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September 7, 2022

MEMORANDUM

TO: Council Members

FROM: Kevin Smit

SUBJECT: 2021 Regional Conservation Progress Report

BACKGROUND:

Presenter: Kevin Smit, Tina Jayaweera

Summary: On behalf of the Council, the Regional Technical Forum conducts an annual data collection of the region's energy efficiency programs to understand energy efficiency savings and expenditures from the prior year. This is known as the Regional Conservation Progress (RCP) survey and report. The purpose of the RCP is to track and report on the region's progress relative to the Council's Power Plan goals.

At this meeting, staff will present the 2021 RCP Report, which provides the final summary of the region's progress relative to the energy efficiency goals in the Council's Seventh Power Plan. The report comprises data from all the efficiency programs in the region: Bonneville and its customer utilities, the region's investor-owned utilities, the mid-Columbia utilities, Energy Trust of Oregon, and the Northwest Energy Efficiency Alliance. In addition to utility reported data, the report includes savings occurring outside of direct program acquisition, such as from codes and standards as well as from other market-driven changes. These data provide an understanding of the cost-effective energy efficiency savings acquired in the region and related expenditures for 2016-2021. This time period represents the Seventh Power Plan's Action Plan period and will be the

final report based on the Seventh Power Plan; subsequent reports will be based on the 2021 Power Plan.

Relevance: The Seventh Power Plan established a goal of 1400 aMW of conservation acquisition by the end of the six-year Action Plan period (2021). This 1400 aMW is the only resource that the Council recommended be built by the region in the Seventh Plan resource strategy. This resource is needed to ensure the region maintains an “adequate, efficient, economical, and reliable power system.”¹

This goal includes two-year milestones:

	FY 2016-2017	FY 2018-2019	FY 2020-2021
Annual Energy Savings (aMW)	370	460	570
Cumulative Energy Savings (aMW)	370	830	1400

Per its charter, the Regional Technical Forum is responsible for tracking the region’s progress against the plan goals.

¹ Northwest Power Act, §2(2), 94 Stat. 2697.

2021 Regional Conservation Progress Survey Results

September 14, 2022

Council Meeting

Kevin Smit

Acknowledgements



- Annika Roberts
 - Consultants (Apex)
 - Utilities
- Tina Jayaweera
- Jennifer Light



Thanks to Regional Utilities who provided Data:

- BPA
- PSE
- Northwestern
- Avista
- Idaho Power
- Energy Trust of Oregon
- PacifiCorp
- Chelan County PUD
- Grant PUD
- Douglas PUD
- NEEA
- BPA Utilities:
 - Seattle City Light
 - City of Ellensburg
 - Snohomish PUD
 - Idaho Falls Power
 - Lewis PUD
 - Franklin PUD
 - Tacoma Power
 - Cowlitz PUD
 - Grays Harbor PUD
 - Clark PUD
 - Clallam County PUD
 - Emerald PUD



What is this Report?

- Annual and cumulative data collection from all the region's efficiency programs to track progress against the Council's plan goals
- 2021 is final year of the Seventh Plan period, subsequent reports will be based on the 2021 Power Plan
- Conservation milestones in the Seventh Power Plan:

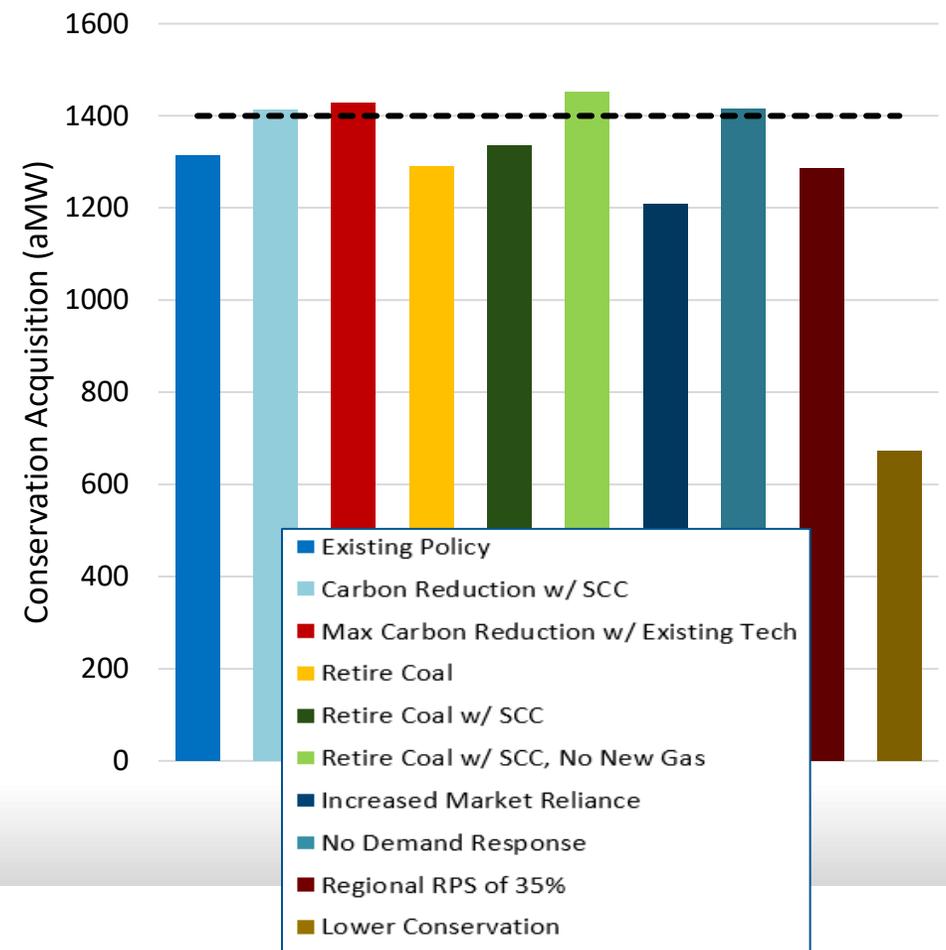
	2016-2017	2018-2019	2020-2021	2022-2023
Annual Energy (aMW)	370	460	570	660
Cumulative Energy (aMW)	370	830	1400	2060

↑
2021 Power
Plan starts here (2022)

