



Energy Efficiency and Demand Response

in the 2027 Integrated Resource Plan

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Customer Relations and Programs Manager

Agenda

- Potential Study Objectives
- 2026 EE Potential Study Results
- Existing Demand Response Programs
- 2026 DR Potential Study

Seeking Feedback

Common Acronyms			
DR	Demand Response	ELCC	Effective Load Carrying Capability
EE	Energy Efficiency	IRP	Integrated Resource Plan



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Potential Study Objectives

The two primary objectives for the potential studies are:

- **Program Planning:** provide insights into possible measures or programs
- **IRP:** long-term forecast of potential



EE Potential Study

- Based on Idaho Power customer specifics
- Accounts for future implementation of known technology
- Accounts for known codes & standards
- Current programs & program performance
- NW Power & Conservation Council forecasts of EE measure adoption
- Uses Idaho Power avoided costs for determining what is cost-effective

February Energy Efficiency Advisory Meeting



Discussed 2027 IRP Preparation



- Reviewed EE Potential Study Plans
- Received support & alignment for discontinuing non-cost-effective bundles



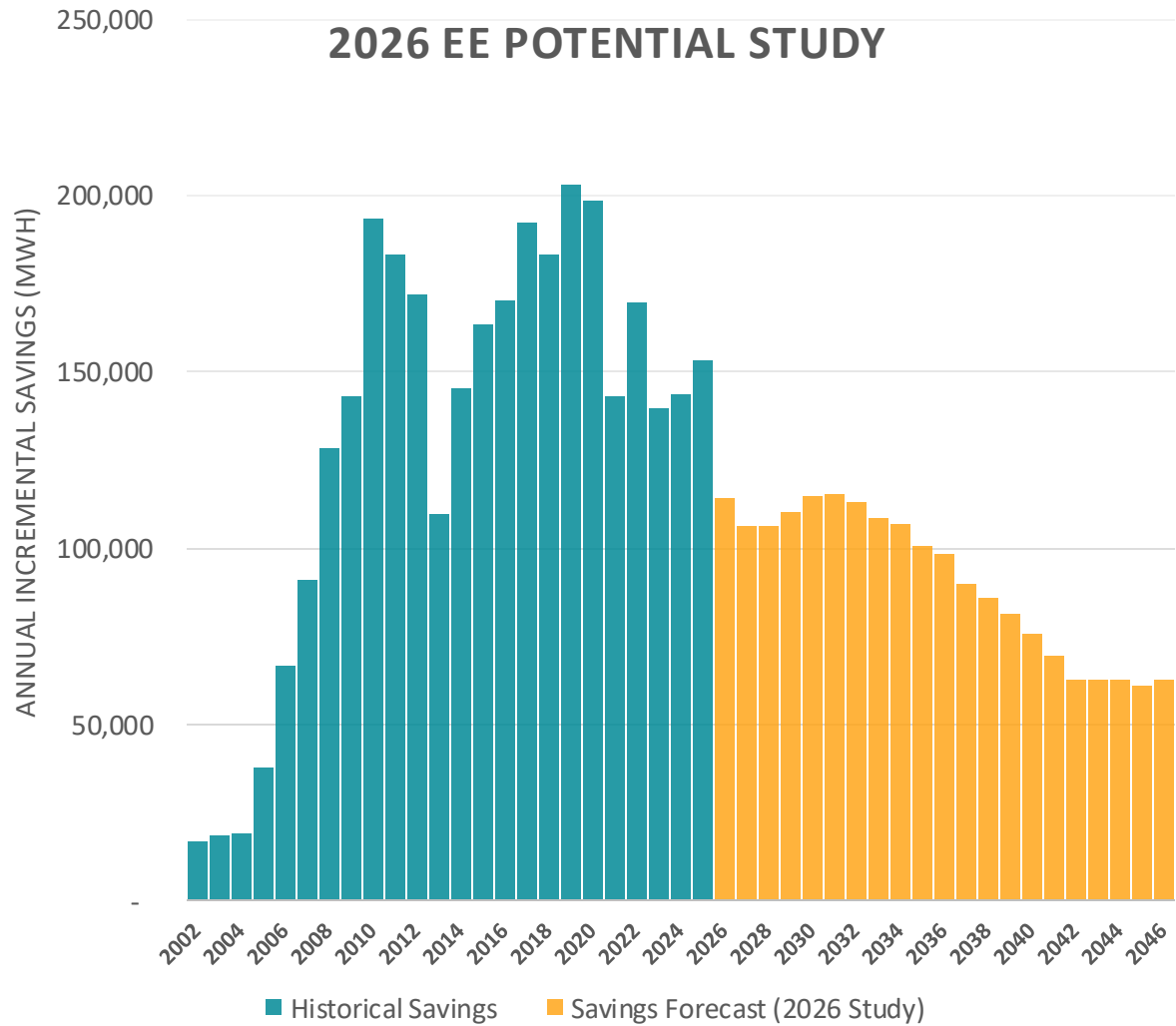
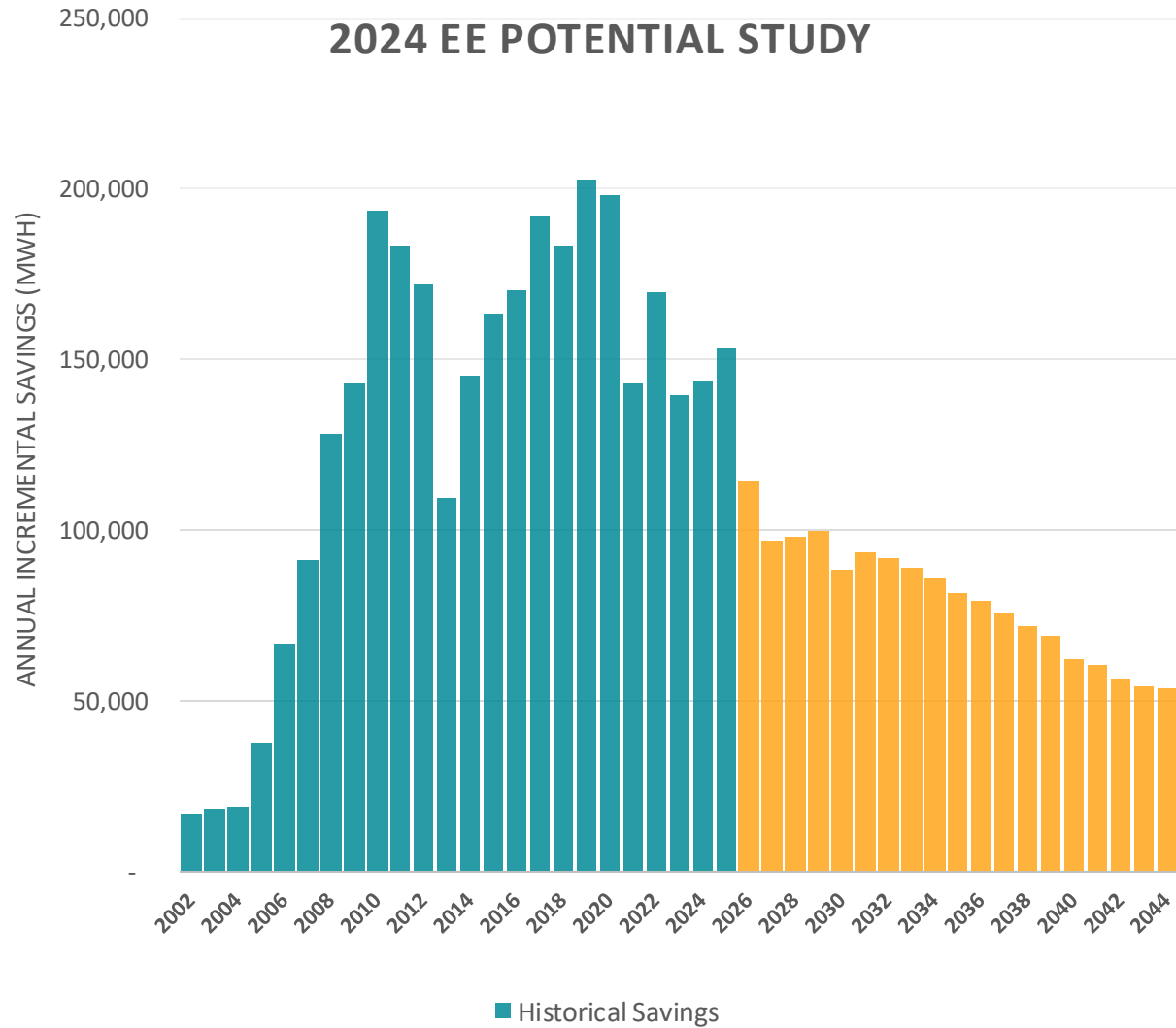
Described methodology & plan for
Demand Response potential study

