

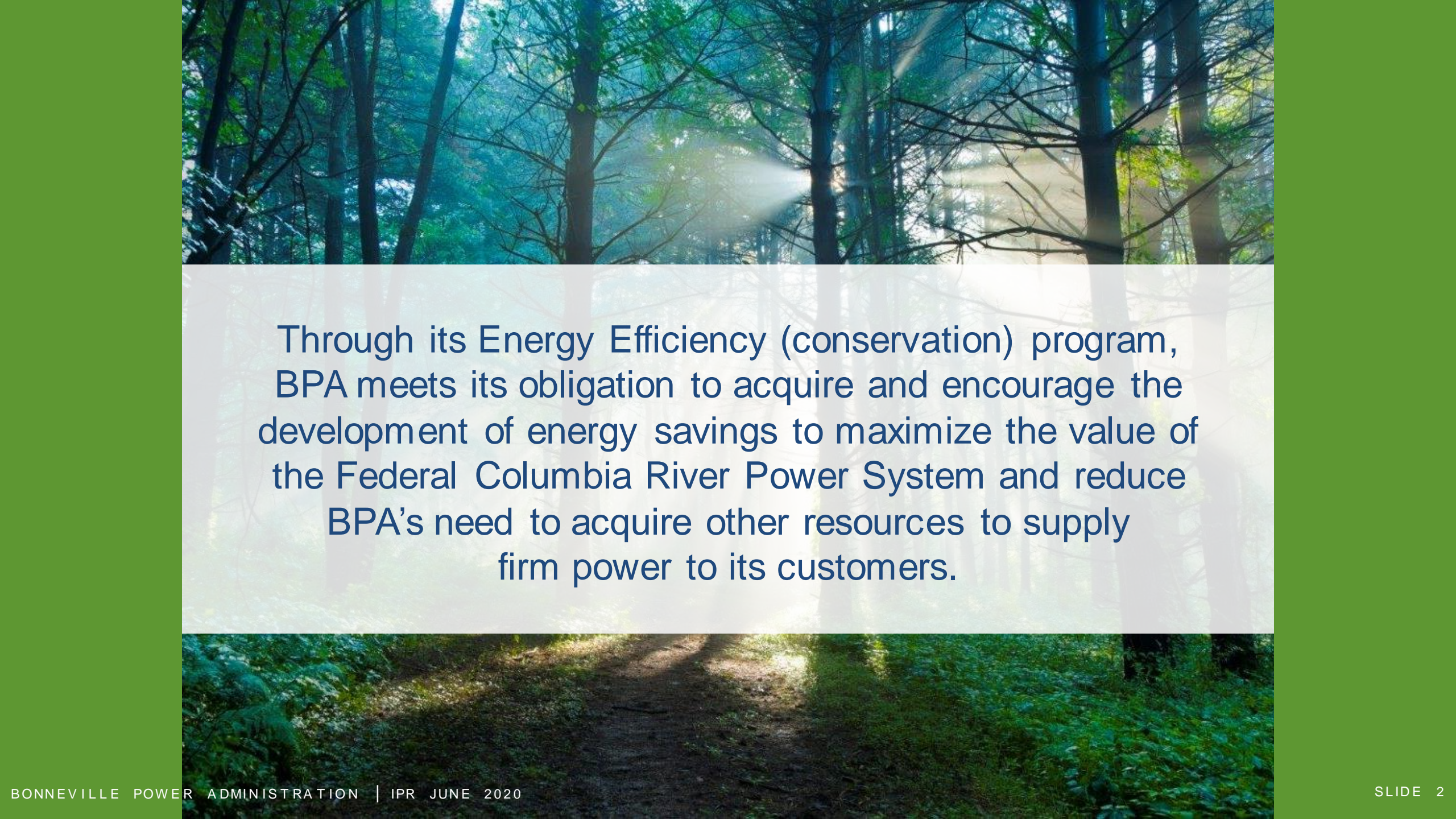


Bonneville
POWER ADMINISTRATION



INTEGRATED PROGRAM REVIEW ENERGY EFFICIENCY

JUNE 15, 2022



Through its Energy Efficiency (conservation) program, BPA meets its obligation to acquire and encourage the development of energy savings to maximize the value of the Federal Columbia River Power System and reduce BPA's need to acquire other resources to supply firm power to its customers.