Background: The 7th Power Plan

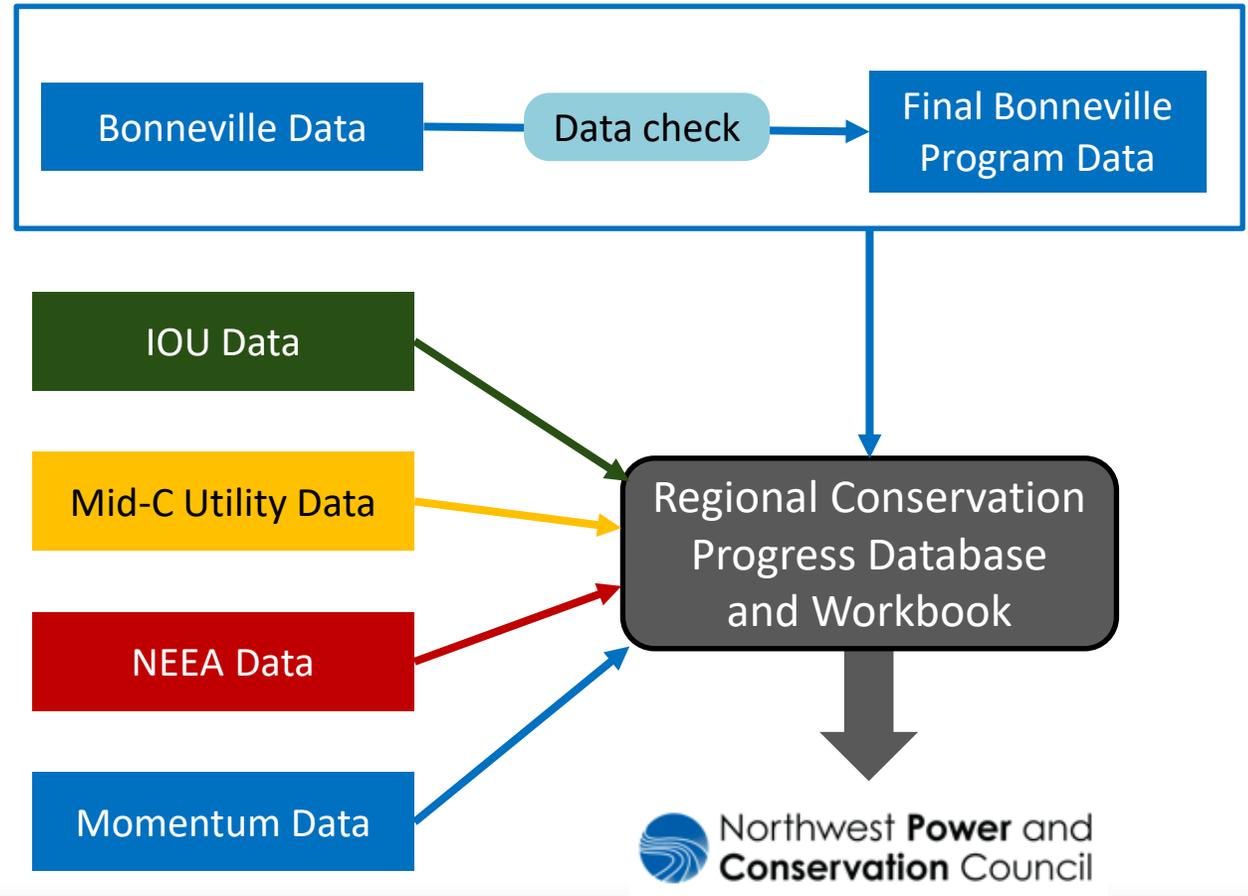
- The Seventh Power Plan resource strategy recommended one resource to be built in the region: 1400 aMW of energy efficiency by 2021
- No other resource build was recommended in the 7th Plan resource strategy
- The Power Plan and the Council's annual adequacy assessments assume these goals will be met
 - Historically the region has met and exceeded the targets set forth in the plan
 - EE is the primary resource the region needs to build in order to maintain AEERPS

Conservation Acquisition by 2021
in Seventh Plan Scenarios



Data Collected

- **2021 Savings**
As much detail as possible
- **2021 Expenditures**
Aiming for total expenditures
- **2022-2023 Projections ***
Forecasted savings and expenditures, where available
- **2016-2020 Updates**
Corrections or updates to previous years data



*Projection data are sparse, so we won't be presenting this time

Types of Savings in the RCP

Total Regional Savings

Represents the total savings in the region relative to the Power Plan baseline. A look at the change in consumption for a whole market (efficient and inefficient). **These savings are most comparable to the Power Plan goals.**

Program Savings

Savings claimed by utilities, BPA, and Energy Trust of Oregon for specific measures that they have incentivized.

NEEA Reported Savings

Savings reported by NEEA that represent efficiency in markets they track above the Power Plan baseline not claimed by programs.

Momentum Savings

Savings reported by BPA to reflect efficiency in the market, resulting from previous program activity, that are above the Power Plan baseline and not accounted for by Programs or NEEA.

Codes and Standards Savings

Savings from new buildings or equipment that meet a new code or standard not captured in the Power Plan baseline.

Total Regional (Market) Savings

- Total Regional Savings represent the change in electricity use between today and the start of the Plan
- Savings are estimated by collecting sales and other data to understand how the market (and therefore energy use) has shifted over time
- These most align with the Power Plan Resource Strategy, as the Plan goals essentially identify the most cost-effective amount of efficiency needed regionally to meet electricity needs

Total Market Savings are reported for the following markets:

- Residential lighting
- Residential refrigerators and freezers
- Residential heat pump water heaters
- Residential clothes washers and dryers
- Residential and commercial computers
- Residential HVAC
- New manufactured homes
- Non-residential lighting
- Adjustable speed drives

The Market Adjustment

For some markets, we have data on total market savings allowing us to see the full picture



The different savings components don't align with this full picture, due to different methodologies and perspectives



The market adjustment is calculated to bring these into alignment, ensuring the sum of the parts equals the total



Simply put, the market adjustment accounts for under- and over-counting from the different sources

Other Notes About the Analysis

- Any updates reported in future years may result in changes to previous year reports
- Report represents a mix of calendar and fiscal year savings; this gets smoothed out over multiple years of reporting
- Some types of savings, in particular industrial, are blocky and can vary significantly year by year
- Comprehensiveness of expenditure data vary year-by-year (ex: some utility self-fund expenditures)