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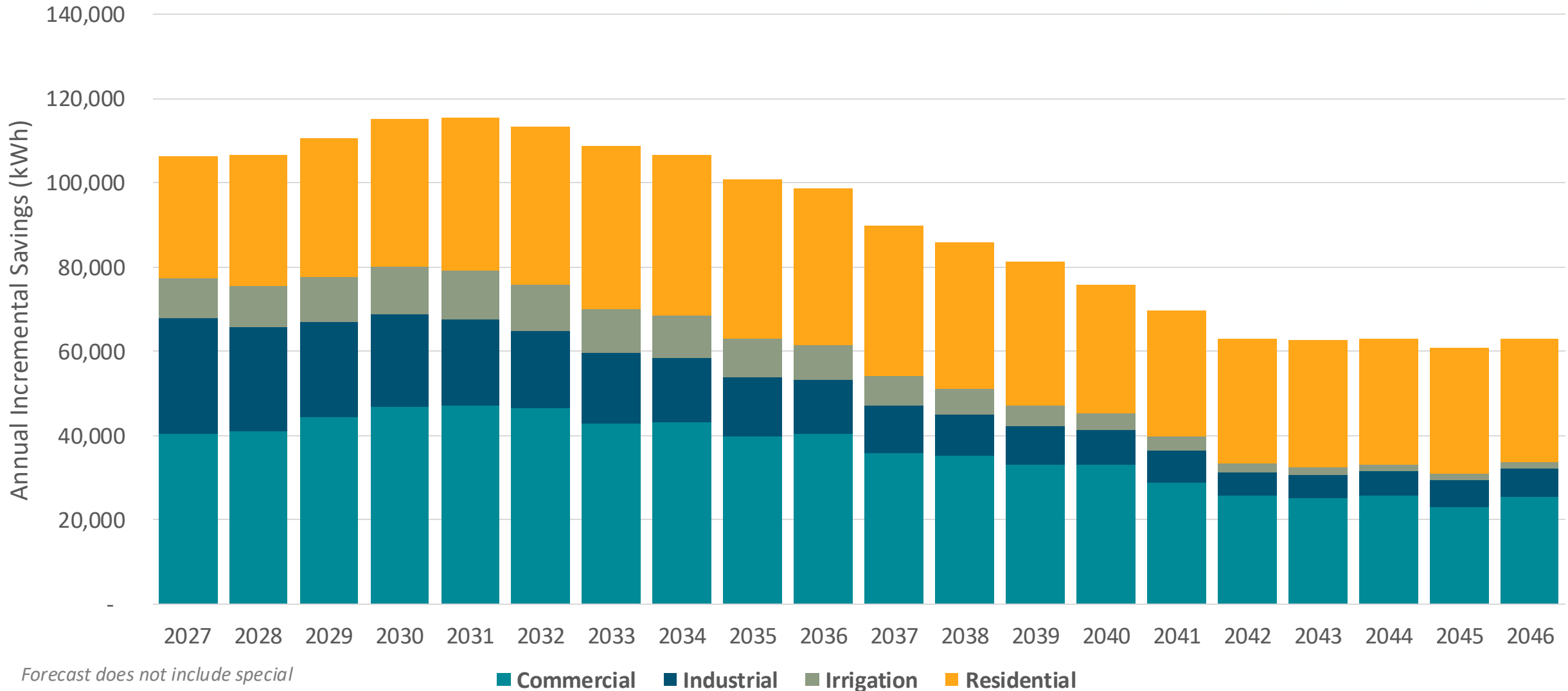


