savings							30.0	30.0	0.0	0%
Total Savings Forecast	100.9	89.6	113.4	110.6	114.0	110.5	358.4	340.7		-5%

Note: Market Transformation savings have been corrected to apply a busbar adjustment that should have been included in the original Action Plan forecast.

Cost Forecast

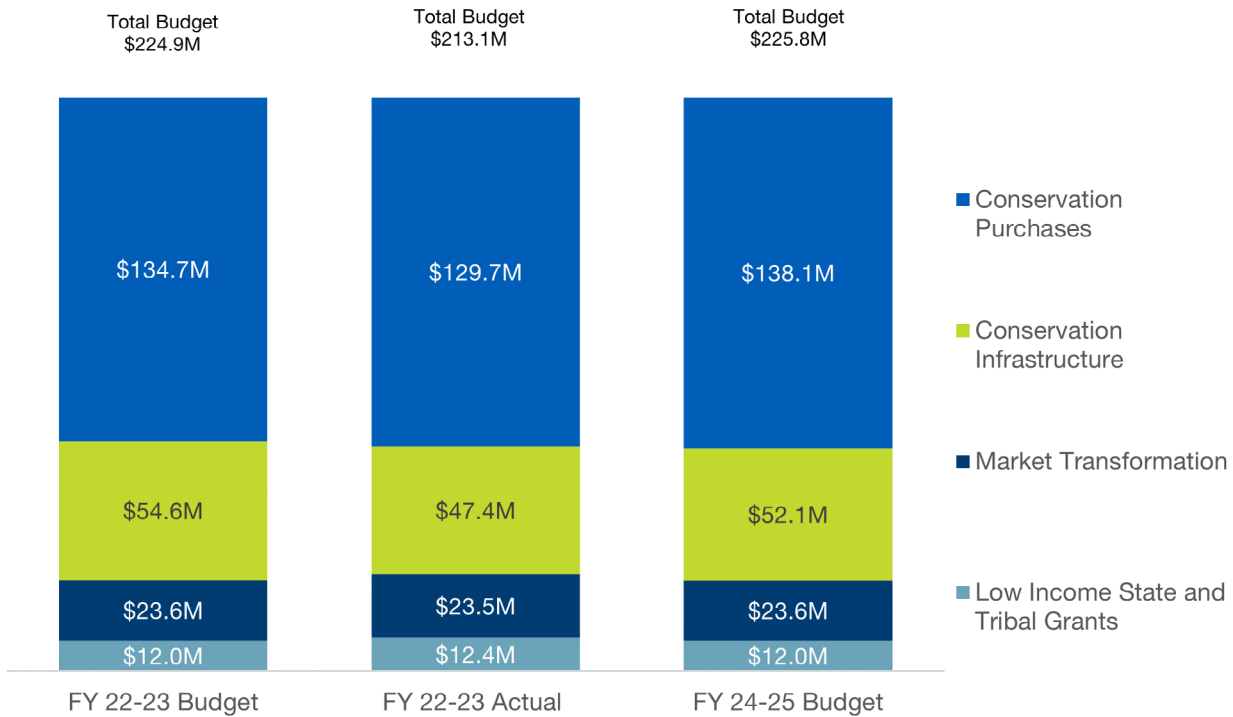
BPA forecasts program expenses and capital costs to enable rate-setting for each rate period an Integrated Program Review (IPR) is conducted to provide customer utilities and interested parties an opportunity to review and comment on BPA's proposed funding levels for the next rate period. The Action Plan forecast does not include unknown costs for future IPR processes. Table 2 describes costs by category.

Table 2. Energy Efficiency Program Categories

Category	Description
Conservation Purchases (EEI funded programs)	BPA costs to acquire conservation from customers, including performance payments and Energy Smart Reserved Power. This spending category is the primary focus of the Action Plan. BPA estimates that EEI funds will support 70 percent of program savings.
Conservation Infrastructure	BPA's support for programs and operations, including staff costs, third-party program implementation and contract support, market research, evaluation, and emerging technologies.
Market Transformation	BPA's support for NEEA's market transformation initiatives. NEEA works to remove barriers to market adoption of energy efficiency and capitalizes on opportunities to accelerate adoption of cost-effective energy efficiency. Starting in FY 2025, BPA is increasing its funding to support the implementation of NEEA's 2025–2029 business plan.
Utility Self-Funded Conservation	BPA estimates that approximately 30 percent of energy savings will come from utility self-funded measures. This assumption occurs universally across all sectors and programs and is consistent with historical ratios of EEI funded to self-funded savings.

For the four years combined, the forecasted total cost of conservation infrastructure, market transformation, low income and tribal grants, and EEI savings is \$450.7 million. Figure 1 shows the costs for each category for the FY 2022-2023 and FY 2024-2025 rate periods.

Figure 1. BPA Costs by Source and Rate Period



Conservation Purchases Costs

Within the Conservation Purchases category (EEI-funded programs), BPA developed cost estimates by sector. Table 3 shows forecasted costs by sector for the FY 2022-2023 rate period compared to actual spending and only includes BPA’s estimated cost for EEI-funded programs. Market transformation and conservation infrastructure costs are not included.

Table 3. BPA Program Conservation Purchases (EEI) Cost by Sector

Sector	Estimated Cost FY 22-23 (\$ Millions)	Actual Cost FY 22-23 (\$ Millions)
Unallocated Savings	\$34.5M	N/A
Residential	\$31.8M	\$60.1M
Commercial	\$28.8M	\$30.7M
Industrial	\$25.1M	\$28.5M
Agricultural	\$4.2M	\$5.0M
Federal	\$3.8M	\$2.8M
Utility Distribution	\$0.8M	\$2.7M
Total	\$128.9M	\$129.5M

Note: BPA estimated costs for unallocated savings as a top-down forecasting exercise when the Action Plan was published. The actual cost for unallocated savings is embedded in each sector’s actual cost values based on program savings achievements. Table sums do not add up due to rounding.