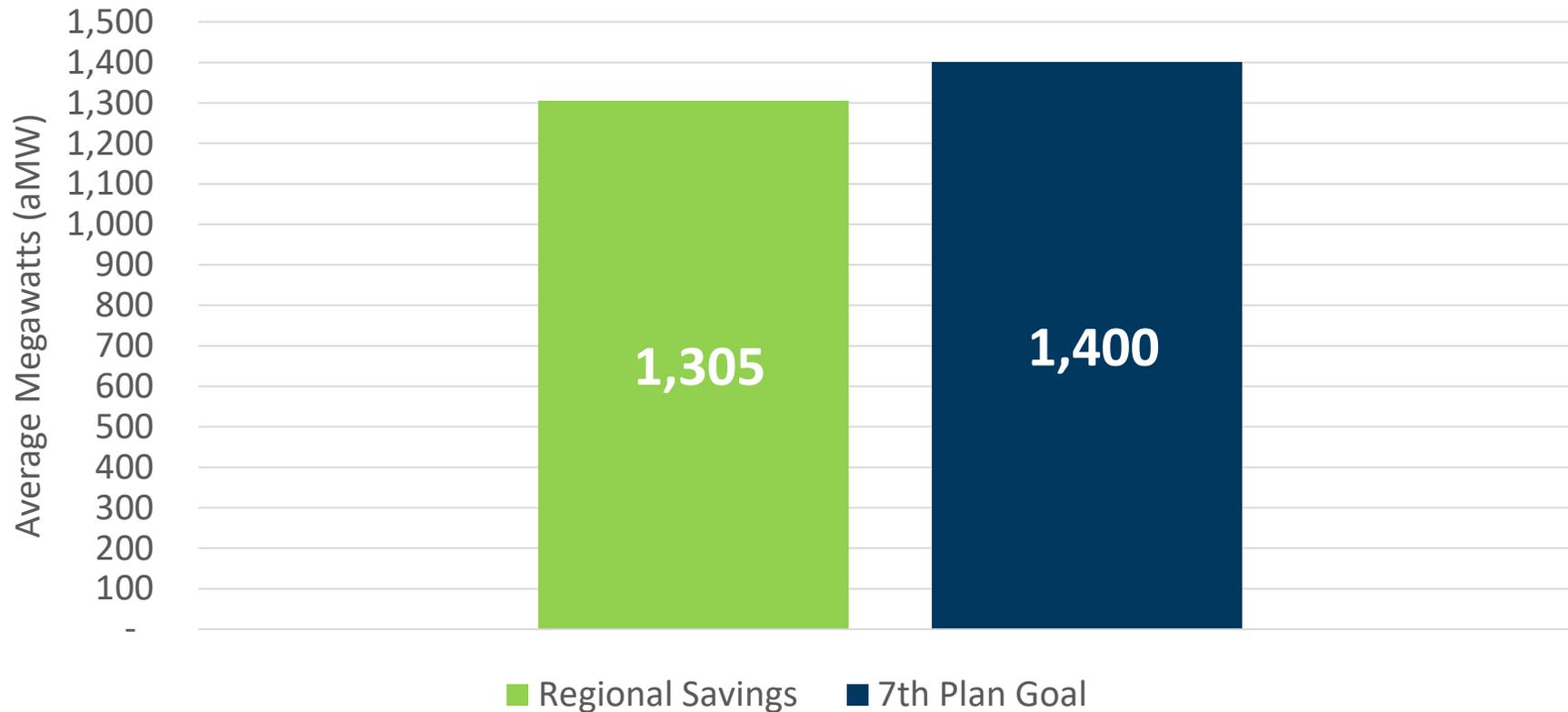


DRUM ROLL PLEASE!