EE Potential Study Comparison



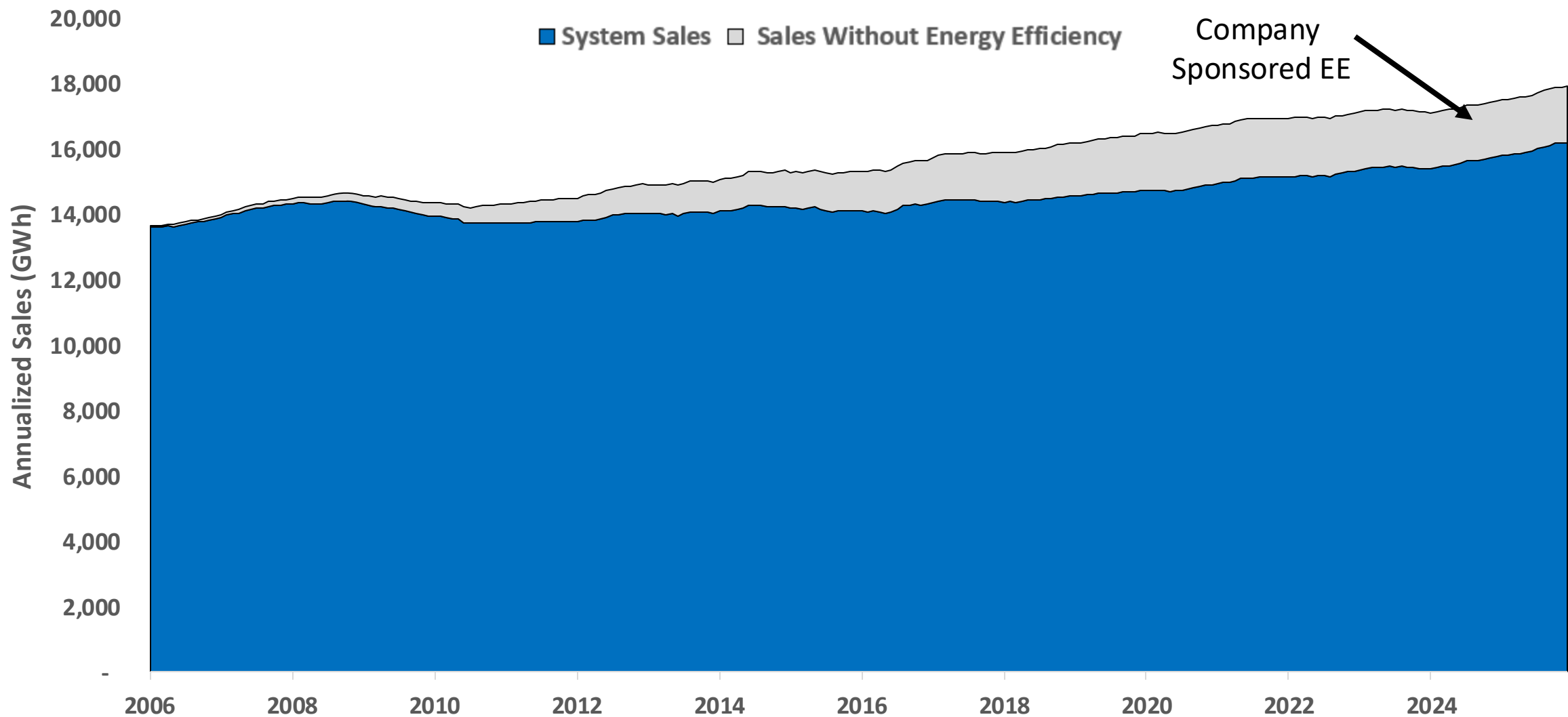
Forecasts do not include special contract customer savings.

2026 EE Potential by Sector



Historic Energy Efficiency

System Sales and Energy Efficiency (GWh)



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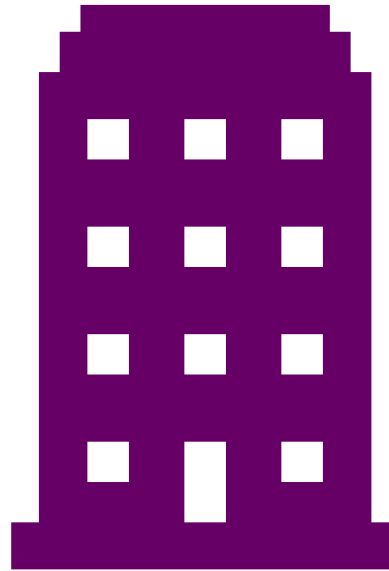
Idaho Power's Existing DR Programs

