



2027 Electric and Natural Gas Integrated Resource Plans
Technical Advisory Committee Meeting No. 7 Agenda
Wednesday, April 15, 2026
Virtual Meeting – 1:00 pm to 4:00 pm Pacific Time

<u>Topic</u>	<u>State</u>	<u>Audience</u>
<ul style="list-style-type: none"> • Introduction and Questions from TAC 6 <ul style="list-style-type: none"> ○ Synthetic Methane with Biomass 		
• Stochastic Wholesale Natural Gas Price Forecast	All	E&G
• Stochastic Wholesale Electric Price Forecast	All	Electric
• Oregon Natural Gas Avoided Cost	OR	Gas
• ETO Energy Efficiency Update	OR	Gas
• Long Run Load Forecast	All	E&G

Microsoft Teams meeting

Join: <https://teams.microsoft.com/meet/22227068638505?p=VwF49oqW3VIQNC2ofV>

Meeting ID: 222 270 686 385 05

Passcode: 4KL9Ld3w

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Introductions 2027 Electric & Gas Integrated Resource Planning

TAC 7 – April 15, 2026

John Lyons, Ph.D. – Senior Resource Policy Analyst

TAC 7 Agenda

- Introduction and Questions from TAC 6
 - Synthetic Methane with Biomass
- Stochastic Wholesale Natural Gas Price Forecast
- Stochastic Wholesale Electric Price Forecast
- Oregon Natural Gas Avoided Cost
- ETO Energy Efficiency Update
- Long Run Load Forecast

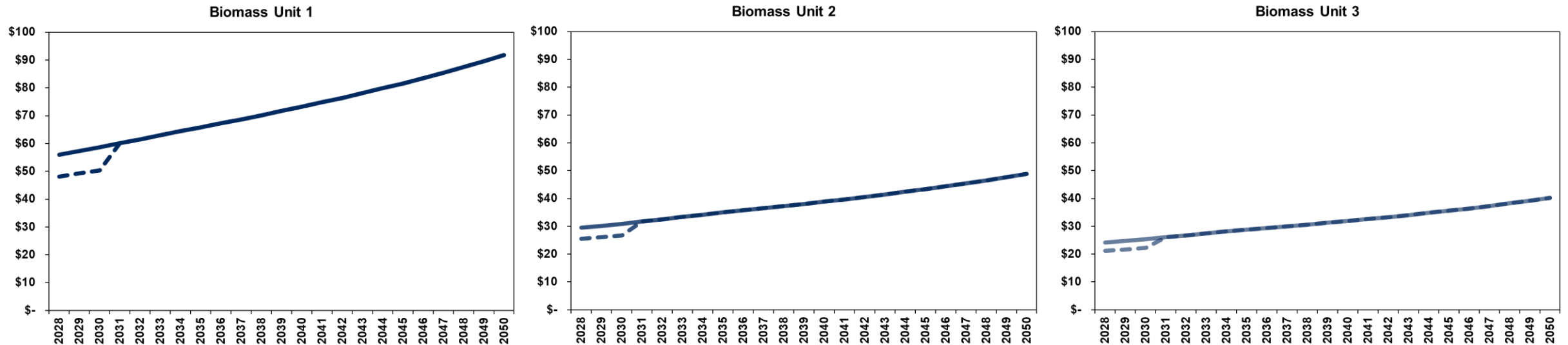
Meeting Guidelines

- IRP team is in office Monday – Wednesday; also available by email, phone and Teams for questions and comments
- Stakeholder feedback responses shared with TAC at meetings, in Teams and in Appendix
- Working IRP data posted to Teams
- All TAC meetings will be virtual on Teams
- Draft TAC presentations emailed three days before each meeting
- Final TAC presentations, meeting notes and recordings posted on IRP page

Virtual TAC Meeting Reminders

- Please mute mics unless speaking or asking a question
- Raise hand or use the chat box for questions or comments
- Respect the pause
- Please try not to speak over the presenter or a speaker
- Please state your name before commenting for the note taker
- This is a public advisory meeting – presentations and comments will be documented and recorded

DRAFT Price Forecasts – Synthetic Methane (Nominal, 20-Year Levelized \$/MMBtu)



§ 48 ITC – Available for projects that begin construction before January 1, 2025

§ 48E Clean Electricity ITC – Available for electricity generation but not for producing RNG from biomass gasification

→ Solid line represents the expected case price forecast considered for the 2027 IRP

TAC 8 – Monday, April 20, 2026 (13:00 – 16:00 PDT)

Topic	State	Audience
Conservation Potential Assessment	All	E & G
Demand Response Potential Assessment	All	E & G

TAC 9 – Friday, May 15, 2026 (13:00 – 16:00 PDT)

Topic	State	Audience
IRP Generation Option Transmission Planning Studies	WA/ID	Transmission
Distribution System Planning within the IRP	WA/ID	Dist.
Transmission Project Example Evaluation	WA/ID	Transmission
QCC Forecast	WA/ID	Electric
Gas Distribution Update	All	Gas
★ Natural Gas Availability & Resiliency Cost	All	Gas