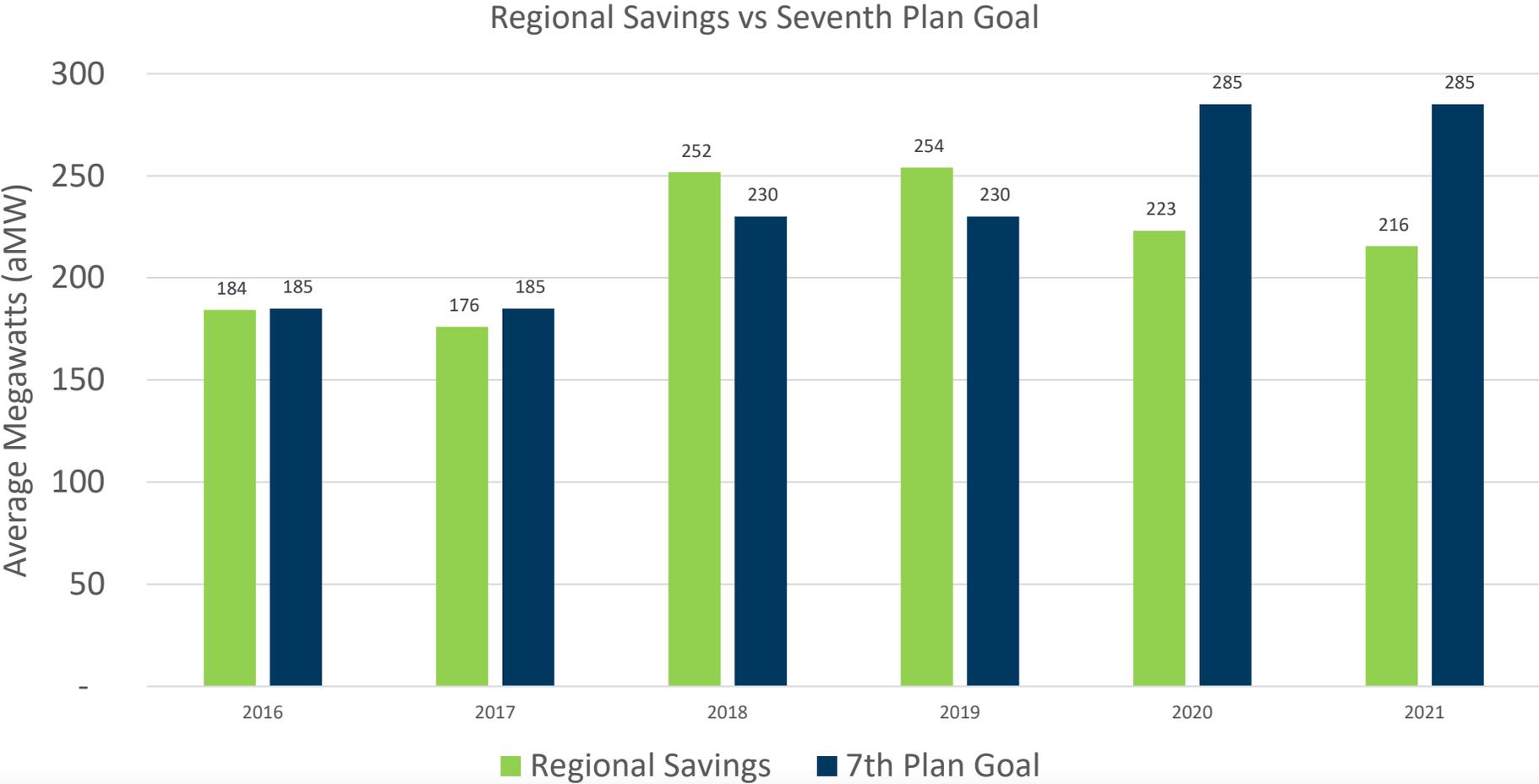
RESULTS

Region Did Not Meet the 7th Plan 6-year Goal

Regional Savings vs Seventh Plan Goal

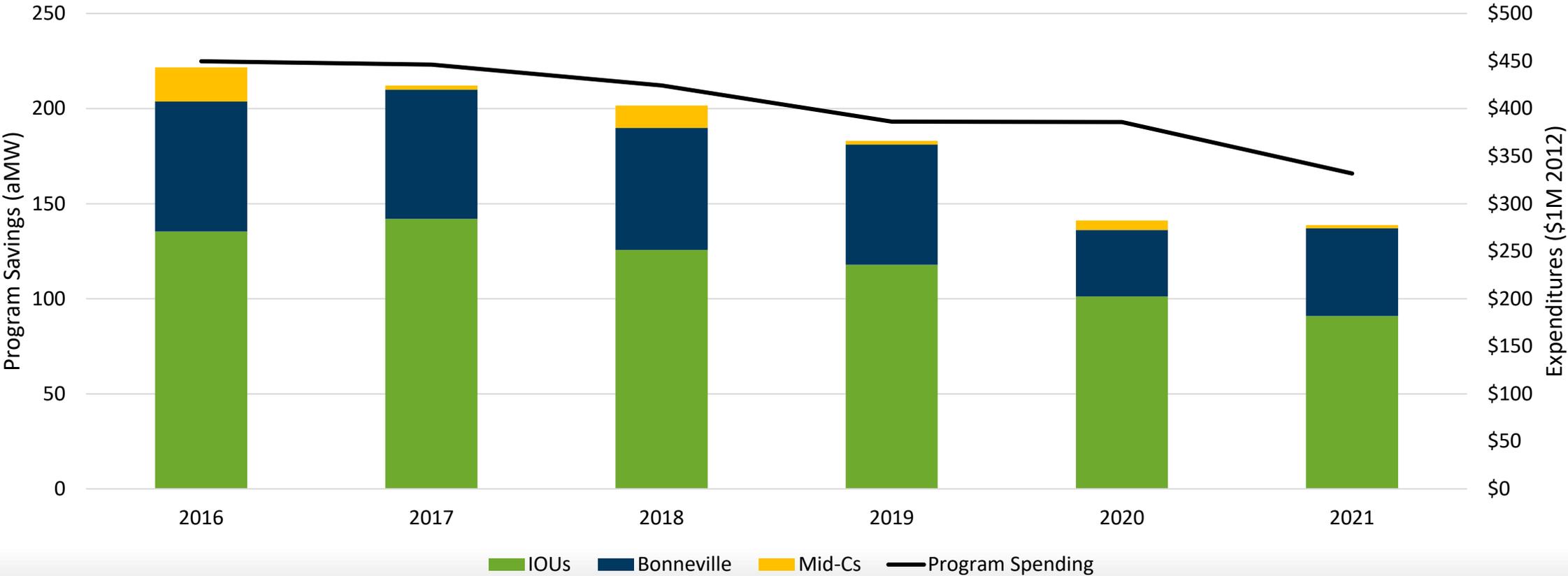


Regional Savings vs Biennial Milestones



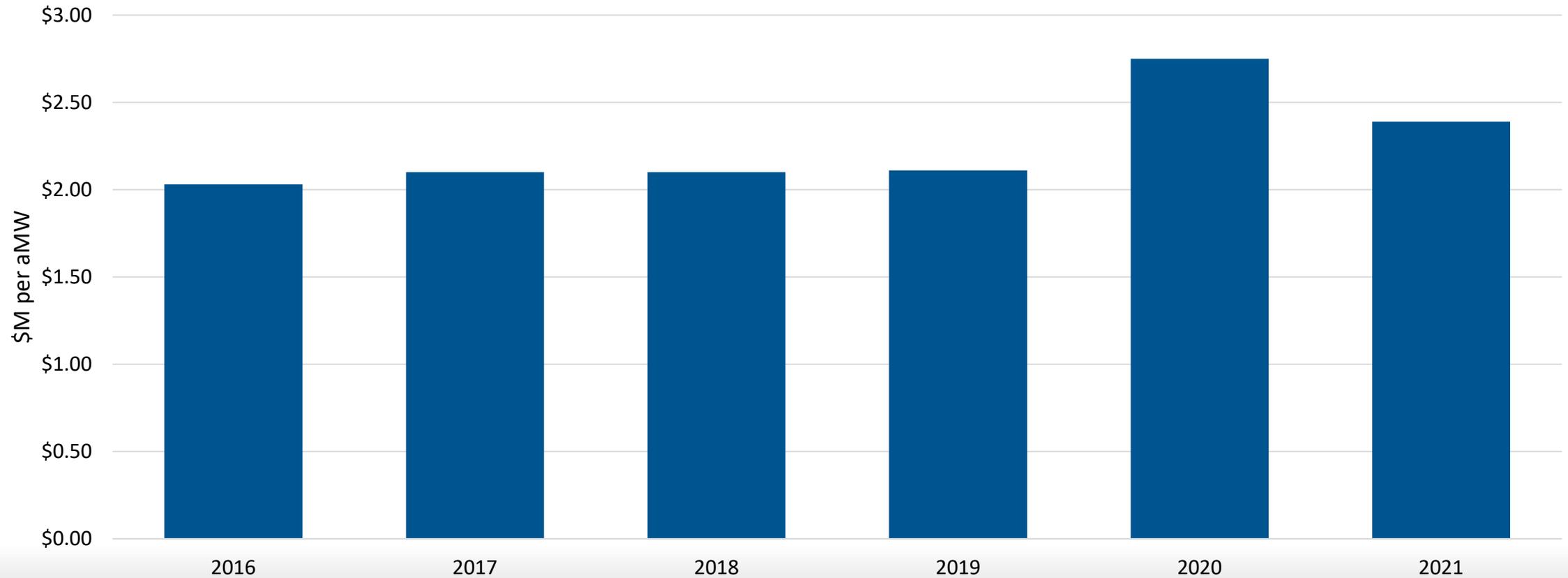
Program Savings and Expenditures Have Been Declining

Program Savings and Expenditures Over Time



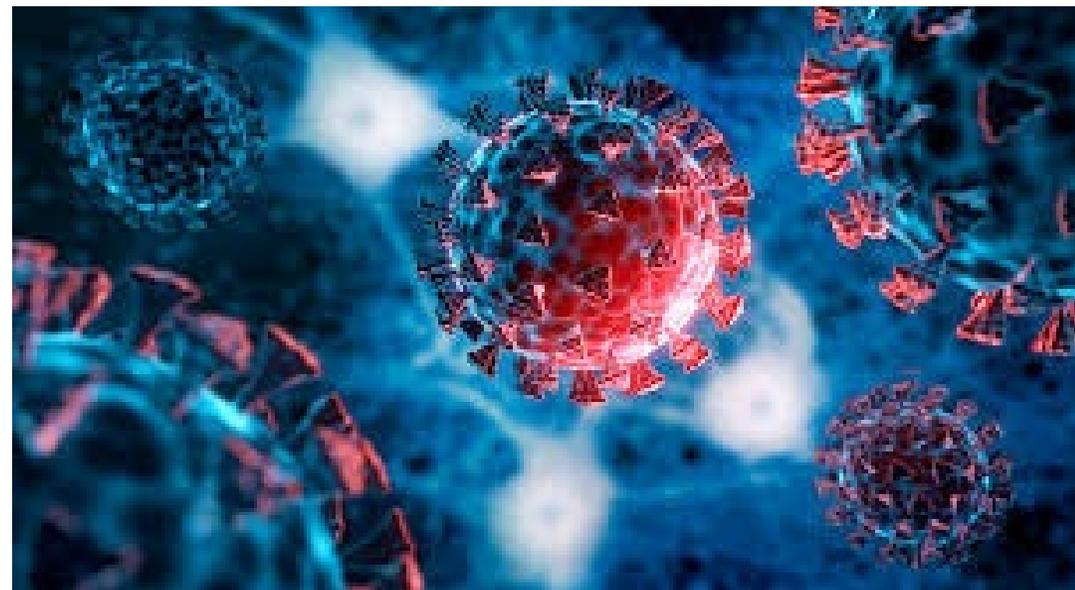
Program Savings Cost More in 2020-21

Program First Year Cost of Energy Efficiency Over Time



What About Covid?