Irrigation Peak Rewards



- 267.6 MW Max Potential Capacity
- 2,702 Customer Sites

Flex Peak



- 38.8 MW Max Potential Capacity
- 250 Customer Sites

A/C Cool Credit

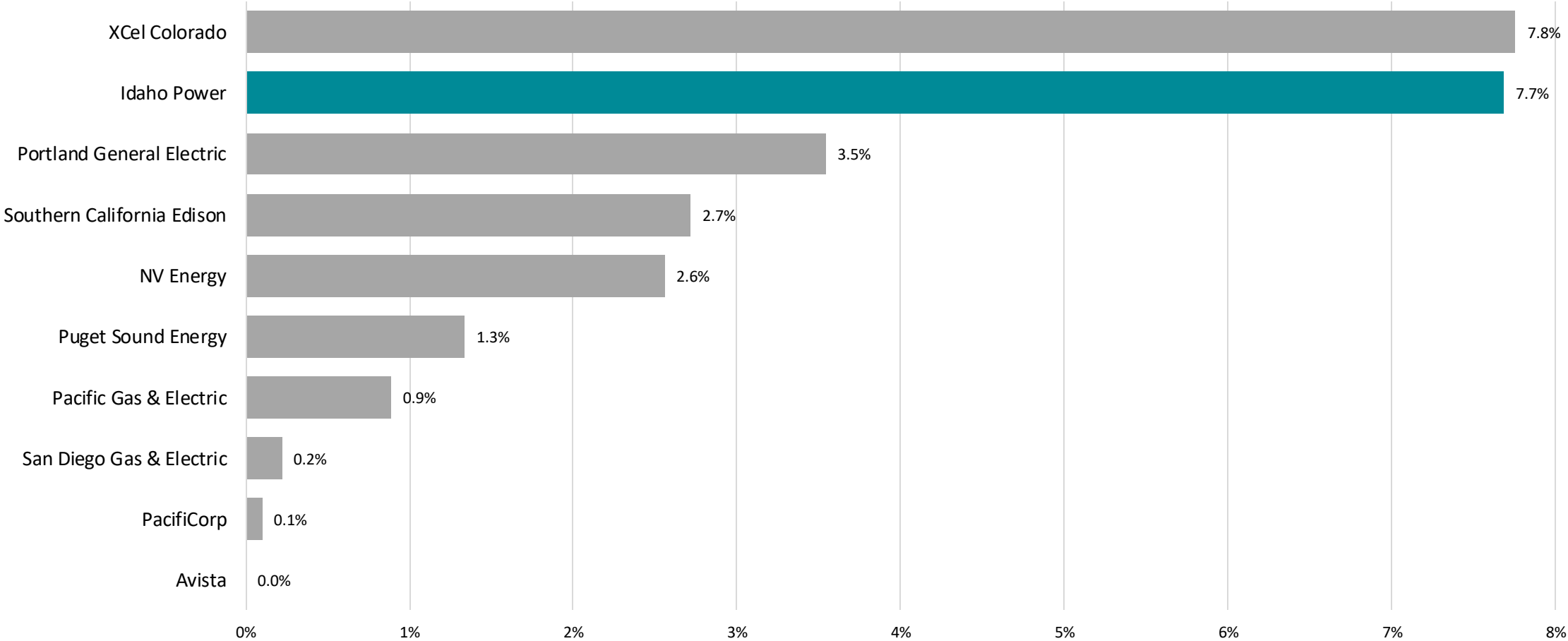


- 22.1 MW Max Potential Capacity
- 16,235 Customer Sites

Idaho Power's Existing DR Programs

Demand response capacity relative to system peak

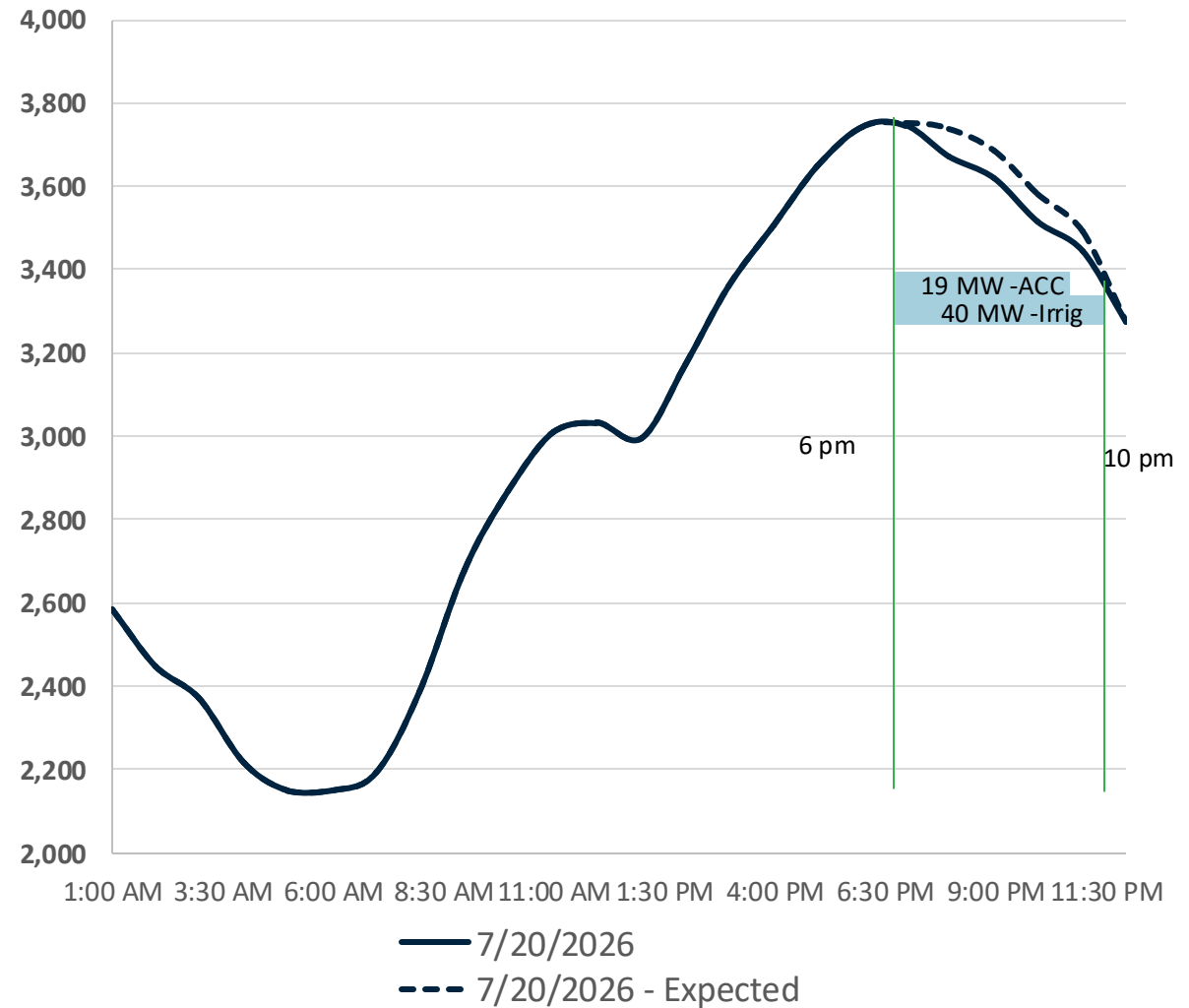
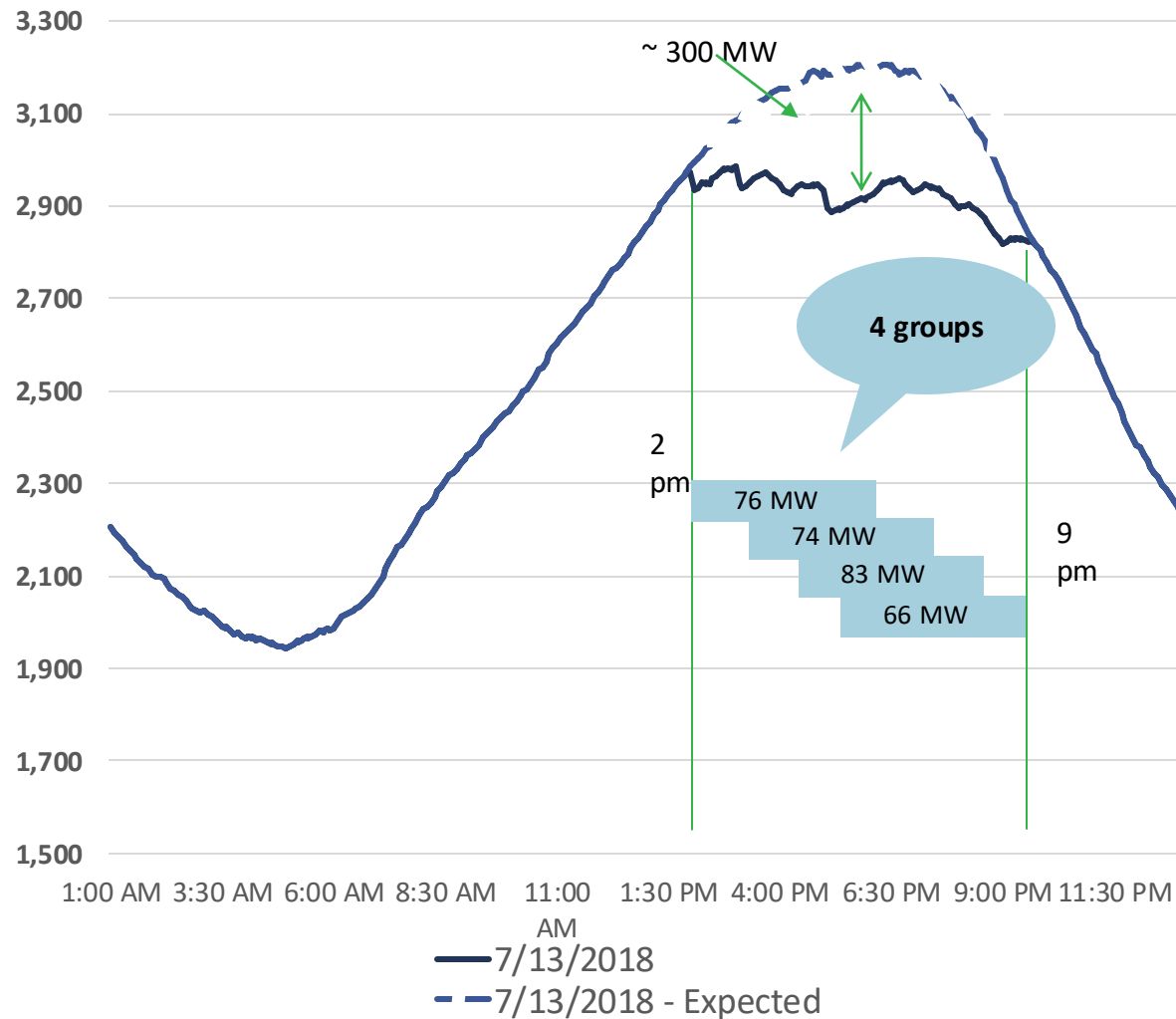
Selected comparable utilities | Source: EIA 2024 Survey