Sector Strategy

BPA's Energy Efficiency program provides a suite of measures customer utilities can implement within their service territories. Various infrastructure programs offer customers sector specific support and technical expertise which facilitates unique approaches to acquiring high-priority energy savings.

Agricultural Sector

FY 22-27 Total Savings Forecast: 9.1 aMW

FY 22-23 Forecast: 2.4 aMW

FY 22-23 Actual: 3.6 aMW



Greatest Contributions

- Irrigation Hardware Upgrades and System Conversions
- Motors and Drives

Priorities for Change

- Regularly reassess UES incentive levels and increase incentives to account for incremental cost increases based on supply chain issues and inflation.
- Support utilities in promoting and implementing the newly released agricultural energy audit measures.

Landscape Assessment

The market challenges of high costs, supply chain concerns, and the uncertainty of water availability persist in the Agricultural sector; but opportunities remain in irrigation, motors, and transformer de-energization. The irrigation and motor and drives channels, which include hardware, irrigation system conversions, pump upgrades, and variable frequency drives (VFDs) for pump measures, have continued to perform at forecasted levels. These two channels are the largest contributors to targets, comprising 65 percent of savings for the Agricultural sector. Supply chain issues and higher equipment costs contributed to delays or postponement of large motor and drive upgrades, yet BPA acquired 2.3 aMW of savings in those two channels.

Utility distribution system channel (transformer de-energization) outperformed expected energy savings levels, comprising 20 percent of the savings achieved with limited customer participation. Focused outreach from BPA Energy Efficiency staff will help expand utility involvement and savings. Heating, ventilation, air conditioning (HVAC) measures, specifically thermostatically controlled outlet device measures, had significant energy savings relative to past years and outperformed its forecasted savings. A small number of utilities experienced a significant demand for these devices, accounting for the unexpected increase. Due to ongoing product demand, energy savings from this channel are expected rise.

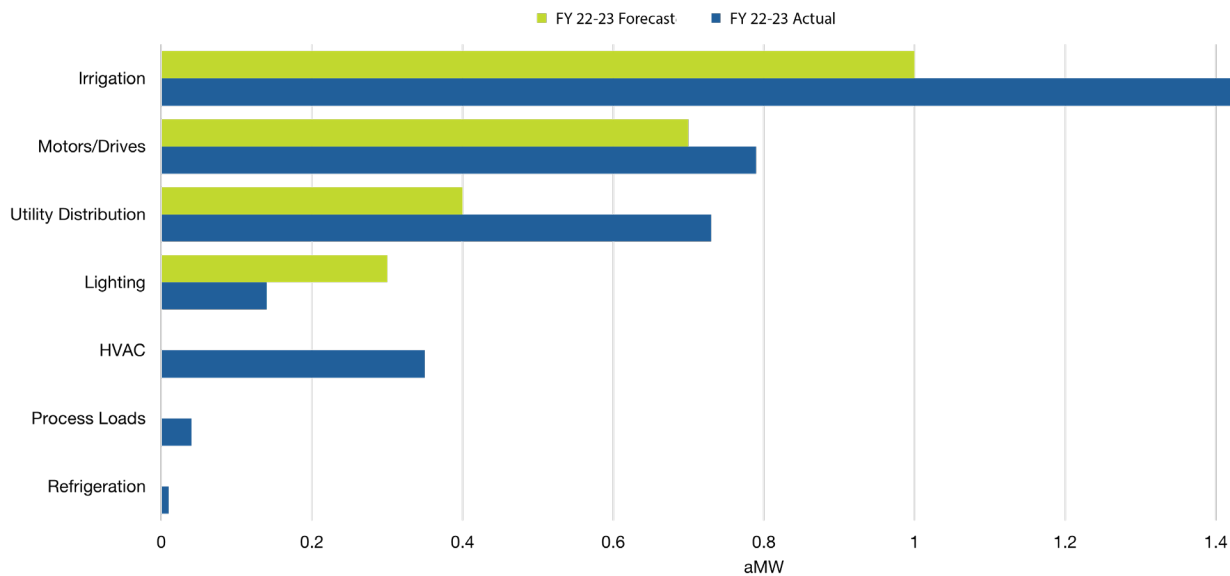
Lighting channel acquisitions underperformed compared to the initial energy savings forecast. While there are likely several contributing factors, dwindling agricultural related lighting opportunities may be attributable. Process load and refrigeration channels contributed low energy savings as forecasted. This trend will continue since market demand for those products has historically been low.

BPA is proactively engaging with agricultural customers on relevant sector topics and offerings through quarterly Agricultural Utility Group (AUG) meetings. The platform offers opportunities to share industry success stories and promote recent incentive increases, agricultural energy audit measures, and address industry concerns.

Strategic Opportunities and Approach

The Agricultural sector will continue to invest in demonstration projects to promote zonal variable-rate irrigation conversions and advance water management irrigation scheduling. In FY 2024-2025, BPA increased incentives ranging from 30-40 percent for irrigation hardware upgrades and system conversions as well as motor and drive measures. These increases are not expected to impact savings acquisitions until the next fiscal year. The sector will regularly reassess unit energy savings (UES) incentive levels and adjust as necessary to align with increases in incremental costs associated with supply chain issues and inflation.