TAC 10 – Wednesday, May 27, 2025 (9:00 – 12:00 PDT)

Topic	State	Audience
CEIP Update	WA	Electric
CETA Interim/Energy Compliance Report	WA	Electric
Load Forecast Update	All	E & G

TAC 11 Technical Modeling Workshop – Monday, June 15, 2026 (13:00 – 16:00 PDT)

Topic	State	Audience
PRiSM Model Tour	All	E & G
Aurora Resource Adequacy Model Tour	WA/ID	Electric
New Resource Cost Model	All	E & G

TAC 12 Wednesday, July 15, 2026 (13:00 – 16:00 PDT)

Topic	State	Audience
Load & Resource Balance and Methodology	WA/ID	Electric
Loss of Load Probability	WA/ID	Electric
WRAP Update	WA/ID	Electric
Draft Preferred Resource Strategy Results	All	E & G
ETO Energy Savings	OR	Gas

TAC 13 – Monday, August 17, 2026 (13:00 – 16:00 PDT)

Topic	State	Audience
Preferred Resource Strategy Results	All	E & G
Oregon Non-Pipe Alternatives	OR	Gas
Aldyl-A Analysis and Targeted Voluntary Electrification	OR	Gas
IRP/Progress Report Outlines	All	E & G
Next Steps	All	E & G

TAC 14 – Thursday, September 17, 2026 (13:00 – 16:00 PDT)

Topic	State	Audience
Portfolio Scenario Analysis	All	E & G
Avoided Cost	All	Electric
Resource Adequacy Results	WA/ID	Electric
CBI Forecast and Results/Energy Burden	WA/OR	E & G
Final Report Overview and Comment Plan	All	E & G
Action Items	All	E & G

Electric Transmission & Distribution 5-Year Plan – October 7, 2026 (10:00 – 12:00 PDT)

Topic	State	Audience
Electric Trans Transmission & Distribution 5-Year Plan	WA/OR	Electric

Other Key 2027 IRP Dates

- Oct 15, 2026 – Draft Electric IRP Released to TAC
- Nov TBD 2026 – Virtual Public Meeting
 - Noon-1pm
 - 6-7pm
- Jan 1, 2027 – Final Electric IRP Filed
- Feb 15, 2027 – Draft Gas IRP Released to TAC
- Apr 1, 2027 – Final Gas IRP Filed

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Stochastic Wholesale E&G Price Forecast