2025 DR Program Parameters

Program	Irrigation Peak Rewards	Flex Peak	A/C Cool Credit
Dates	June 15 - September 15	June 15 - September 15	June 15 - September 15
Available Days	Non-holiday weekdays and Saturdays	Non-holiday weekdays	Non-holiday weekdays
Times Available	3 pm to 11 pm	3 pm to 10 pm	Not Limited
Duration/Day	Max 4 hours per day	Max 4 hours per day	Max 4 hours per day
Per Week	Max 16 hours per week	Max 16 hours per week	Max 16 hours per week
Per Season	Max 60 hours	Max 60 hours	Max 60 hours

Demand Response Examples





Current Program Costs (\$per kW/yr)

Programs	2024	2025
Residential A/C Cool Credit & Smart Thermostats	\$47.25	\$53.19
Irrigation Peak Rewards	\$45.43	\$47.03
Commercial & Industrial Flex Peak	\$27.54	\$26.75

Measuring Demand Response Cost-Effectiveness

Threshold Value for Demand Response Cost-Effectiveness

- Idaho Power determines cost-effectiveness for its demand response programs using aligned on method w/ Idaho Public Utilities Commission
- Using financial and avoided cost assumptions from each Integrated Resource Plan
- Updated annually in DSM report
- 2025 value derived from 2023 IRP numbers = $\$ 64 / kW/year$

Avoided Fixed Cost

(Includes Economic Value from Avoided
Resource Outside of DR Program Parameters)

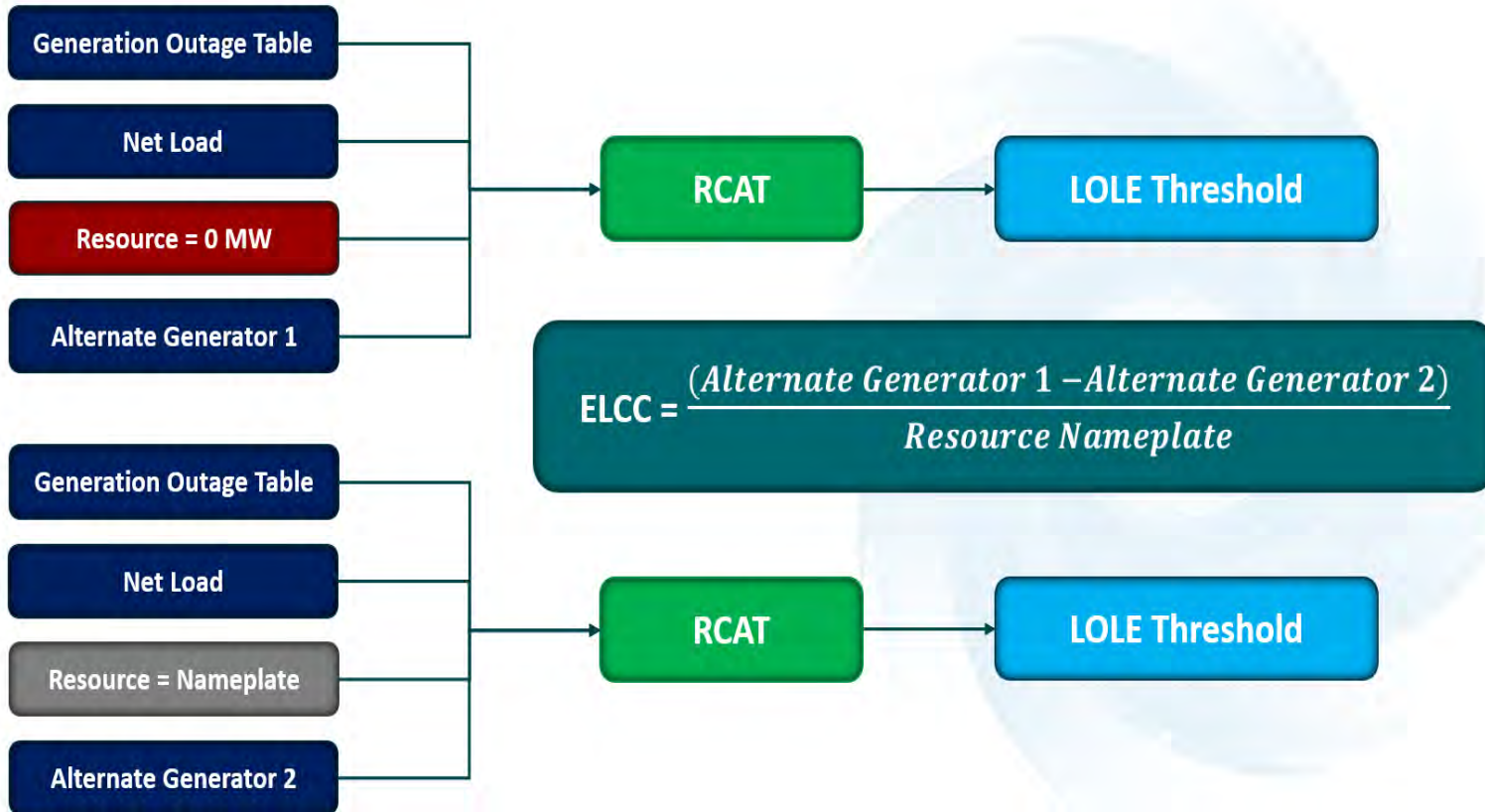
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Capacity Contribution of
Demand Response