AGENDA

- Welcome and Introduction: Jamae Hilliard Creecy
- Proposed Costs: Jamae Hilliard Creecy
- Value of Efficiency: Dave Moody
- Conservation Purchases: Dave Moody
- Conservation Infrastructure: Margaret Lewis
- Low Income and Tribal Weatherization: Margaret Lewis
- Market Transformation: Philip Kelsven
- Distributed Energy Resources: Lee Hall
- Program Performance: Dave Moody
- Potential Risks Moving Forward: Lewis Doyle
- Conclusion: Jamae Hilliard Creecy

A STORY OF TWO PROGRAMS

Operations Program

Conservation Infrastructure

Northwest Energy Efficiency Alliance Grant

Distributed Energy Resources

Low Income and Tribal Weatherization Grants

Commercial Activities Program

Conservation Purchases

BPA's Resource Needs

2021 Power Plan

- Identifies a 270-360 aMW energy efficiency target for BPA from 2022- 2027.
- Significantly different than the 7th Power Plan with dramatically lower cost estimates for renewables and more competition for energy efficiency.
- Shows a preference for very low total cost efficiency measures.
- Selects few residential measures.
- Calls for BPA to support our customers as they implement demand voltage reduction and time of use rates.

2022 Resource Program

- Identifies a 299 aMW efficiency goal for BPA from 2022-2027.
- Shows a preference for measures like HVAC and Weatherization that provide the greatest savings when BPA's system has the greatest need.
- Results are similar to the 2020 resource program though the measures selected in 2022 are more costly as less low cost conservation is available.
- Calls for investment in demand voltage reduction and time of use rates. BPA is assessing if and how these technologies could be implemented.