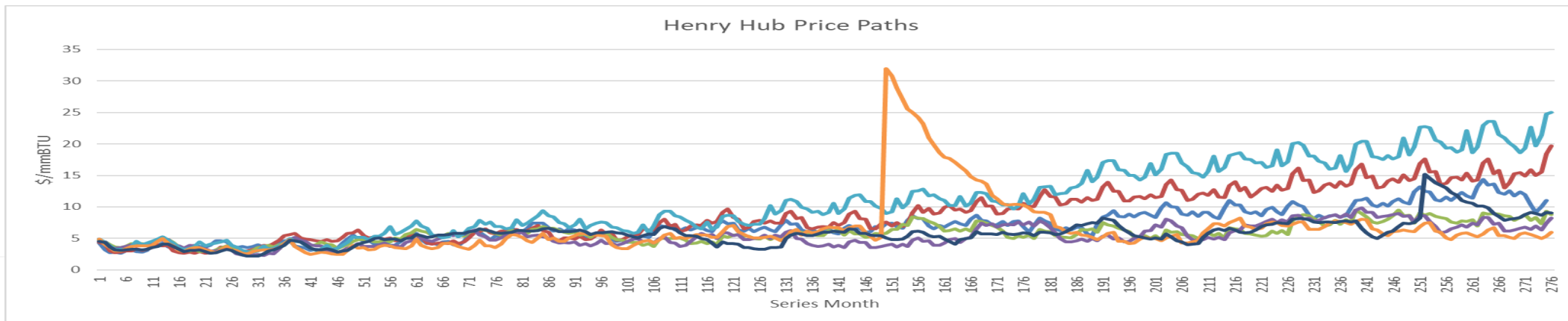
TAC 7 – April 15, 2026

Robert Hughes Resource Planning Analyst

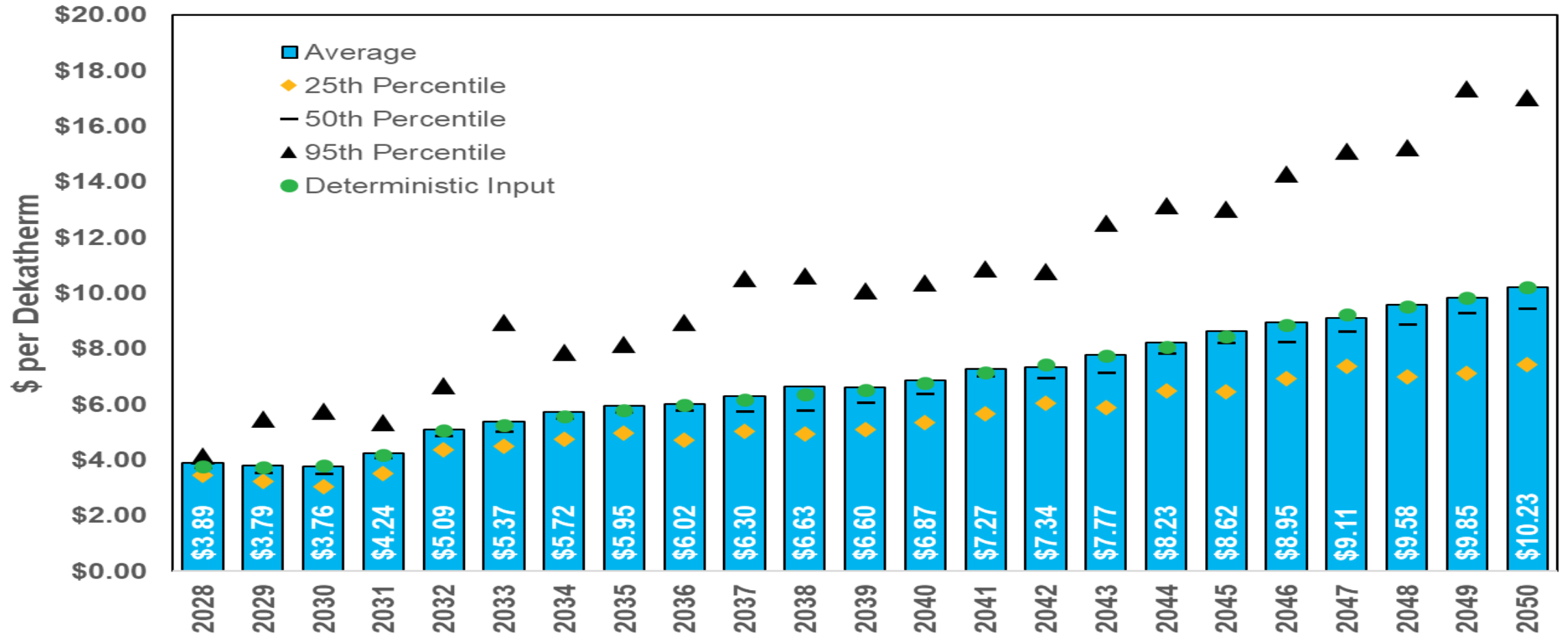
Stochastic Natural Gas Price Methodology

Avista uses a baseline of monthly natural gas prices and varying prices based on a distribution for the 300 stochastic forecasts. Starting with Henry hub, this baseline is a blend of market forward prices, consultant forecasts, and Energy Information Administration's (EIA) forecast.

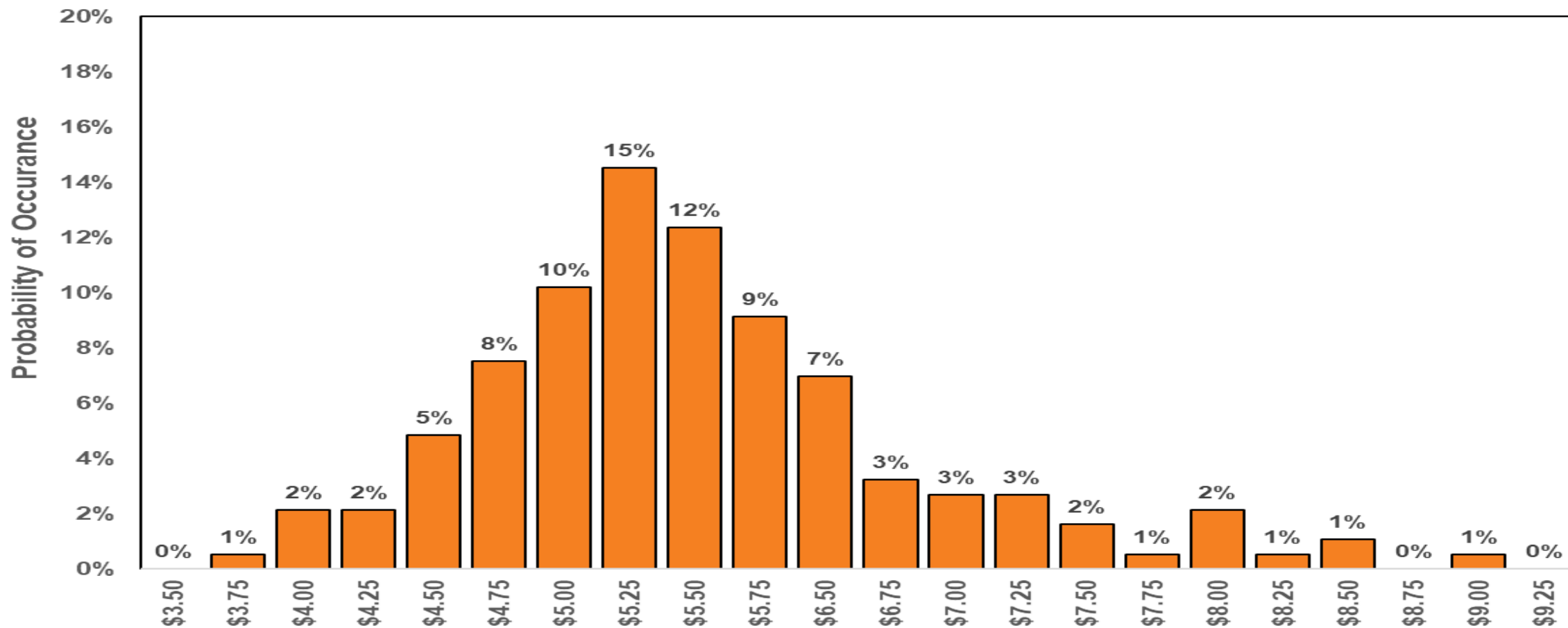
- To change prices an autocorrelation algorithm is applied to allow for price excursions but ensure that they do not move randomly.
- The forecast's month to month expected price change is used as the mean of a lognormal distribution
- Using that distribution, a monthly price change in price is drawn from it. The lognormal distribution shape and variability comes from historical monthly volatility.
- By using this distribution, the model will allow for larger price excursions from the mean seen in the historical dataset.
- The stochastic nature of the forecast creates growth in variability over time. Avista has higher variation in the later years due to the accuracy and knowledge of future gas prices becomes less certain.