=

Resulting
Cost-Effectiveness
Threshold for Existing
DR Programs

ELCC Methodology

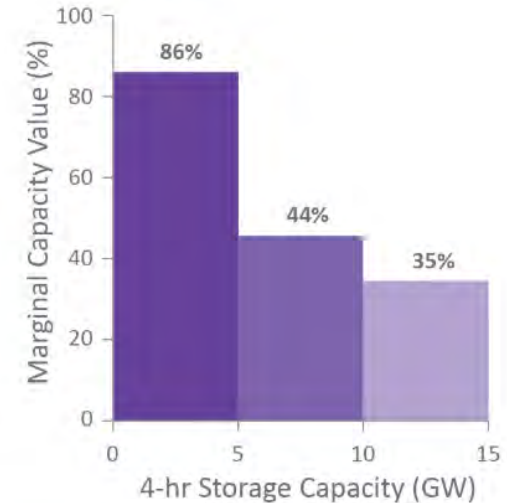
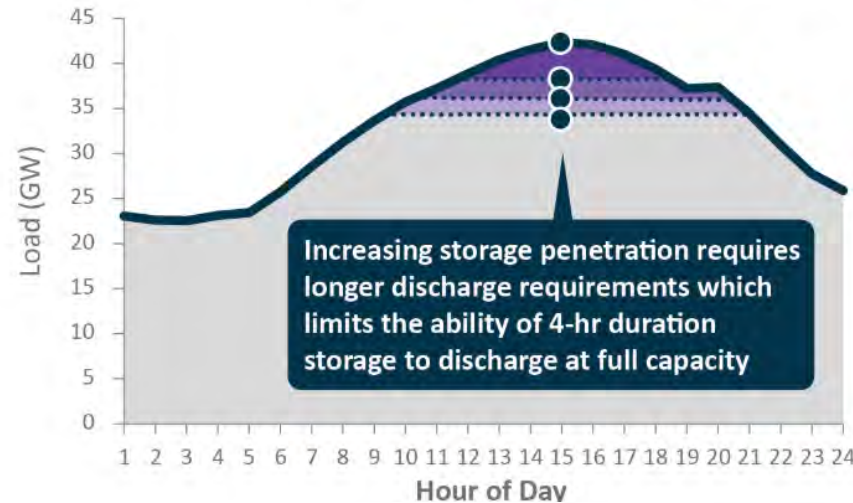


- ELCC provides a way to assess the capacity value of a resource in meeting possible system needs.
- ELCC compares resources to a specific alternate resource.

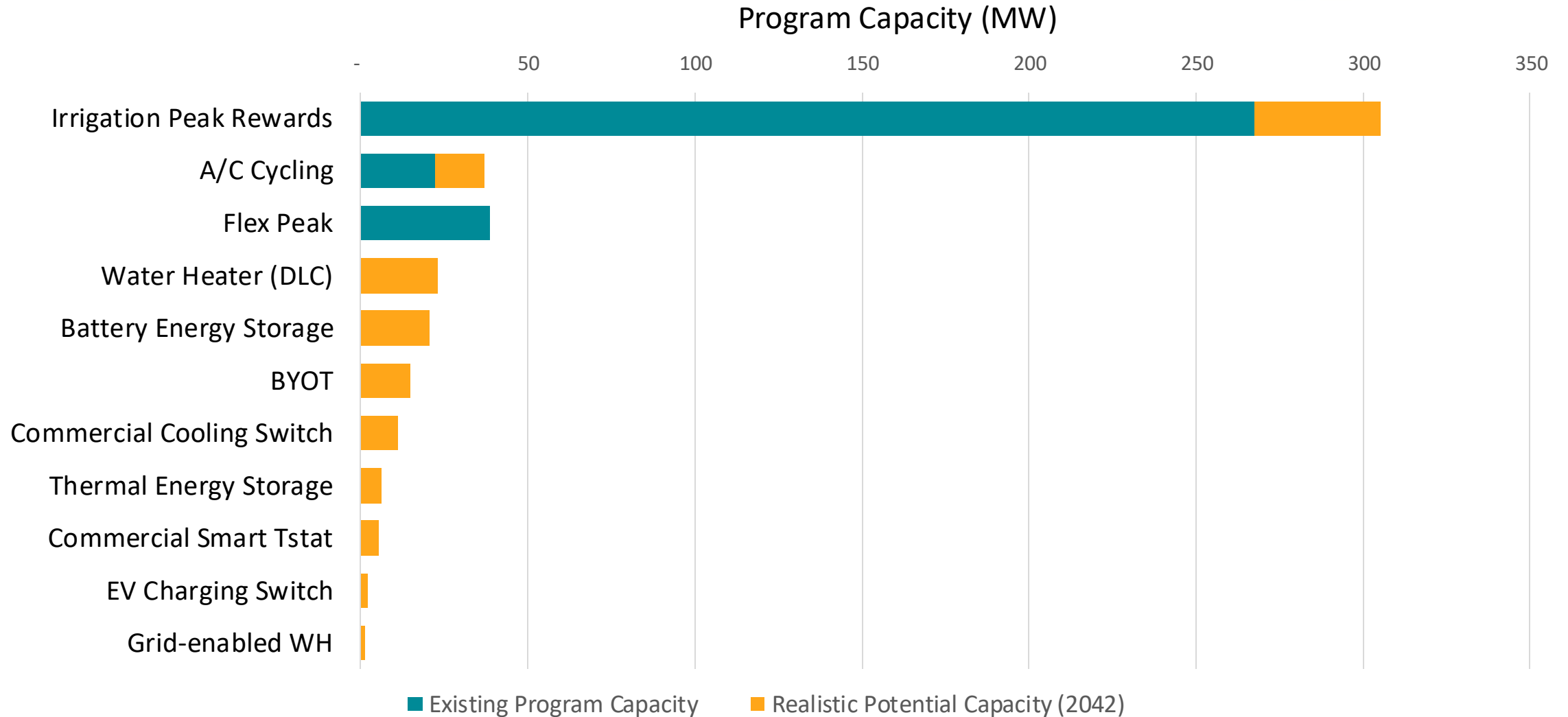
ELCC / Resource Effectiveness

- E3 study
- Not specific to Idaho Power system
- Shows finite resources have diminishing benefit due to duration limits
- Reduces ability to meet load across extended periods
- Results in a diminishing ELCC for those resources
- Batteries very similar to DR