Agricultural Sector Savings Forecast vs Actual



Building a robust portfolio of measures and exploring opportunities to promote and implement the newly released agricultural energy audit measures and to holistically identify potential energy efficiency improvements at agricultural producers' sites remains a priority. The agricultural energy audit is a requirement for producers to apply for grants or loans from the United States Department of Agriculture's Renewable Energy for America Program (REAP). Enhanced marketing efforts can lead to more uptake in irrigation hardware upgrades, irrigation system conversions, VFDs for pumps, efficient pump measures, and potentially lighting upgrade measures.

Recruitment of irrigation crop farmers for the zonal variable rate irrigation (ZVRI) demonstration pilot is an area of concern. The pilot launched in March 2023 and it has had minimal uptake. While BPA is unsure of the factors leading to low activity, it remains a high priority for the Agricultural sector. Similar barriers may exist for a planned advanced water management pilot using Precision Irrigation Agricultural (PIA) measures. BPA will use existing research data results to aid in the development of potential BPA-Qualified measures for ZVRI and PIA measures.

Changes in business operations and regional attention to water conservation efforts led to the initial development of a Strategic Water and Energy Management (SWEM) program. Once SWEM is fully developed, it will provide a multi-cohort demographic-based vehicle for identification of UES measures, custom projects, and operational energy savings at agricultural production sites. It will also encourage producers to complete their REAP grant or loan submission for implementing their energy efficiency projects.

Forecast Update

The initial Agricultural sector energy savings forecast for FY 2024-2027 remains realistic. Though lighting channel energy savings will likely under perform, the irrigation, motor and drive, and HVAC savings channels will minimize that impact.

Commercial Sector

FY 22-27 Total Savings Forecast: 94.5 aMW

FY 22-23 Forecast: 26 aMW

FY 22-23 Actual: 20.6 aMW



Greatest Contributions

- Nonresidential Lighting
- Custom Projects

Priorities for Change

- Address rising material and building installation costs.
- Increase market awareness of new UES measure offerings.
- Support customer engagement with commercial energy management measures.
- Incorporate new state laws and building performance standards.

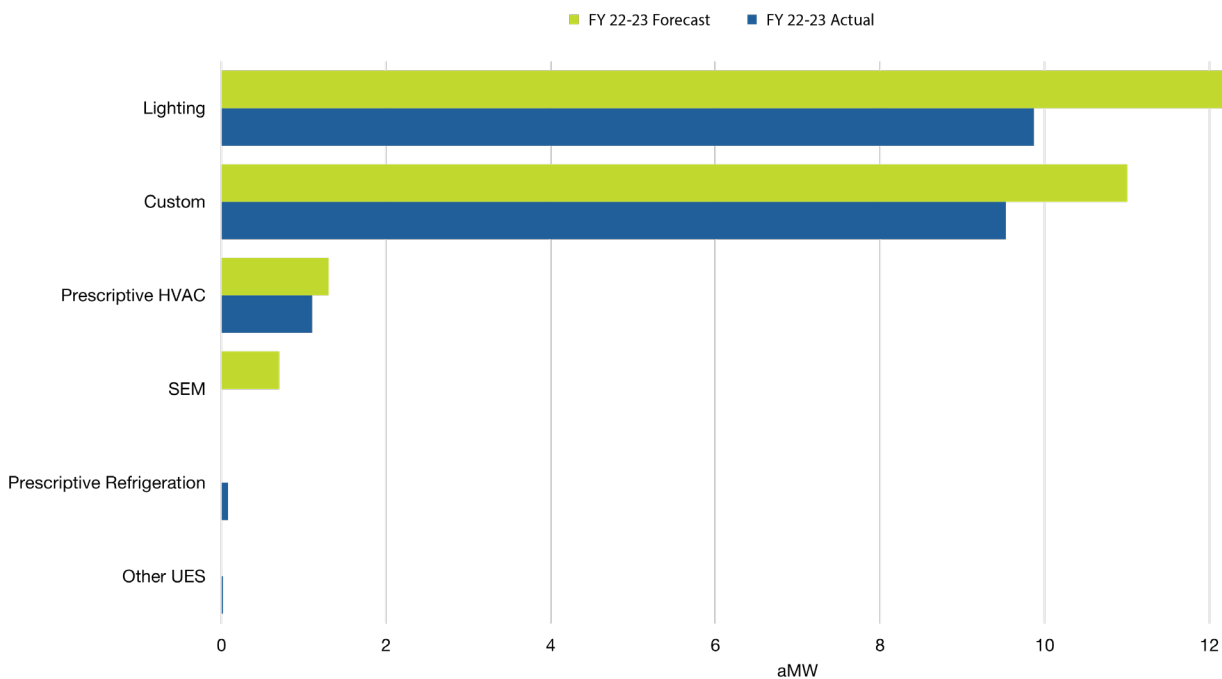
Landscape Assessment

Nonresidential lighting represented the largest source of savings in the Commercial sector in the last rate period at 9.9 aMW, despite being nearly 25 percent below forecasted savings. The average savings for commercial lighting projects was consistent with historical trends, but the reporting of light emitting diode (LED) tube replacements declined considerably, most likely a result of reduced incentives.

Savings from the custom projects channel was the second largest contributor to the Commercial sector target at 9.5 aMW, or 46 percent of savings. Reported custom projects covered a wide range of building systems, but those associated with lighting, HVAC, and refrigeration end-uses stand out for their savings impact. Savings from commercial Strategic Energy Management (SEM) engagements were also reported in the custom projects channel as customers began the transition to a new distinct SEM measure structure during this rate period.