- Covid-19 restrictions impacted savings, but it does not appear to be the sole driver of the shortfall
- Budgets were largely flat or declining while savings milestones and cost of efficiency have increased suggesting the region would still not have met goals



BONNEVILLE RESULTS

Determining BPA's Savings

BPA's savings represent:

- Program Savings
- Proportional accomplishments from regional mechanisms and adjustments

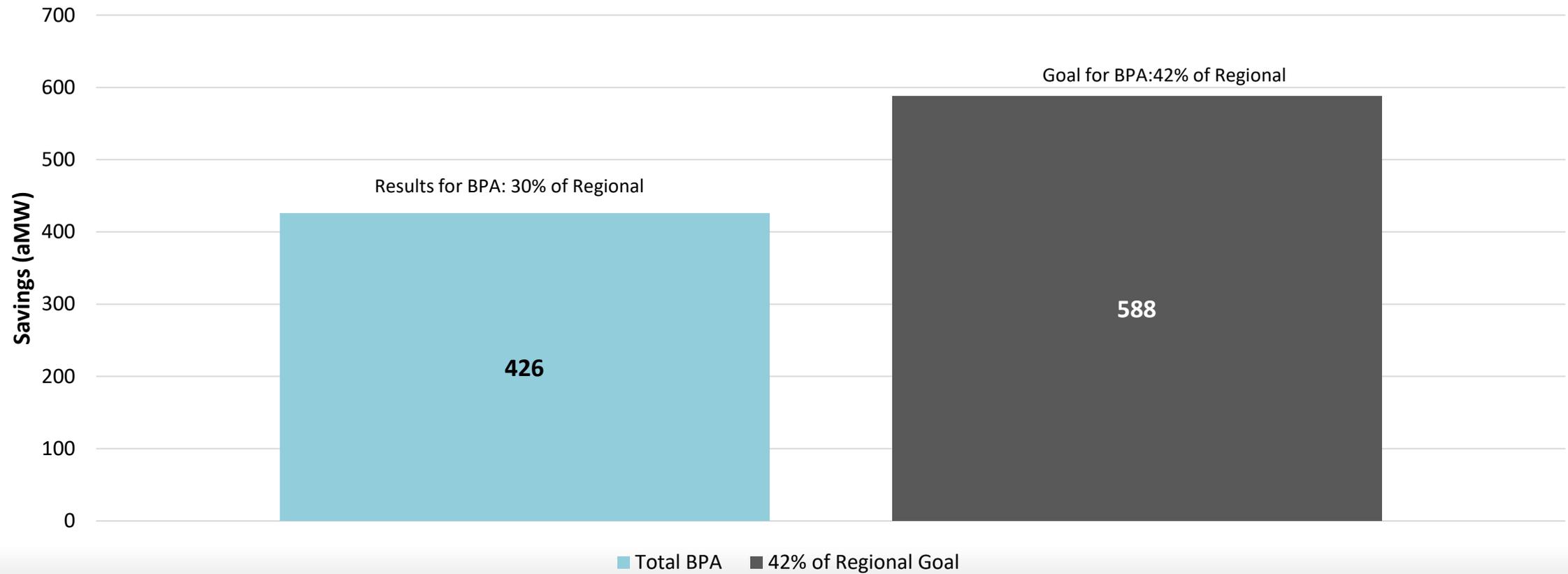
Note, program savings are those directly in BPA's control and the only component not proportional to regional savings



Note: The 42% is based on BPA's determined share of the regional goal.

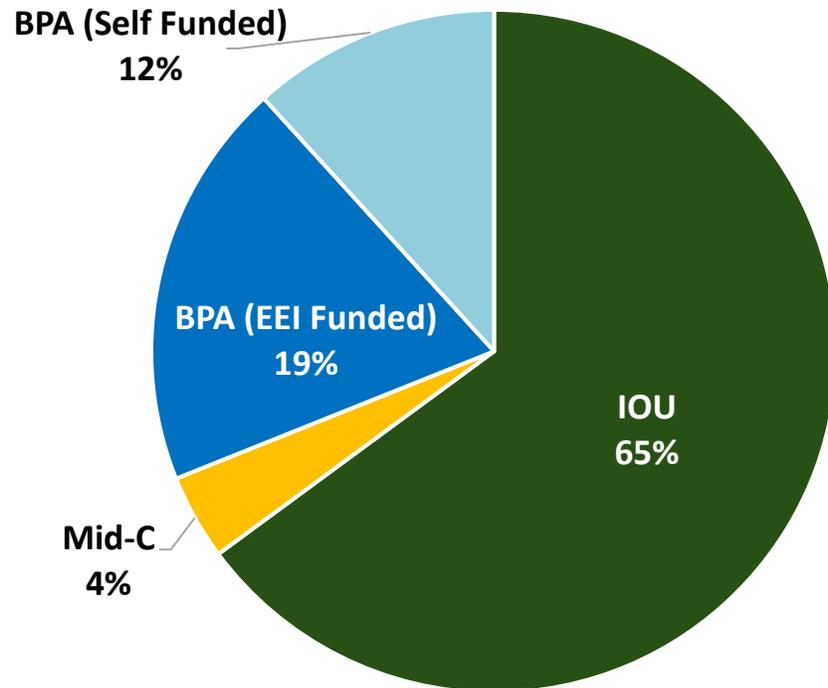
BPA Achieved Less Than 42% of Power Plan Goals