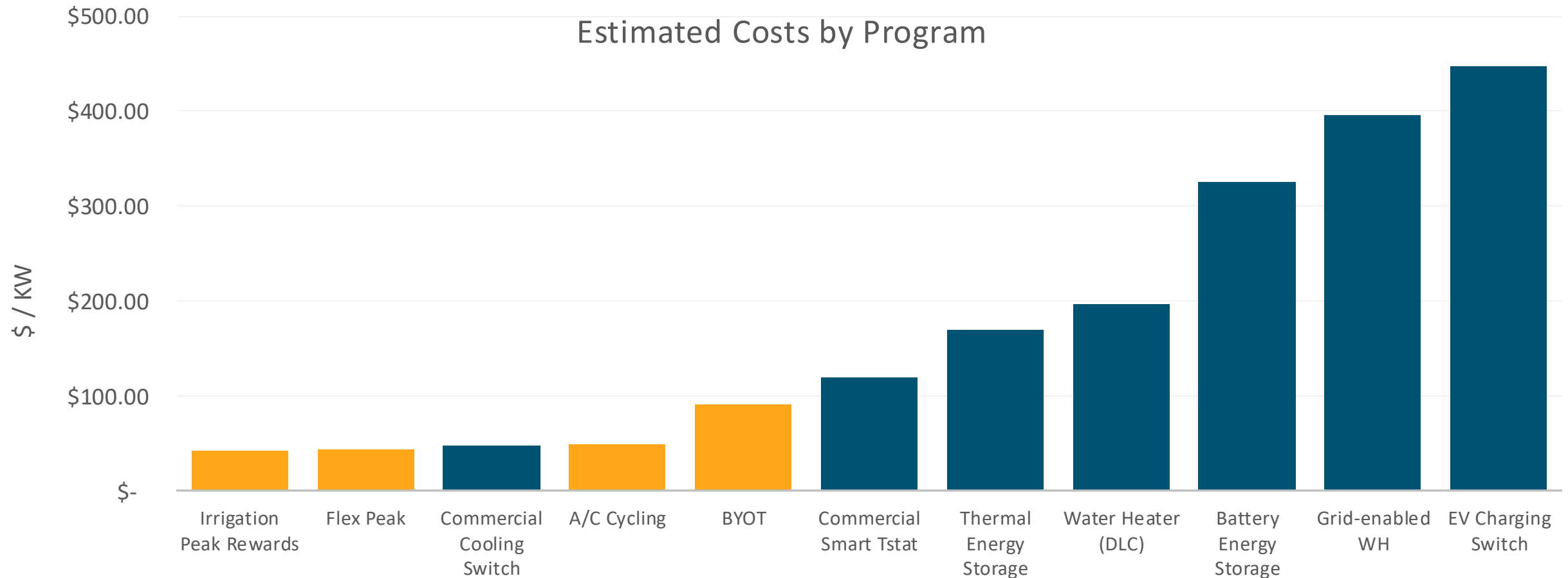
Diminishing Capacity Value of Four-Hour Storage



2022 DR Potential Study Results



2022 DR Potential Study Results



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2027 IRP DR Program Modeling

Finalize DR Potential
Study (MW & Costs)

Identify unique
program
parameters for
analysis

Establish ELCCs
for each group of
unique program
parameters

Calculate cost-
effectiveness
threshold

Determine which
programs meet
the threshold

Report back to
IRPAC

Seeking Feedback

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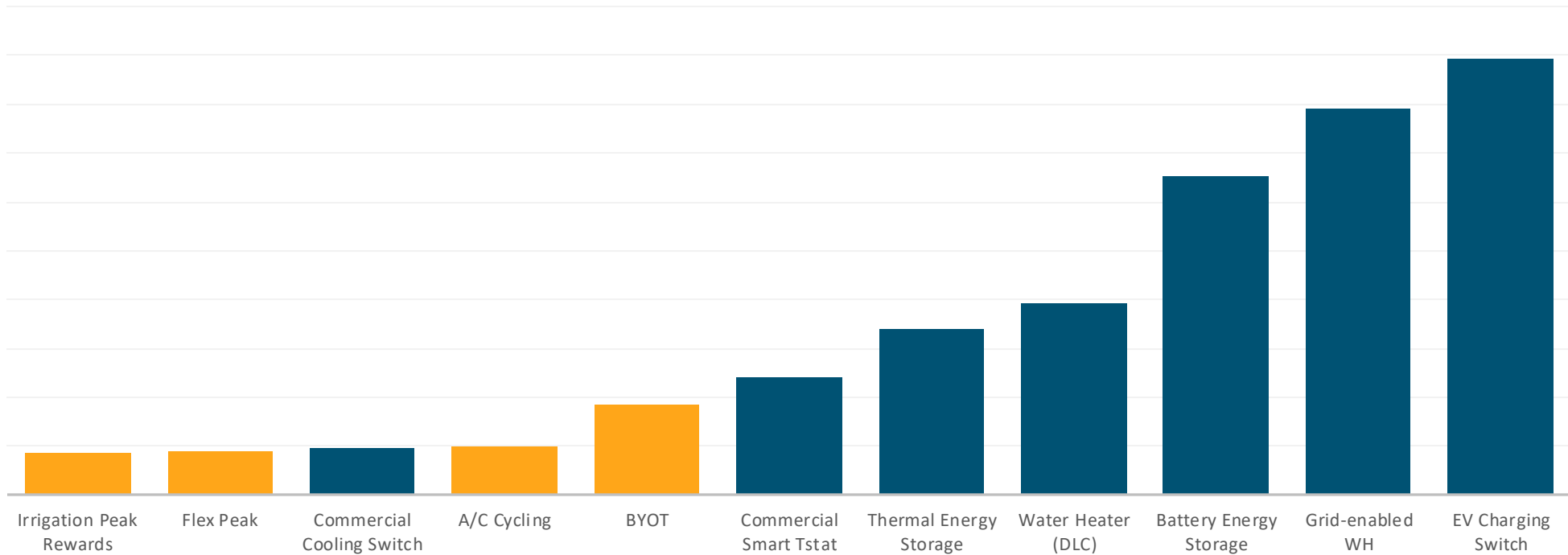
Establish ELCCs for each group of unique program parameters