Henry Hub Natural Gas Price Forecast



Henry Hub Nominal 20 Year Levelized Price Distribution



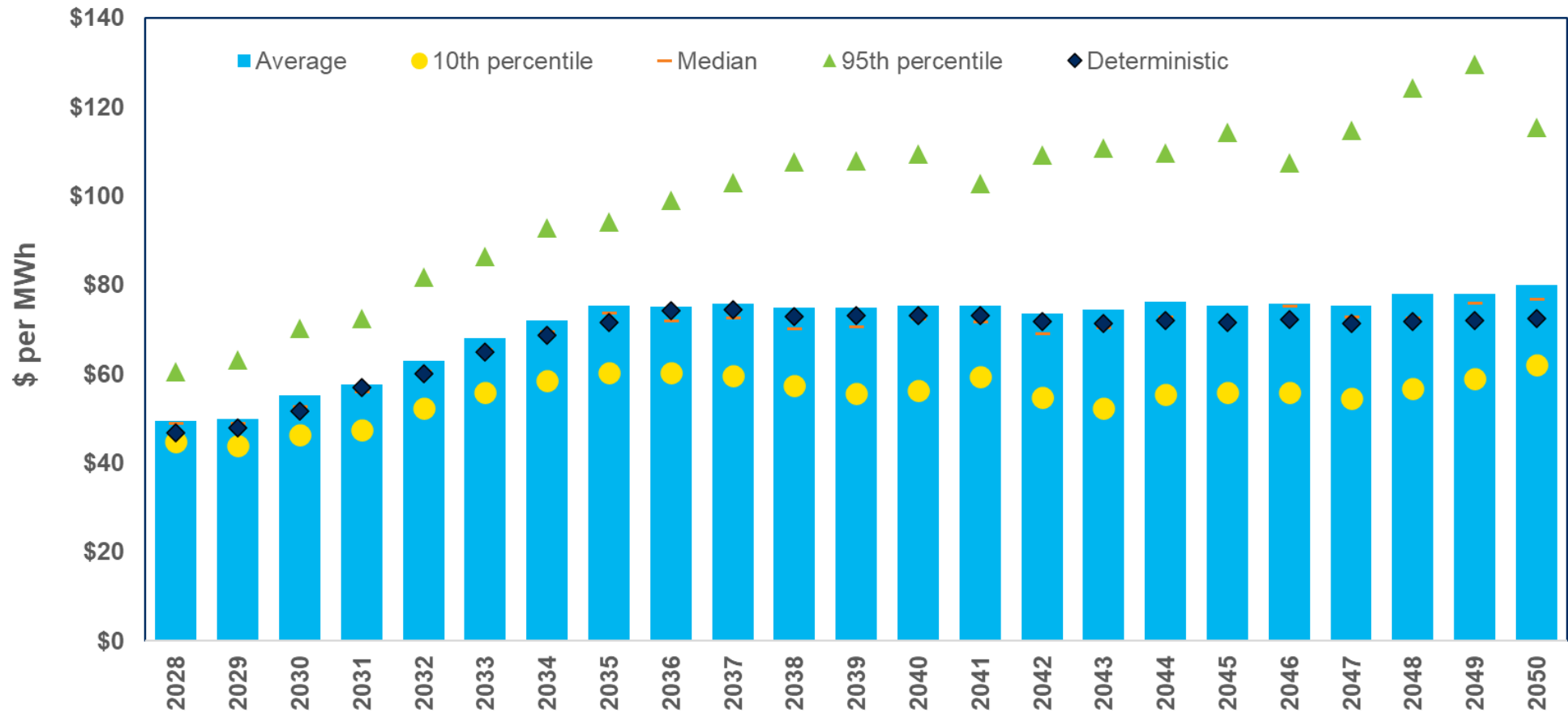
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Draft forecast