HVAC UES measures contributed 1.1 aMW to Commercial sector savings this rate period. Air-source heat pumps, ductless heat pumps, and packaged terminal heat pumps were the most reported measures in this category.

Commercial Sector Savings Forecast vs Actual



Strategic Opportunities and Approach

The commercial sector strategic priorities remain focused on adding new measures in areas such as HVAC, refrigeration, and energy management. BPA added seven new commercial UES measures in the [2024-2025 Implementation Manual](#) (IM), including midstream lighting, secondary windows, refrigerated case door retrofits, floating controls for multiplex refrigeration systems, efficient pumps, variable frequency drives for pumps, and efficient heat recovery ventilators (HRVs). Significant incentive increases were implemented for networked lighting controls, LED tubes, commercial SEM, and custom projects were also included in the IM. Efforts are underway to develop a web-based replacement for the current spreadsheet-based nonresidential lighting calculator.

To better align resources with market needs, changes to the Trade Alley Network Northwest (TANNW) program are being implemented. BPA is developing a web-based nonresidential lighting calculator, which will address cyber security concerns and reduce the high administrative costs associated with the current platform.

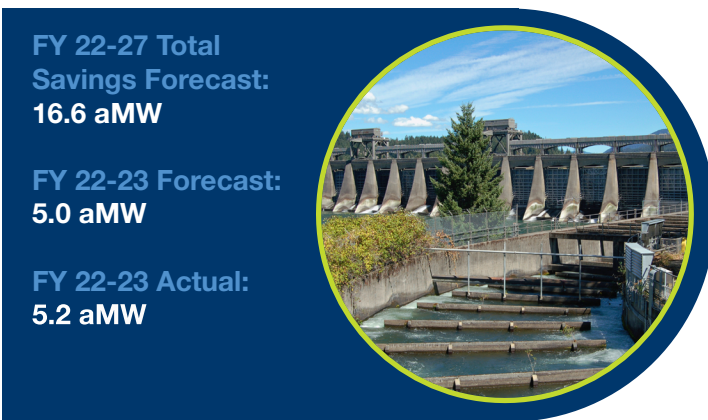
TANNW field staff will provide lighting project development and BPA customer service engineers will resume the lead role in providing technical expertise for all commercial UES measures to better support projects that include both UES and custom components. Marketing efforts will promote lighting and HVAC measures, and expand to include pumps, refrigeration, and water heating.

Several customers are implementing midstream nonresidential lighting programs concurrently with their traditional programs that focus on end-users and installing contractors. The midstream programs leverage several new measures that BPA added to the IM in 2024 and target distributors willing to offer point-of-sale reductions for efficient lighting equipment. BPA is monitoring this activity to ensure there is no double counting between the midstream and downstream offerings. It is also evaluating the potential to expand the types of equipment covered to include LED fixtures and Luminaire Level Lighting Controls (LLLC).

Forecast Update

The initial Commercial sector energy savings forecast for FY 2024-2027 has been reduced slightly. Oregon's ban on linear fluorescent lamp sales becomes effective January 1, 2025, making LEDs the new baseline by default. The passing of this legislation was not anticipated in the initial release of the Action Plan. As a result, BPA is reducing forecasted lighting savings by 2 aMW for the FY 2026-2027 rate period. All other forecasts remain realistic.

Federal Sector



Greatest Contributions

- Custom Process
- Irrigation Water Delivery Improvement

Priorities for Change

- Assess the Process UES measure incentive levels to account for incremental cost increases in technologies, supply chain issues and inflation.
- Develop and deploy technical study measures to support opportunities in water delivery infrastructure.

Landscape Assessment

Supply chain challenges and higher equipment costs have caused Energy Smart Reserved Power (ESRP) program energy efficiency improvement delays or postponement for larger pump upgrades. Both Custom and UES process channels are performing to forecasted levels, representing 4.8 and 0.4 aMW of savings in the FY 2022-2023 rate period, outperforming the expected forecast by 14 percent. The process channel consists of custom measures like canal lining and water management controls, and UES measures including pumps and drives.

The Custom Process channel, including irrigation water delivery improvement related measures, represented the

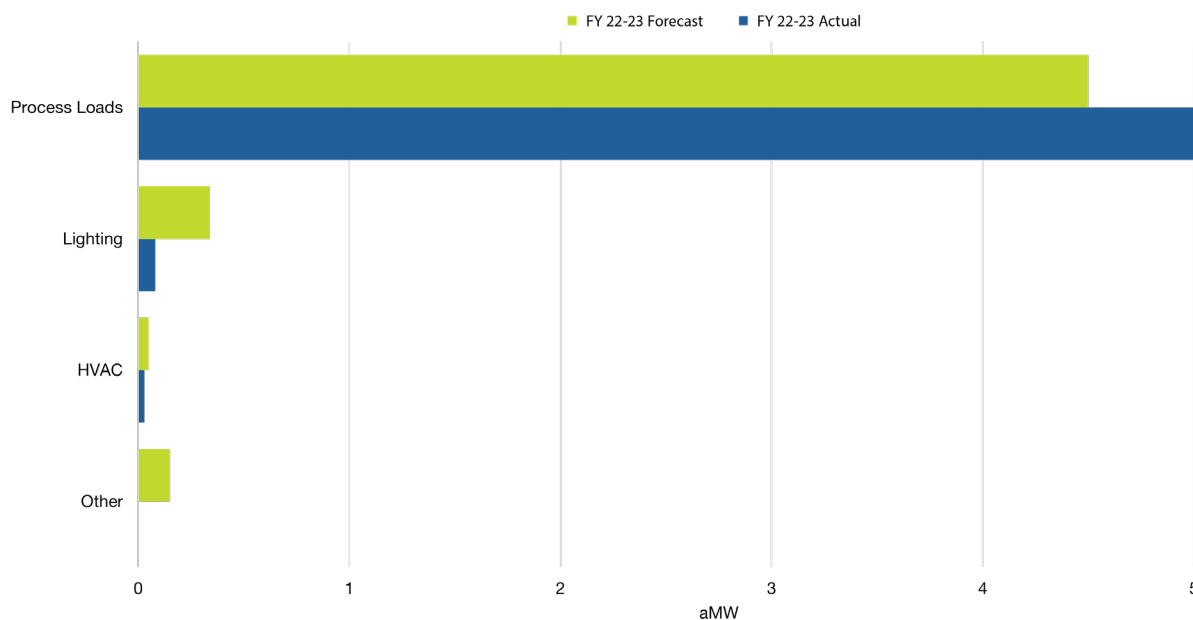
largest contributor of energy savings in the last rate period. The Federal sector continues to work closely with ESRP program participants, conducting informative solicitation webinars, and providing expert technical support in identifying energy efficiency opportunities and assistance in completing required documentation.