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\$/kW



Note: Programs are from 2022 DR Potential Study

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Parameters Category	Residential Cooling	C&I Load Control	Irrigation	Direct Install Battery	Customer-Owned Battery	EV Charging	Water Heating
Availability	Jun 15 – Sep 15 Non-holiday weekdays Any hour	Jun 15 – Sep 15 Non-holiday weekdays 3-10 p.m.	Jun 15 – Sep 15 Weekdays + Saturdays 3-11 p.m.	Year-round Any hour	Year-round Non-holiday weekdays Any hour	Year-round Availability Profile	Year-Round Availability Profile
Max Event	4 hr	4 hr	4 hr	2 or 4 hr	2 or 4 hr	4 hr	4 hr
Dispatch Limits	16 hr/week 60 hr/season	16 hr/week 60 hr/season	16 hr/week 60 hr/season	State of charge constraints	16 Hr / Week 160 Hours / Year	Customer charging requirements	Thermal recovery limits
IRP Treatment	Existing Program Expansion	Existing Program Expansion	Existing Program Expansion Contains Subgroups	New Option Using BESS ELCC	New Option Separate 2-hr and 4-hr ELCC values	New Option Availability Higher on Weekends	New Option Availability Higher in Winter

- A/C Cycling
- BYOT
- Direct Install Thermostat

- Flex Peak Program
- A/C Cycling
- BYOT

- IPR Primary Group
- IPR Early Group
- IPR Late Group

- Utility-Owned Battery

- Bring Your Own Battery

- EV Charging (DLC)

- Grid-Enabled ERWH
- Grid-Enabled HPWH
- Switch-Based ERWH

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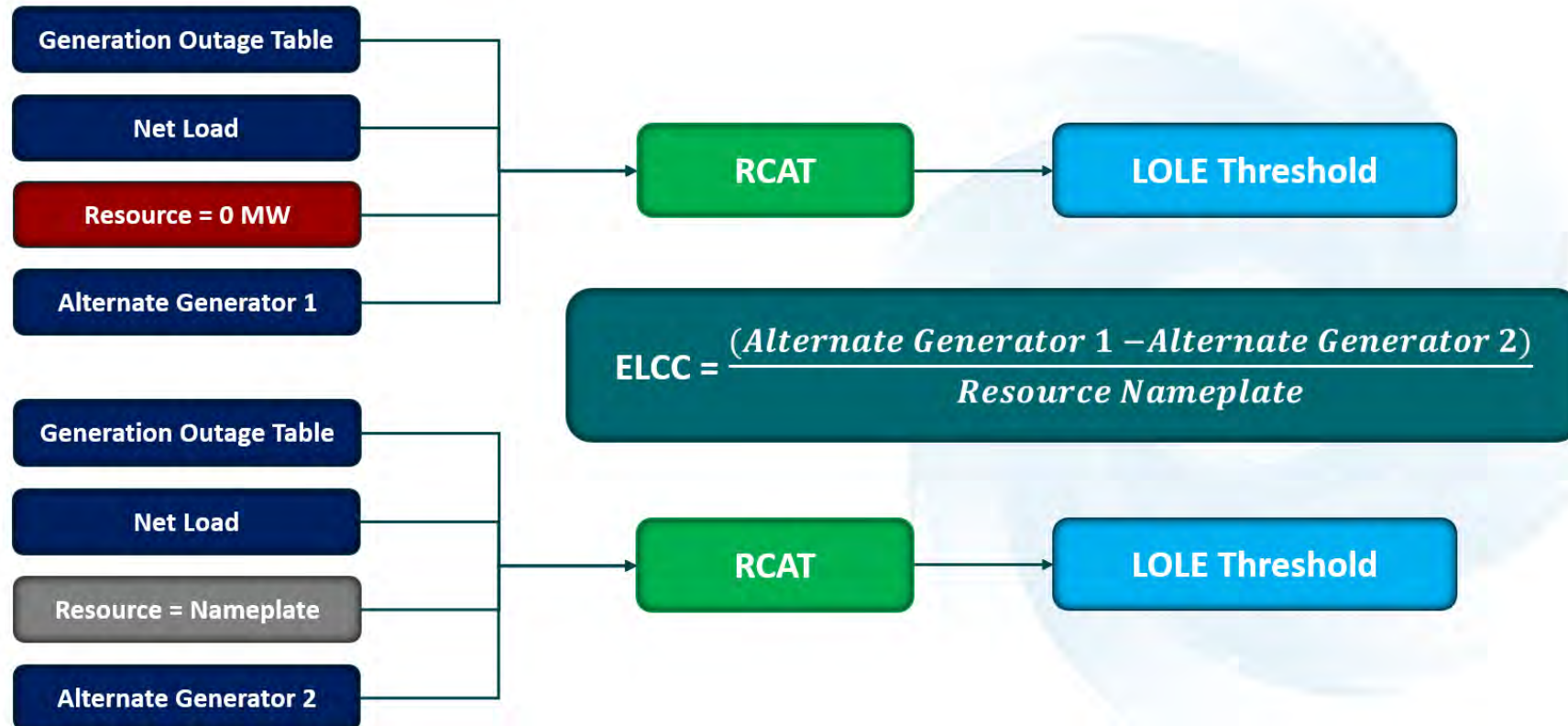
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Threshold for Existing
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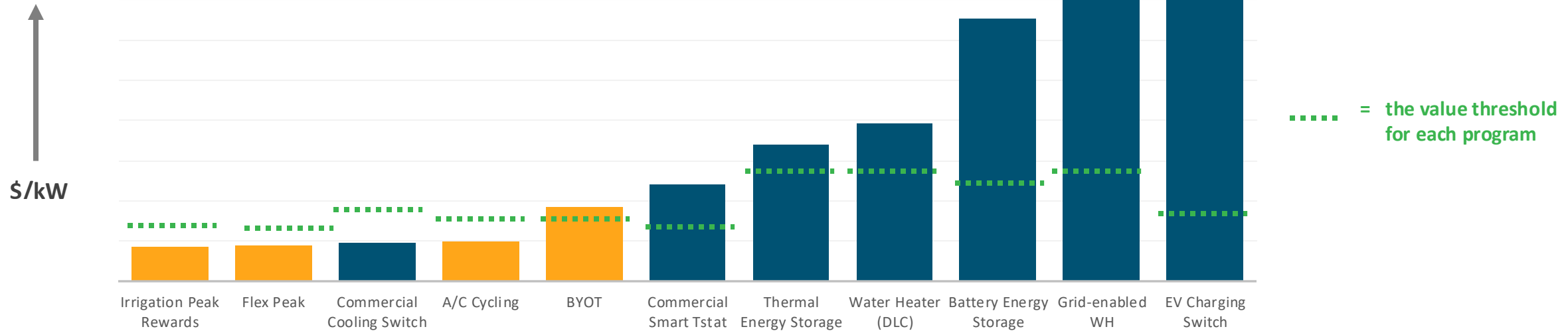
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Note: Programs are from 2022 DR Potential Study, and thresholds are for illustrative purposes.

2027 IRP DR Program Modeling

Finalize DR Potential

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**Future
IRPAC
Meeting**

2027 IRP DR Program Modeling

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Questions / Feedback