Mid Columbia Electric Price Forecast Range with CCA



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Draft forecast

Mid Columbia Electric Price Forecast Range W/O CCA



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Draft forecast

Nominal Levelized Flat Mid Columbia Electric Price Forecast

	WA	ID
	20-Year w CCA	20-Year wo CCA
Deterministic	\$66.02	\$64.21
Stochastic Mean	\$65.26	\$63.28
10th Percentile	\$58.68	\$57.09
50th Percentile	\$67.07	\$64.14
95th Percentile	\$84.98	\$83.02

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Oregon Natural Gas Avoided Cost

TAC 7 – April 15, 2026

Michael Brutocao, Natural Gas Planning Manager

OAR 860-030-0007

Gas Utility Avoided Costs

1. Investor-owned gas utilities shall file a proposed avoided-cost method and draft avoided costs with their integrated resource plans pursuant to Order No. 89-507. The avoided-cost method filed should be appropriate for determining the cost effectiveness of weatherization measures from the gas utility's perspective.
2. A gas utility may propose or the Commission may require a gas utility to file the data described in OAR 860-030-0007(1) during the two-year period between filing integrated plans pursuant to Order No. 89-507 to reflect significant changes in circumstances, such as acquisition of a major block of resources. Such a revision will become effective 90 days after filing.
3. At least every two years, the gas utility must file with the Commission the data described in section (1) of this rule.

UM 1893

Avoided Cost Component	Description
Inflation rate	Rate of inflation assumed in IRP
Real Discount rate	Company's Real after-tax weighted average cost of capital (WACC)
Regional Act Credit	10% NW Power Act Credit applied to avoided cost value
Commodity and Transport Prices	Cost of marginal resource + Cost to transport marginal resource
Distribution Capacity	Costs associated with distribution system reinforcements
Supply Capacity	Costs associated with supply capacity expansion
CO ₂ Compliance	Cost of bringing carbon emissions into compliance with CCA
(NEW) CO ₂ Compliance Risk Reduction	Costs associated with uncertainty in compliance resource acquisition costs
Risk Reduction	Costs associated with gas price volatility and uncertainty

DRAFT Avoided Costs

- Graphic of avoided costs in Oregon should be available for the TAC meeting

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Avista Natural Gas Energy Efficiency Savings