The incentive application solicitation period for FY 2024-2025 opened earlier than previous years. Announcing this process in April 2023 enabled participants to submit incentive applications during a time of the year with less time constraints, resulting in earlier submissions and more applications for FY 2024. The same has not held true for FY 2025, the program has received few incentive applications at the time of publication. While there may be many contributing factors, energy efficiency projects may not be fully vetted by program participants to submit an incentive package for FY 2025.

Lighting upgrade measures in this sector mostly occur at federal agency sites (e.g., U.S. Bureau of Reclamation, U.S. Army Corp of Engineers, and BPA transmission facilities). Rising material and installation costs, coupled with relatively small projects, contributed to under performance in this channel, acquiring 0.08 aMW of the forecasted 0.34 aMW of energy savings.

HVAC upgrades underperformed in this channel acquiring 0.03 aMW of energy savings, which is not a significant contributor to the overall sector forecast. HVAC upgrades for program eligible sites represent extremely small energy efficiency opportunities.

Federal Sector Savings Forecast vs Actual



Strategic Opportunities and Approach

The Federal sector remains focused on streamlining operations, improving access to programs and performing a market potential assessment to identify projects with higher benefit-cost ratios. The ESRP program increased incentives by 30-40 percent for custom and UES measure channels in the FY 2024-2025 solicitation cycle, targeting process UES measures including pump upgrades and VFD for pumps and motors, ensuring the updates were incorporated into the recent solicitation period. The Federal sector will regularly reassess UES measure incentive levels and adjust as necessary to better align with increases in incremental costs associated with supply chain issues and inflation.

Forecast Update

The initial Federal sector energy savings forecast for FY 2024-2027 remains realistic.

Industrial Sector

FY 22-27 Total Savings Forecast:
86.1 aMW

FY 22-23 Forecast:
24 aMW

FY 22-23 Actual:
30.3 aMW



Greatest Contribution

- Custom Projects

Priorities for Change

- Increase market awareness of new UES pump measures, and increased incentives for custom projects and strategic energy management.
- Maximize reach and impact of energy project managers.
- Shift more custom projects to engineering calculations with verification M&V approach.

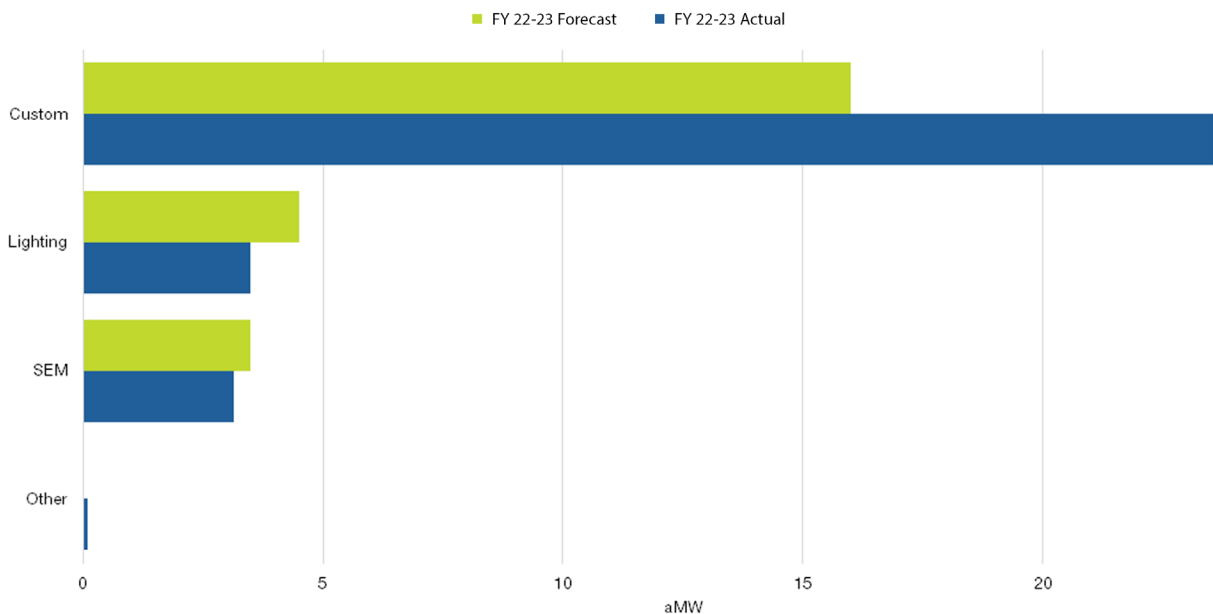
Landscape Assessment

The industrial custom channel represented the largest source of savings in the Industrial sector last rate period at 30.3 aMW. While supply chain issues delayed some custom projects, the completion of several large projects helped the channel exceed BPA's initial forecast.