Total BPA Savings from 2016-2021 Relative to 42% of Goal

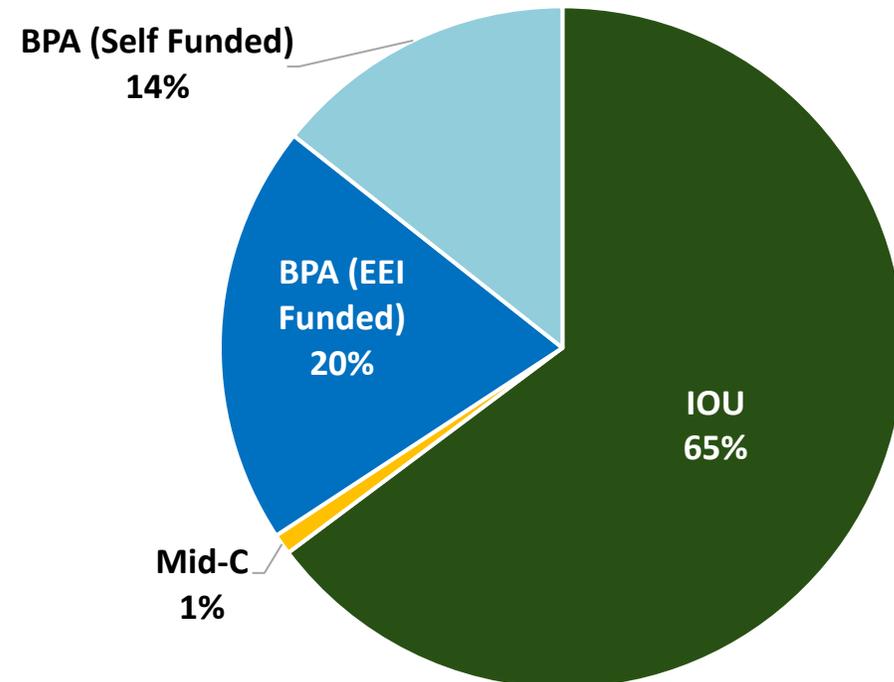


BPA Program Savings Account for 31% of Regional Program Savings

2016-2021 Program Savings Share

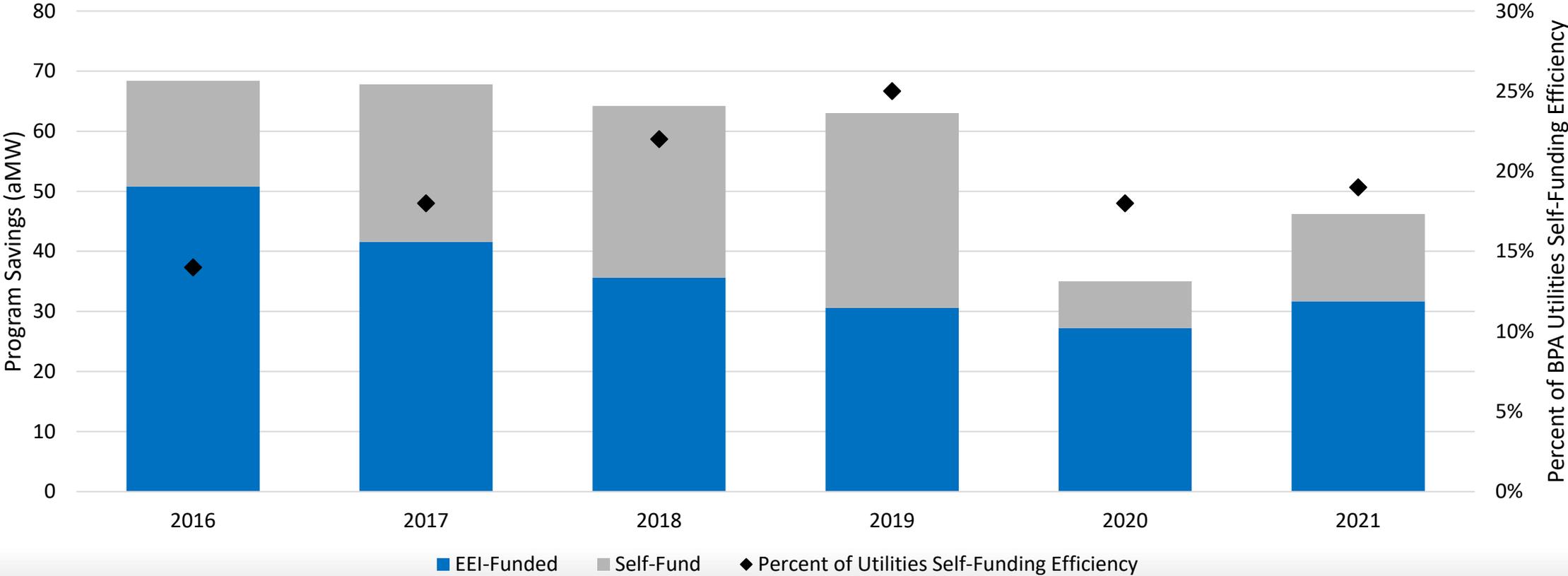


2016-2021 Funding Shares

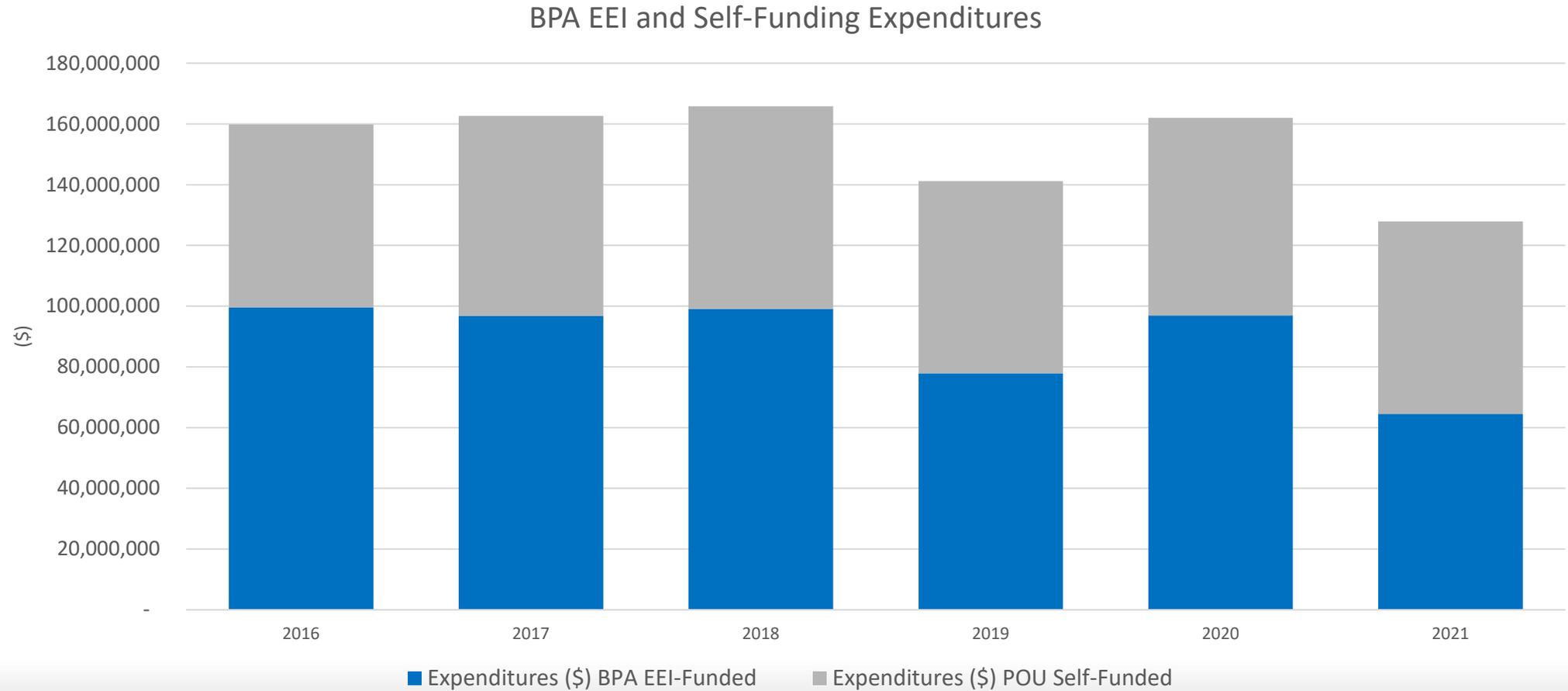


Savings Self-Funded by Bonneville Utilities Fell Significantly in 2020

BPA Program Savings by Funding Source



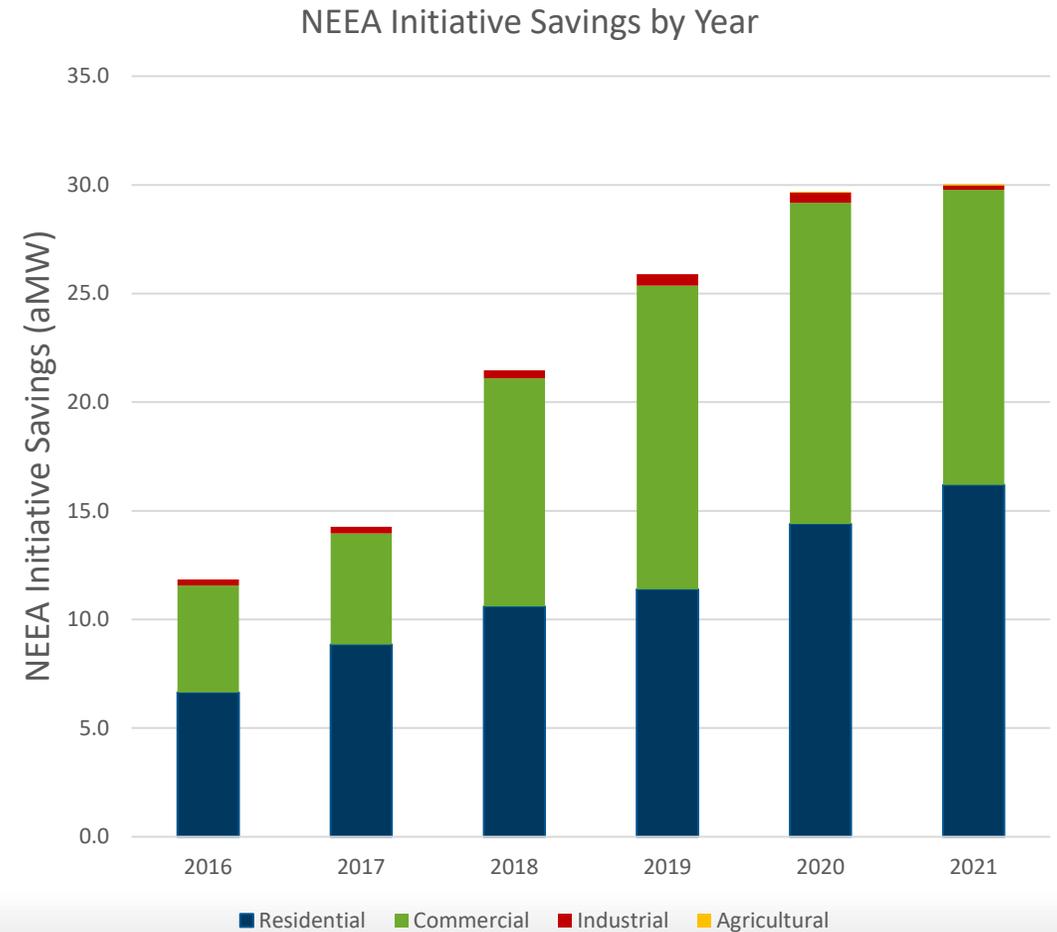