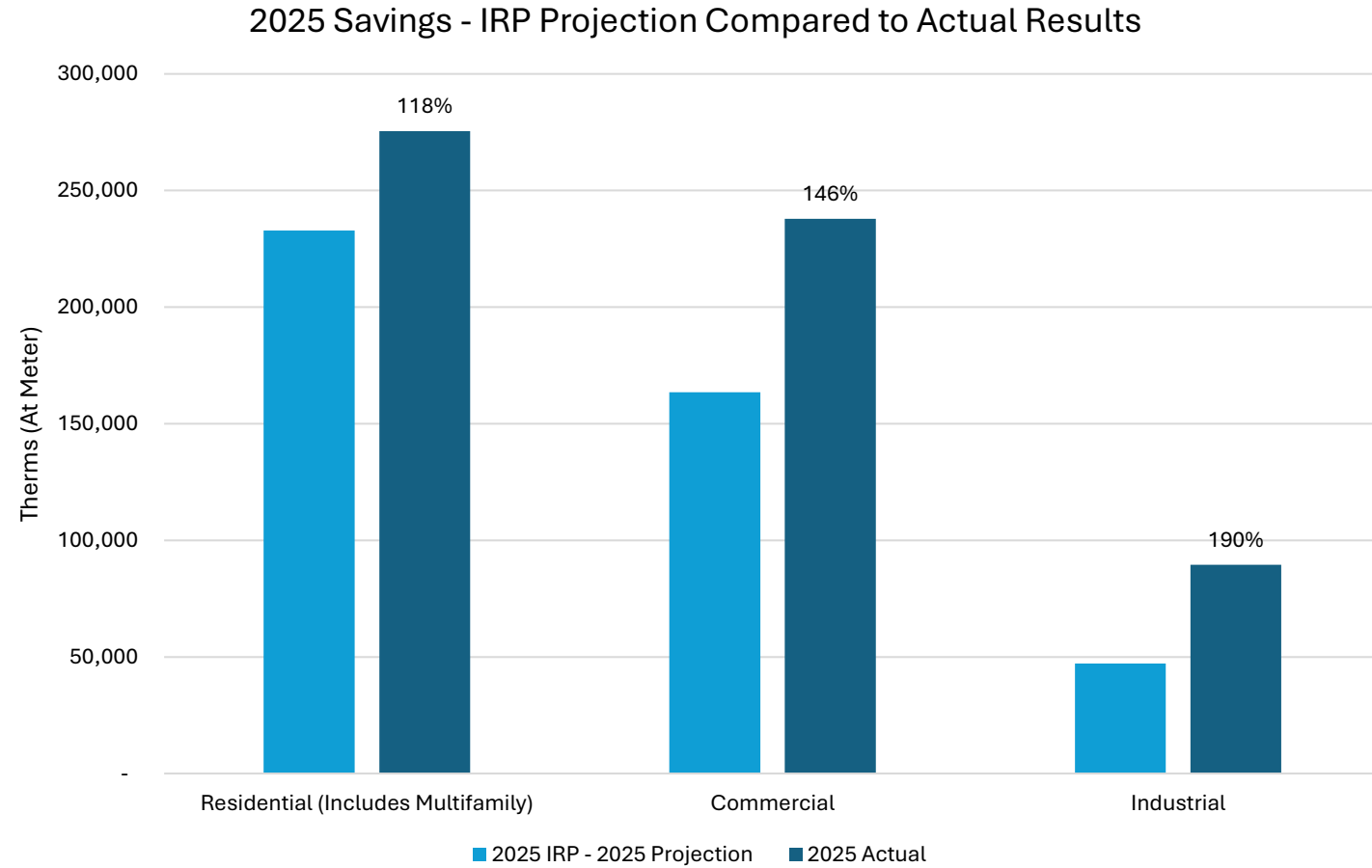
Since 2025 IRP

April 2026



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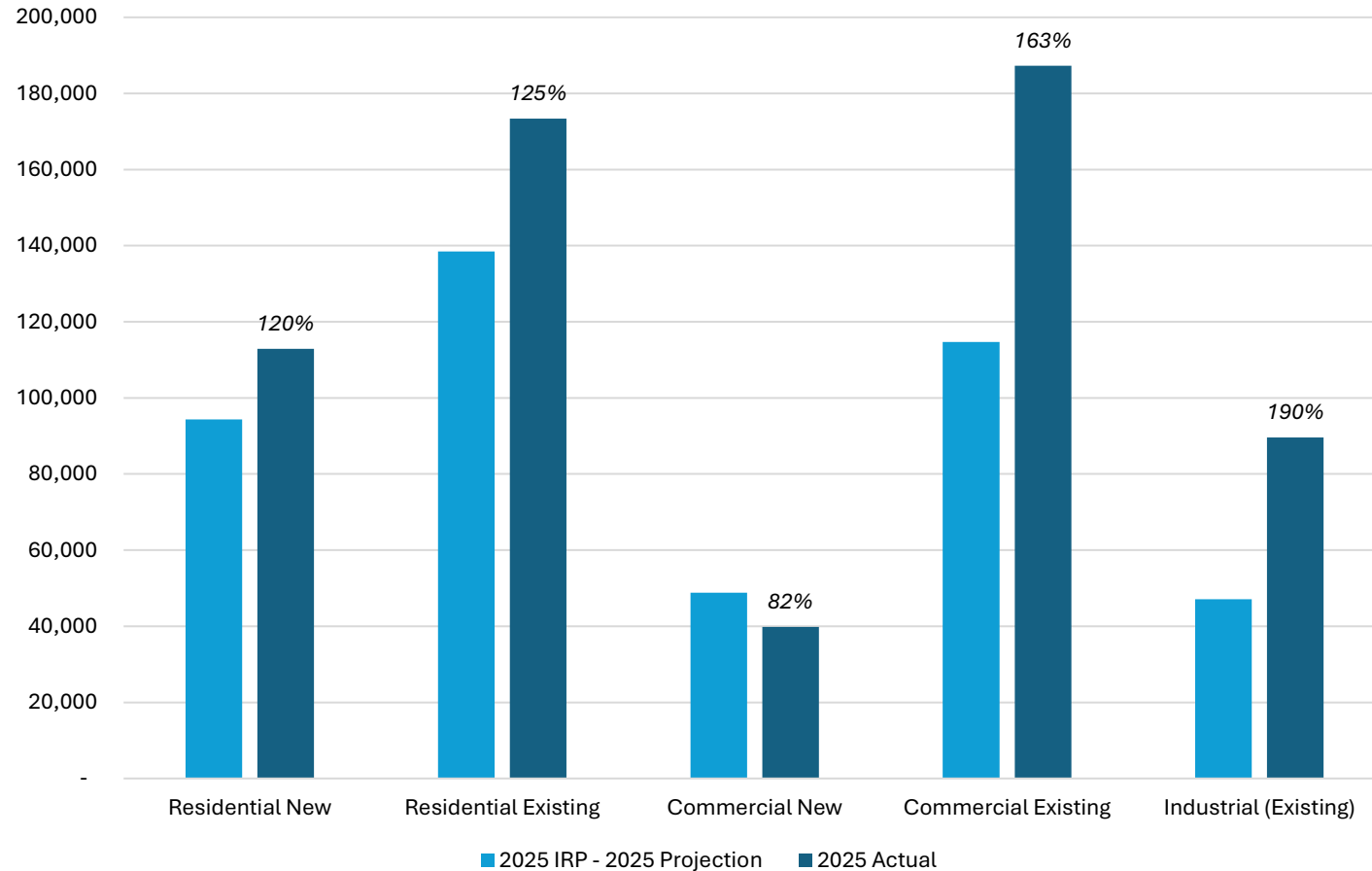
Savings by Sector