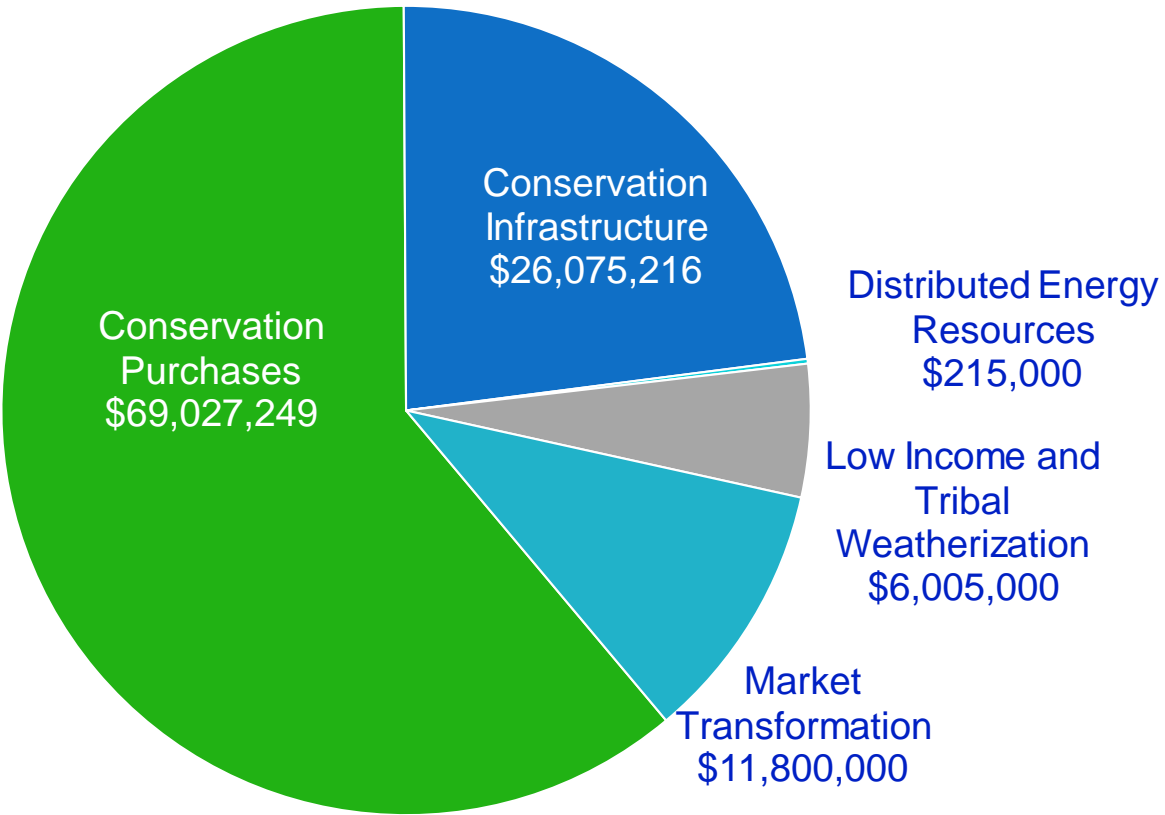
ENERGY EFFICIENCY IPR PROPOSAL

Proposed funding levels are slightly higher relative to the BP-22 Rate Case

Program Area	Actuals		Rate Case		Proposed IPR	
	2020	2021	2022	2023	2024	2025
Conservation Infrastructure	\$20,172,005	\$25,273,604	\$27,000,000	\$27,000,000	\$26,044,064	\$26,106,369
Distributed Energy Resources	\$252,067	\$186,297	\$215,000	\$215,000	\$215,000	\$215,000
Low Income and Tribal Weatherization	\$3,267,675	\$5,204,087	\$6,005,000	\$6,005,000	\$6,005,000	\$6,005,000
Market Transformation	\$11,857,318	\$11,773,412	\$11,800,000	\$11,800,000	\$11,800,000	\$11,800,000
Conservation Purchases	\$63,929,157	\$68,293,357	\$67,356,800	\$67,356,800	\$69,027,249	\$69,027,249
Total	\$99,478,223	\$110,730,758	\$112,676,800	\$112,676,800	\$113,091,313	\$113,091,313

SPENDING BY PROGAM AREA

Energy Efficiency BP-24 Fiscal Year Proposed Spend



The Value of BPA's Conservation Program

Enabling
Customer
Success

**Providing a
Power
Resource
for BPA**

Creating
Economic
Benefits

Building a
Resilient
Future

Minimizing
Environmental
Impacts

A Legacy of Efficiency

A Durable Resource Created with our Customers

Over the past 40 years BPA and our customers have acquired more than 2,400 average megawatts of savings — twice the energy Bonneville Dam produces.

Conservation Investments Have:

- Saved BPA and our customers millions of dollars in resource acquisition.
- Provided a buffer against market volatility, a shock absorber for market fluctuations, and a hedge against the impact of a changing power market.
- Helped program participants save up to a billion dollars in energy bills over the last 4 decades.
- Supported BPA's system needs. Measures like HVAC and weatherization have more than double the impact when BPA's system is most constrained.

Enabling Customer Success

Economies of Scale and Regional Benefit

With regional infrastructure BPA works with our customers to support program implementation and provides resources that would be impractical or unavailable at a local utility level.

Easing Regulatory Burden

By providing consistent standards, protocols and vetted savings values BPA provides certainty customers can rely on when meeting their state and local requirements.

Creating Economic Benefits

Enabling Economic Vibrancy

Efficiency projects at commercial, industrial, and agricultural facilities reduce operating costs and create competitive advantage for program participants.