Lighting and SEM channel savings largely aligned with the initial forecast. In 2022, BPA streamlined the requirements and processes for SEM and Energy Project Manager (EPM) measures. This streamlining, combined with a focused outreach, helped grow the number of facilities with EPMs from less than 10 to over 30 in just two years. Industrial participants in SEM and EPM represent a pathway to growing the pipeline of custom projects to meet future program targets.

A small fraction of industrial savings came through channels not included in the initial Action Plan forecast, including Green Motor Rewind, Small Compressed Air Calculators, and UES measures applicable to the Industrial sector.

Industrial Sector Savings Forecast vs Actual



Strategic Opportunities and Approach

The Industrial sector remains focused on prioritizing lighting and custom projects, and making targeted incentive increases to combat inflation and promote participation in SEM. The Energy Smart Industrial (ESI) program continues to target an array of industries across BPA's service territory. While material and installation costs are on the rise, increased incentives are now available for most custom projects and BPA expects that to help offset rising project costs. Additionally, program activity in the water and wastewater market is expected to grow following incentive increases that were made to several custom measures to more accurately align with the longer measure life calculated for this sub sector.

In FY 2022-2023, the ESI program launched two SEM cohorts using a hybrid approach that included both virtual workshops and on-site project efforts. These cohorts will report most of their SEM savings in FY 2024-2025. Paths to reach small and medium sized industrial facilities with SEM engagements more cost-effectively are also being explored. Adjustments to SEM implementation for smaller sites will likely include more remote delivery of training, streamlined approaches to data collection, and regression model development.

The ESI program is working with industrial facilities and their vendors to take advantage of several opportunities for streamlined program implementation. For example, the program is leading outreach efforts for two new streamlined UES measures for efficient pumps and variable frequency drives on pumps. These pump projects have historically required significant engineering resources as custom projects. The program is also targeting identification of operations-based custom projects for facilities unable to participate in SEM.

Forecast Update

The initial Industrial sector energy savings forecasts for FY 2024-2027 remains realistic.

Residential Sector

FY 22-27 Total Savings Forecast:
56.5 aMW

FY 22-23 Forecast:
14.3 aMW

FY 22-23 Actual:
18.5 aMW



Greatest Contribution

- HVAC

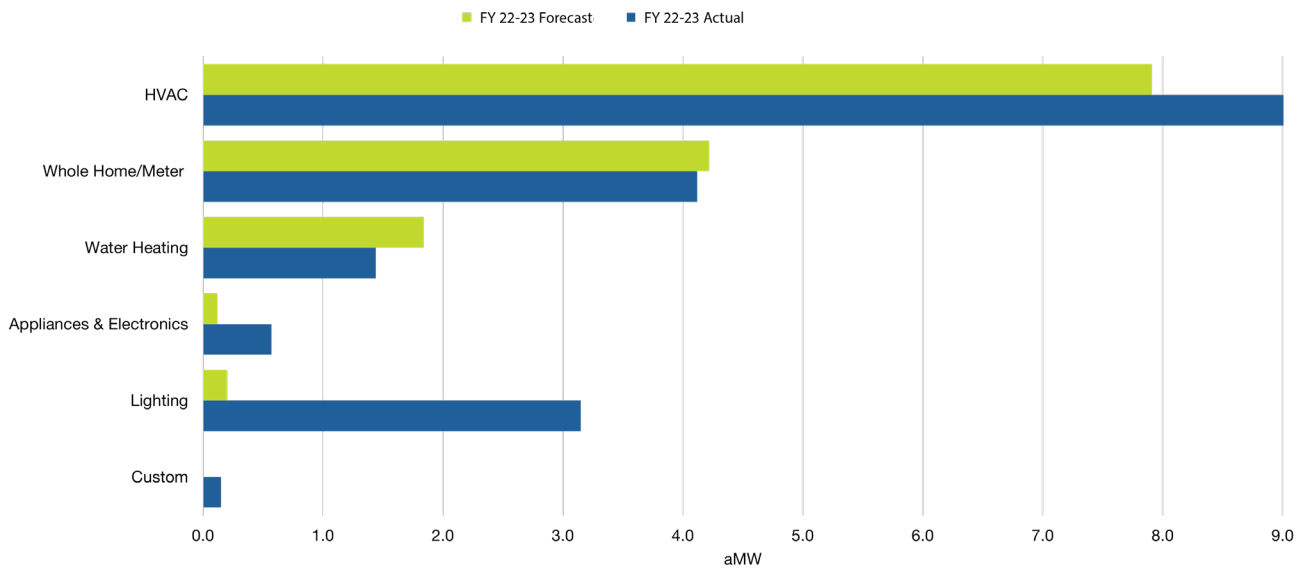
Priorities for Change

- Address material and installation cost increases.
- Overcome contractor hesitations to HPWH installations.
- Increase coordination with regional actors on HVAC.
- Engage smaller customers on Home Energy Report program opportunities.