BPA Expenditures Declined Slightly Over the Period



OTHER HIGHLIGHTS

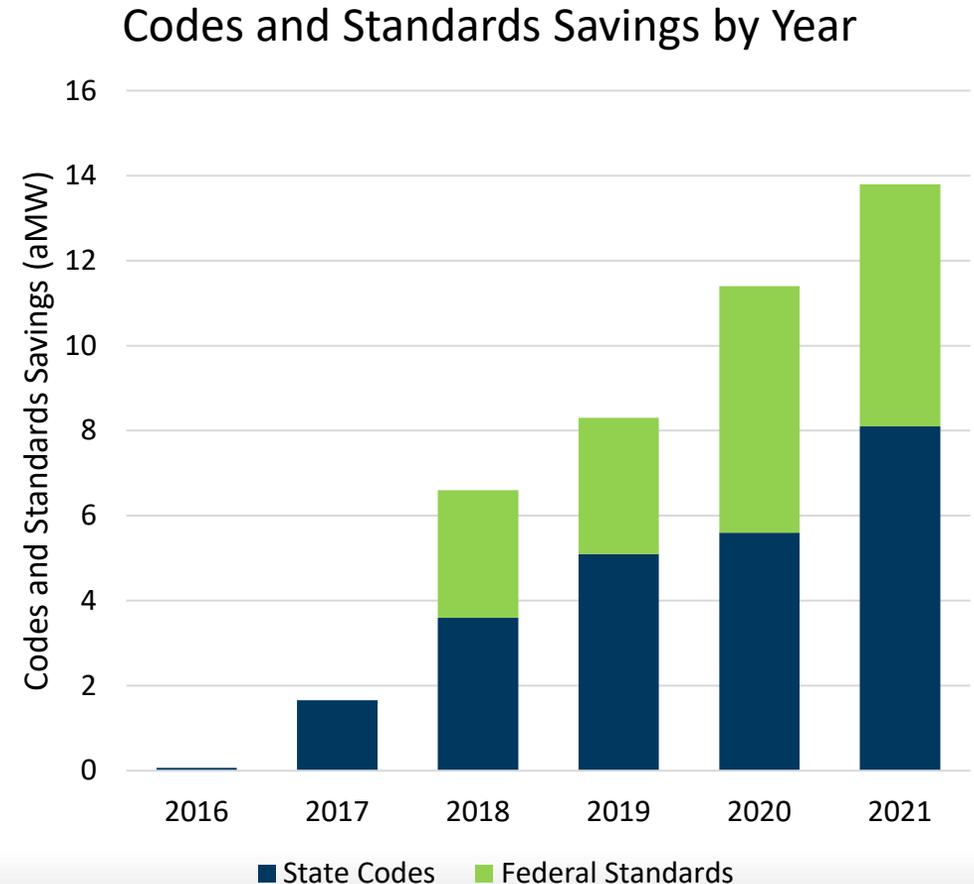
NEEA Initiatives Contribute to Regional Savings

- NEEA initiatives work upstream to drive market change
- This work delivers savings over the long-term and focusing on the short-term picture tends to underrepresent the value of these initiatives
- These savings increase every year – this is the purpose of market transformation – to increase the penetration of EE in the market