Investing in the Community

Between 2016 and 2021, BPA utilities invested more than \$3.5 million in approximately 300 schools to acquire 1.65 aMW of energy resource and saving those schools more than \$1 million.

Building a Resilient Future

Resilience for the Power System

Managing the power system, integrating intermittent renewables and accommodating the growing drive for electrification is no easy task. EE measures like HVAC and weatherization mitigate these challenges and provide the most benefit when the power system is in greatest need.

Adapting to Extreme Events

Conservation investments can help participants be better prepared for extreme weather events and mitigate the impacts to the power system.

Minimizing Environmental Impact

Reducing Unspecified Purchases

Efficiency also helps BPA avoid buying more unspecified power. This will be particularly important to BPA's customers facing compliance with carbon reduction and clean energy programs.

The Resource you Don't Build

The energy efficiency resource BPA has acquired and will continue to acquire means generating resources did not need to be built.



Areas of Planned Investment

CONSERVATION PURCHASES



\$69,027,249 annually

Energy Efficiency Incentive

- A majority of Conservation Purchases are dedicated to the cost of Energy Efficiency Incentives (EEI).
- BPA plans for 70% BPA funding and 30% of savings funded directly by customer utilities.
- BPA will increase its emphasis on HVAC and weatherization and water heating savings to better align with BPA's Resource Program identified needs. These savings are more costly and difficult to acquire.

Energy Smart Reserve Power

- A small portion (\$3 million) of Conservation Purchases funds the Energy Smart Reserved Power program.
- Provides funds for energy efficiency projects at reserved power sites like federal facilities and irrigation districts, that draw power directly from the federal dams.
- By improving efficiencies at reserved power facilities BPA increases the amount of power available to supply to its utility customers.

Value of Conservation Purchases

A Resource within the Community

A Resource Created by the Community

By its nature, energy efficiency is distributed throughout communities and our customers' customers.

Mitigating Capacity Needs

Efficiency in priority areas like HVAC and Weatherization have more than double the impact on load and provide the most value when regional capacity needs are greatest.

CONSERVATION INFRASTRUCTURE



\$26,106,369 annually

Regional Programs

- Specialized support services and technical expertise to augment and enable utility implementation efforts.

Momentum Savings

- Helps understand the efficiency that occurs outside of programs that provides value to the BPA power system without need to invest in incentives.

Emerging Tech and Measure Research

- Identifies and implements new efficiency measures, and ensures existing measures accurately reflect the real savings achieved.

Program Evaluation

- Quality control for the EE program, ensuring we have an accurate understanding of the impact of our EE acquisitions on BPA's resource needs.

Contract Staffing

- Contract support for energy efficiency activities.

Value of Conservation Infrastructure

Implementation Support and Reduced Cost

Technical Support on Demand

BPA engineers and EE representatives provide technical services for all utilities enabling utilities to do far more than they could on their own.

Making the Most of Ratepayer Funds

BPA's work with our customers to deliver regional programs, and our regional investments in emerging technology, momentum savings and evaluation make sure we deliver a low cost, reliable resource.

A Positive Customer Experience

BPA's EE Programs help our customers support their members needs and create a positive interaction between our customer utilities and the people they serve.

LOW INCOME AND TRIBAL EFFICIENCY



\$6,005,000 annually

State Low Income Grant

- 90% of the grant budget (\$5,536,900)
- Grants to states are allocated on a proportional basis using the most current census data for households with incomes below federal poverty guidelines

Tribal Efficiency Grant

- 10% of grant budget (\$615,100)
- Grants to tribes for low-income services are made on an application basis and take a variety of factors into consideration including geographic dispersion, prior participation and local needs.

Value of Low Income and Tribal Efficiency

Supporting our Neighbors in Need

Support those in Greatest Need

The average energy burden for low-income households is 6.8%, about three times higher than the median energy burden of 2.3%. BPA's programs cut low income household bills by \$1.25 million dollars annually since 2016.