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Savings by Sector & Building Type

2025 Savings - IRP Projection Compared to Actual Results



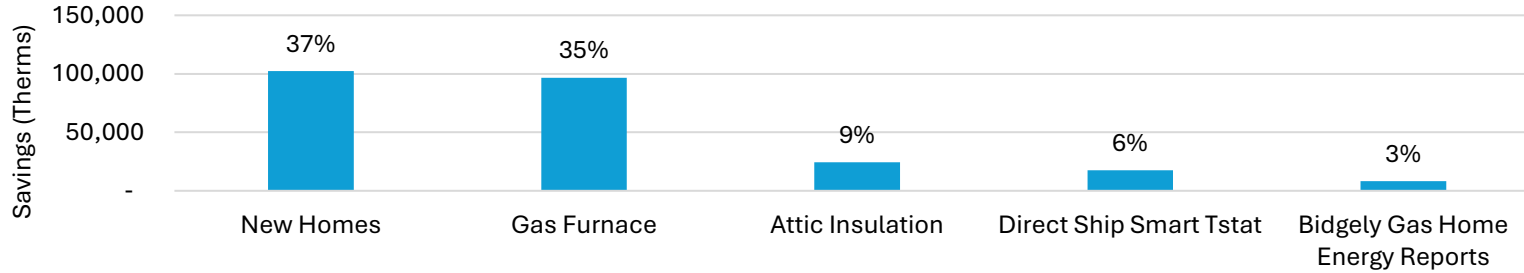
Savings by Program Track

	Program Track	2025 – IRP Projection	2025 Actual	2025 Actual - % of IRP Projection
<i>Residential New</i>	New Manufactured Homes	1,838	7,459	406%
	New Single-Family Homes*	92,526	105,427	114%
<i>Residential Existing</i>	Smart Thermostats	11,836	20,014	169%
	Thermostat Optimization	933	1,310	140%
	Water Heating	2,844	3,914	138%
	Shell	65,087	32,538	50%
	Space Heat	50,421	95,664	190%
	Existing Multifamily	7,340	11,575	158%
<i>Commercial New</i>	New Buildings*	48,785	39,823	82%
<i>Commercial Existing</i>	Strategic Energy Management (SEM)	14,816	83,032	560%
	Non-SEM	99,840	104,236	104%
<i>Industrial (Existing)</i>	SEM	667	10,612	1592%
	Non-SEM	46,457	78,954	170%
	Total	443,388	602,891	136%

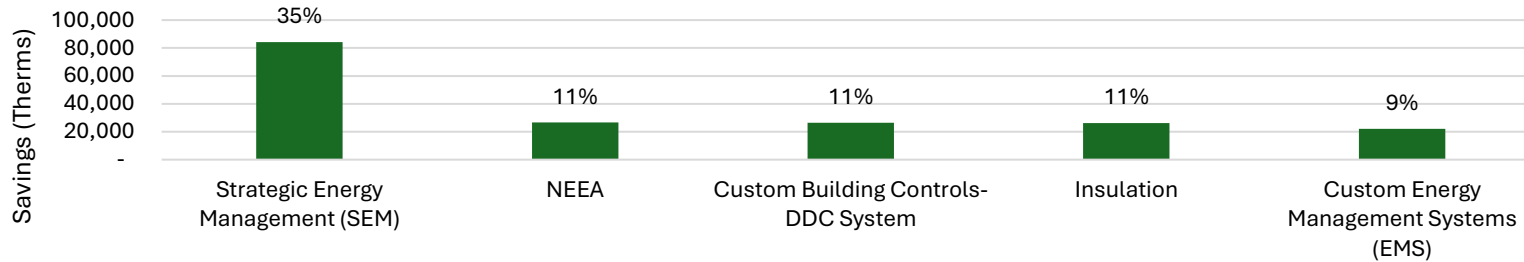
*Please note: New Single-Family Homes and New Buildings include NEEA Residential and Commercial Market Transformation activities, respectively.