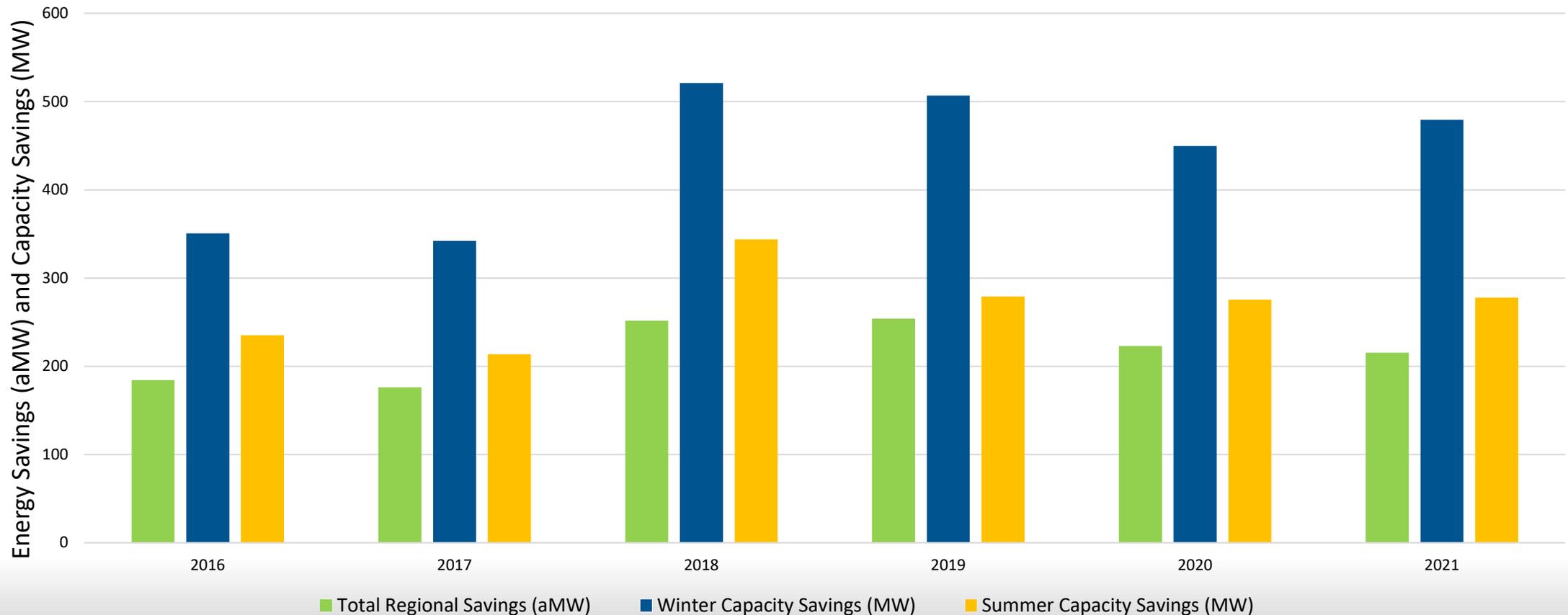
Codes and Standards Savings from the Seventh Plan Period

- These are savings from new state codes and federal standards adopted since the development of Seventh Plan potential
- All these savings represent real efficiency for the region, driven in large part by NEEA and historic program achievements
- Looking forward, many of these savings are now captured by the 2021 Power Plan baseline



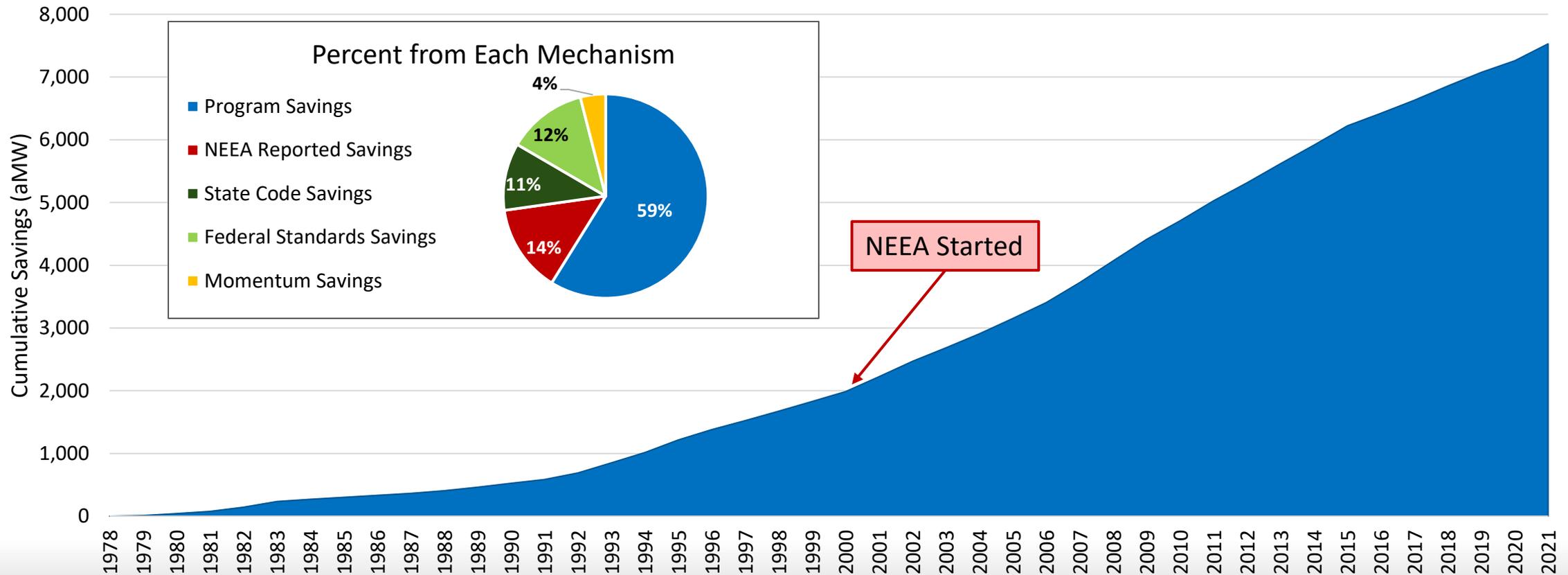
Efficiency Continues to Contribute Significant Capacity* Savings to the Region

Annual Regional Savings (Energy and Capacity)



Region has saved over 7,500 aMW from energy efficiency!

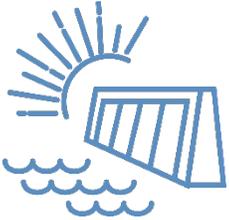
Cumulative Regional Savings, all Mechanisms



Fun Facts: What does 7530 aMW represent?



Equivalent to the annual energy consumption of around 5.5 million homes



Almost 3 times the generation of Grand Coulee



Avoided more than 24 million metric tons of CO2

Looking Forward – The 2021 Power Plan

- Targets for Action Plan Period (2022 – 2027)
 - Regional: 750 to 1000 aMW
 - Bonneville: 270 to 360 aMW; 243 aMW Programmatic Minimum
- The 2021 Power Plan Action Plan period will look very different than the Seventh Plan
 - Smaller magnitude goals
 - More challenging cost-effectiveness threshold
 - Fewer traditional measures are cost-effective
 - Cost per aMW will likely continue to increase

Looking Forward – The 2021 Power Plan (cont.)

- Conservation Program – beyond the target
 - Recommend the region continue to weatherize uninsulated homes, even if not cost effective
 - Some NW jurisdictions are aggressively pursuing decarbonization goals – this will impact regional EE

QUESTIONS?