Programs Beyond Weatherization

The low income grant program provides support for weatherization, but also improvements like ductless heat pumps and smart thermostats, and provides for much needed repairs to ensure savings occur.

MARKET TRANSFORMATION



\$11,800,000 annually

A Regional Alliance

- BPA is one of 15 regional funding members of the Northwest Energy Efficiency Alliance. The grant is based on load share and helps enable efficiency transformations in targeted markets.

Savings beyond Programs

- Verified savings from NEEA's intervention strategies and activities are counted towards BPA's annual savings accomplishments. NEEA's approach identifies opportunities and impediments, removes barriers and accelerates market adoption.

Value of Market Transformation

Creating efficiency by
changing markets

Reliable Savings Beyond Programs

A well-established channel for low-cost, long-term savings and is highly effective in markets that are challenging for traditional utility programs to reach.

A True Northwest Alliance

NEEA enables partnership and collaboration for all NW utilities and creates better program coordination and reduced implementation barriers.

Creating Tools for Everyone

NEEA provides tools that are invaluable for the region's efficiency programs. Stock assessments and load research underpin much of BPA's efficiency program.

DISTRIBUTED ENERGY RESOURCES



\$215,000 annually

Understanding the Market

- Support for service contracts and memberships useful for analyzing DER market trends, feasibility, availability and cost data, as it applies to resource planning and other power requirements.

Ensuring Implementation Readiness

- BPA will evaluate the development of products that can be physically located close to loads and review opportunities to acquire them when supply needs arise and it is cost effective to do so.

Value of Distributed Energy Resources

Planning for BPA's future needs

Planning for a Change Landscape

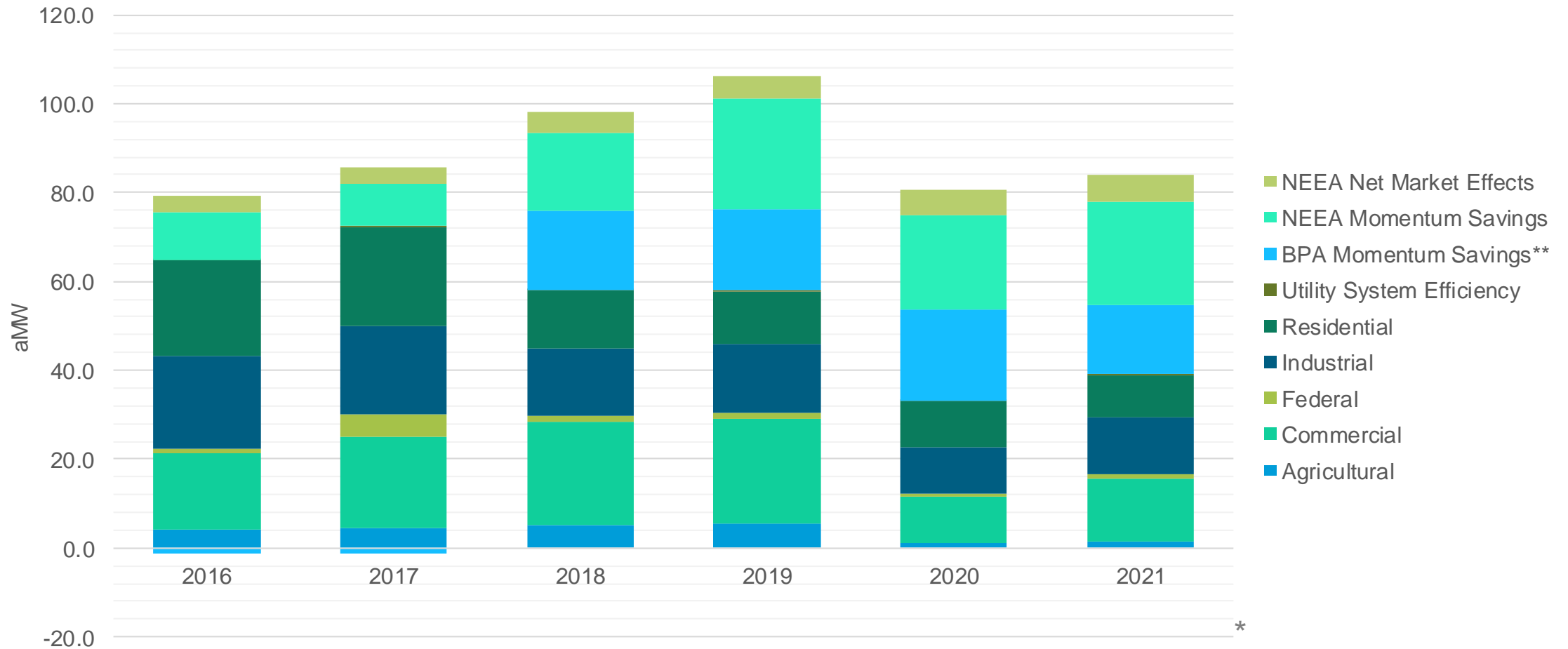
Driven by EVs and heat pump adoption, overall load growth will increase and has the potential to become peakier and create challenges for the NW transmission and distribution systems. DER analytics will ensure that BPA has the right solutions to meet a changing utility industry environment.