Landscape Assessment

The HVAC channel constitutes approximately 49 percent of all residential savings acquired in FY 2022-2023, exceeding the initial forecast of 7.9 aMW by nearly 15 percent with 9 aMW saved. The whole building and meter level savings channel held steady as a savings contributor in the Residential sector, yielding 4.1 aMW, which is slightly under the initial forecast, but meeting 98 percent for the rate period goal. BPA's water heating savings channel fell slightly short of forecasted savings yielding 1.4 aMW for the FY 2022-2023 rate period. This downward trend may continue as the region faces significant material, and installation cost increases. Appliances and electronics, specifically washers, dryers, and thermostatic control valves contributed 0.6 aMW and residential lighting acquired 3.2 aMW. Both channels came in above initial forecasted savings.

Residential Sector Savings Forecast vs Actual



Strategic Opportunities and Approach

The Residential sector remains focused on supporting measures that reduce residential heating and cooling load and high-efficiency water heating measures. HVAC savings were the primary contributor to total savings for the Residential sector. In FY 2024, BPA saw a reduced number of projects which is attributed to escalating equipment, material, and installation costs. These factors may influence the ability to sustain acquisition at current levels.

BPA is focused on increasing opportunities for HVAC projects throughout the region while continuing to integrate new technologies, practices, and policies (e.g., decarbonization). In April 2024, new ductless heat pump (DHP) measures for multi-family applications for both standard and low income options were added. BPA is currently developing cold climate heat pump measures and efforts are underway for these new technologies to be offered in FY 2025. Coordination with regional stakeholders including NEEA and the Regional Technical Forum (RTF) is ongoing to identify and advance space heating energy saving opportunities to better serve the region's residential communities.

New efforts are underway in support of water heating projects in the region. BPA is researching larger centralized heat pump water heater (HPWH) technologies for multifamily applications that could provide substantial energy savings in both existing and new construction applications.

BPA's Comfort Ready Home program began offering promotional incentives to participating contractors for the installation of qualifying HPWHs. The program has also increased outreach in small rural residential territories and other underrepresented communities. Market intelligence indicates there is still contractor resistance to HPWH technologies, directly impacting the adoption regionally. While the initial uptake of the promotional incentives has been slower than anticipated, modifications to the marketing strategy with renewed focus on contractor and customer education and outreach is expected to increase program participation.

BPA introduced the electronic Home Energy Report (HER) program in October 2023. Despite the tremendous energy saving potential, recruiting qualified vendors to support a program for smaller utilities remains a challenge. BPA is working with qualified vendors to find solutions that will facilitate the implementation of a HER program for smaller utilities. BPA, in partnership with NEEA, was also able to extend the end date for the Single-Family Performance Path program for two years. This small measure supports both above-code residential construction and the advancement of code in the region.

Forecast Update

In FY 2024, the Residential sector had a slower than expected start due largely to rapidly increasing project costs and limited contractor availability. These challenges notwithstanding, the initial Residential sector energy savings forecast for FY 2024-2027 remains realistic.

Low Income

Savings achieved through BPA's Low Income program are included in the Residential sector's forecasted savings goals. In FY 2022-2023, the program achieved 0.86 aMW of energy savings.

Landscape Assessment

An increased amount of federal, state, and local funding that is specifically dedicated for work performed within disadvantaged communities is currently available and additional funding is anticipated in late 2024 and early 2025. In addition to increasing material, equipment, labor, and installation costs, there is a serious shortage of contractors available to complete low income energy efficiency projects. BPA is tracking these new funding sources and associated requirements to identify opportunities that will support utilities, Community Action Agencies (CAAs), and states who are tasked with balancing these challenges.

These shifts also cause additional challenges as to how utilities and CAAs can partner on project implementation given that CAAs are subject to program and implementation requirements that may not align well with BPA utility program implementation requirements. Many CAAs also face long wait lists and limited staff, further slowing activity in disadvantaged communities. This has motivated some utilities to implement low income programs in-house without the partnership of their local CAA, which can create additional challenges when both entities are providing energy efficiency support in the same home.

Strategic Opportunities and Approach

In FY 2024, BPA acquired conservation through low income programs with its customers, state grantees, tribal grantees, and CAAs. To navigate the changing landscape, BPA increased payment cost caps for several measures to help cover the higher installation cost of weatherization, HVAC, and water heating measures. Several new low income measure options were introduced with an emphasis on increased activity in HVAC and multifamily applications. This included the addition of low income commercial HVAC measures in multifamily shared spaces. BPA also began offering low income appliance measures for clothes washers and dryers, which has already seen a significant uptake.

To simplify the low income qualification process, BPA is now allowing self-attestation of end use customer income by utilities and their partnering agencies. This has been a helpful allowance for some utilities, but other utilities and CAAs are still limited in what they can allow when using dual funding sources to cover costs that may have stricter implementation requirements.

BPA recently completed a comprehensive [Low Income Process Evaluation](#) that included interviews of customers and CAAs, a demographic and uptake analysis, and a national program review for best practice recommendations. This laid the groundwork for making strategic program improvements that will support all program partners. Conclusions and recommendations include improving collaboration amongst utilities and CAAs, aligning utility and grant implementation, and facilitating implementation in multifamily housing. Strategy sessions focused on future program design and improvements are being held internally and externally with the utility Low Income Workgroup and other stakeholders.


BPA is optimistic about the future of its Low Income program, despite the shifting funding landscape, increasing equipment and labor costs, and limited workforce. The newest FY 2024 program updates have been well received by customers and work continues with regional partners to address implementation challenges.

Utility Distribution Sector

FY 22-27 Total Savings Forecast: 2.1 aMW

FY 22-23 Forecast: 0.4 aMW

FY 22-23 Actual: 0.9 aMW



Greatest Contribution

- Distribution system improvements

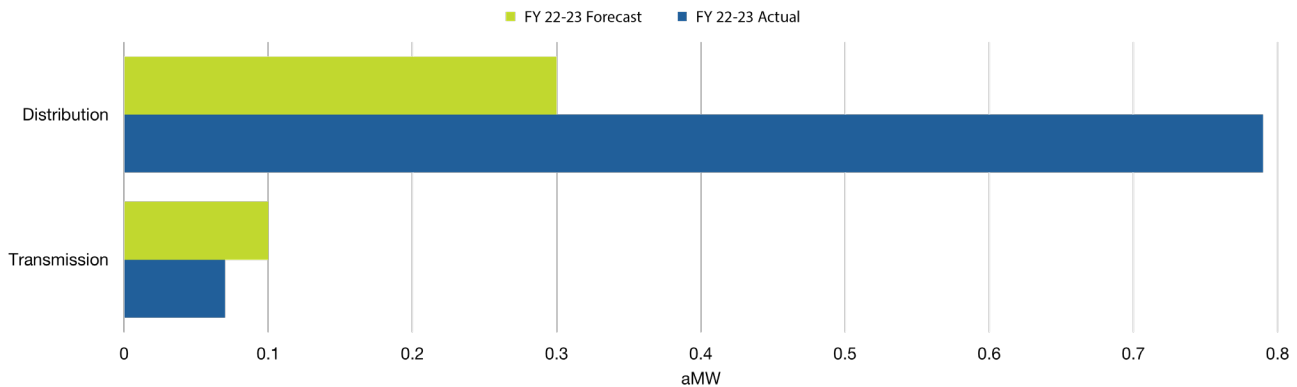
Priorities for Change

- Increase communication with utility management to promote the value of conservation voltage reduction measures.

Landscape Assessment

Focus in the Utility Distribution sector continues to be on distribution system improvements including reconductoring and transformer upgrades that reduce distribution system losses and save energy. BPA staff are building customer awareness of these opportunities and encouraging reporting of ongoing system improvements. In addition, BPA continues to support the implementation of Conservation Voltage Reduction (CVR), when utilities incrementally lower the voltage on their distribution system to save energy while maintaining appropriate end of line voltage standards. While interest in CVR programs has been low due to concerns over lost revenue and competing priorities for efficiency resources, some recent customer interest has emerged.

Utility Distribution Sector Savings Forecast vs Actual



Strategic Opportunities and Approach

The Utility Distribution sector remains focused on increasing communication with utility managers to promote the value of conservation voltage reduction measures and identifying small and mid sized customers which traditionally have not participated in the sector offerings. BPA retains its approach to traditional utility distribution efficiency. BPA staff will continue customer engagement and provide technical support for utility participants.

One notable opportunity in the Utility Distribution sector has emerged with the 2021 Power Plan and 2022 Resource Program results; they selected 300 MW of utility sector technologies that have traditionally been used as demand response to provide an efficiency resource rather than a capacity resource. Demand Voltage Reduction (DVR) provides a low cost, frequently deployable means to save both energy and capacity and serve BPA's efficiency needs. While the Action Plan does not commit to an aMW goal for the implementation of DVR, it holds great promise to deliver low-cost energy savings during this Action Plan period. BPA is actively working with customers to recruit participants in a pilot program to achieve savings potential in this channel.

Forecast Update

The initial Utility Distribution sector energy savings forecast for FY 2024-2027 remains realistic.

Market Transformation

NEEA achieved 10.5 aMW of energy savings for the FY 2022-2023 rate period and anticipates a slight reduction in forecasted savings in FY 2024-2027 by 4.2 aMW. This reduction brings NEEA's total forecasted savings for the six-year period from 51.6 to 47.4 aMW. Several factors influence this reduction:

- Consumer spending data from 2023 showed a decline in new construction.
- Oregon and Washington codes will be implemented later than originally anticipated, pushing associated savings to the end of 2024 at the earliest.
- New Data results from NEEA's Washington Residential Code Evaluation showed that most of the heat pump sales they track in the Northwest in recent years are going into Washington's new construction to meet the state code. These savings are considered a part of the 2021 Power Plan baseline.
- Savings forecast for refrigerators and ductless heat pumps is reduced due to some uncertainty in the datasets. To account for the data uncertainty, NEEA has maintained conservative extrapolation methods which led to a reduced forecast.

Momentum Savings

Momentum Savings occur when an end user chooses an efficient equipment option or action without receiving a financial incentive directly from a utility and not reported as Market Transformation savings. BPA's Action Plan 2022-2027 forecast of 30.0 aMW of Momentum Savings across four core markets (nonresidential lighting, residential HVAC, nonresidential adjustable speed drives, and commercial HVAC) remains unchanged. Since the Action Plan was published in early 2023, BPA developed interim market models for all four core markets.

BPA will complete its interim market models in 2024 before shifting focus to filling data and information gaps through data collection and market research efforts in 2025 and 2026. This period of research and data collection will support BPA's final market models and provide market intelligence to maximize program impact. Work will begin on final models for the six-year period in late 2026, with final savings results in mid-2028.

Looking Forward

The Energy Efficiency program remains focused on savings selected by the Council's 2021 Power Plan and BPA's 2022 Resource Program, prioritizing measures that deliver savings with the cost and shape best suited to meet system needs. BPA will continue to offer a diverse portfolio of measures to help ensure equitable distribution of program benefits across all customer utilities. The agency remains committed to advancing innovative energy solutions to enrich life in the Pacific Northwest and is actively identifying new opportunities.

Bonneville
POWER ADMINISTRATION



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