Supporting BPA's Strategic Plan

Any DER implementation will be funded by Power and Transmission Services. Any DER implementation will be consistent with the BPA 2018-2023, or updated, Strategic Plan. Such DER will support BPA's goals of cost competitive power services and efficient and responsive transmission services.

PROGRAM PERFORMANCE BETWEEN 2016-2021

531 aMW total 2016-2021*



* BPA Overall Achievements are preliminary and may change.

** BPA Momentum totals are preliminary

PERFORMANCE and IMPACTS

- **2016: BPA's 2016-2021 EE Action Plan originally projected a total of 581 aMW savings**
 - Programmatic Savings
 - Momentum Savings
 - Market Transformation
- **2018: Transitioned to a savings range to reflect uncertainty**
 - Slowed implementation of federal standards
 - Shift to harder to achieve Savings
- **2020: COVID Pandemic**
 - Major impact on program implementation

RISKS GOING FORWARD

Forecasting Savings

- Factors that may affect the forecast of energy efficiency savings include:
 - Higher than expected costs of energy efficiency acquisition.
 - The need to add or enhance program support services.
 - Assumed volume or pace of market adoption may lag.
 - Slow energy efficiency measure development.

Mitigation

- If conditions differ from forecasts BPA would pursue changes in infrastructure and promotions to support lagging acquisitions.

Changing Needs

- In early 2022 the Council published the 2021 Power Plan which set a new direction for the region's efficiency efforts. BPA is also finalizing its 2022 Resource Program. Both of these studies show a changing optimal measure mix which will impact BPA's ability to acquire these savings.
- Changes in energy goals or in the composition of energy savings could result in BPA adjusting program support services and/or modifying current programs.

Mitigation

- As BPA works to align our portfolio targets, PE staff will seek to optimize BPA's measure offering with a focus on our highest priority, most cost effective measures.

Market Barriers

- As the COVID pandemic continues to evolve and market barriers created by supply chain disruptions and pipeline constraints persist efficiency acquisitions may continue to lag behind expected levels.
- Rising inflation and increased cost of products and services may impact BPA's ability to acquire cost effective conservation.

Mitigation

- To address market barriers BPA will focus on programmatic interventions that help overcome the barriers created by COVID and use incentive structure to help overcome inflationary pressure.



THANK YOU

**Comments and
Questions?**

FINANCIAL DISCLOSURE

This information was publicly available on June 9, 2022, and contains information not sourced directly from BPA financial statements.