Top Measures

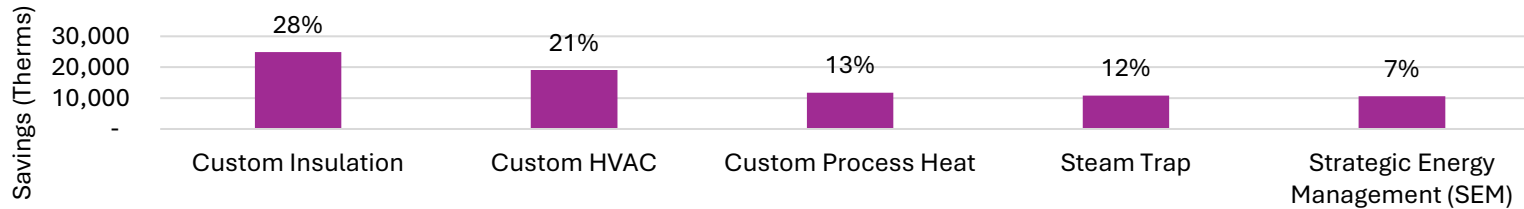
Residential



Commercial



Industrial



*Please note that each chart utilizes a different scale

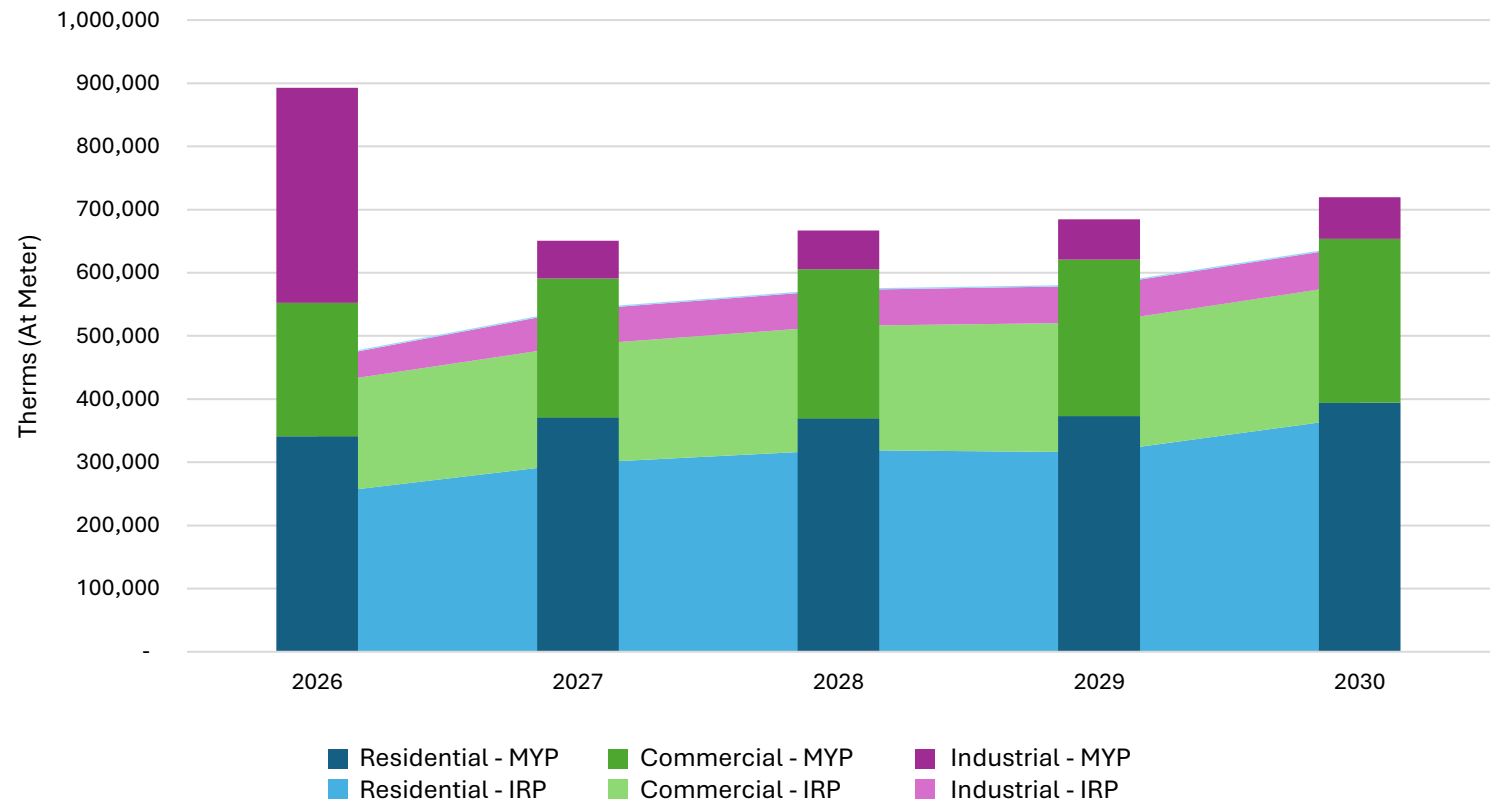




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Projected Savings

Projected Savings - 2025 IRP Compared to Multiyear Plan (MYP)



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Questions?

Willa Perlman, Planning Analyst
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Energy Trust Dual-Fuel Heat Pump Pilot Update Implementation & Evaluation April 2026



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Evaluation Overview

Two phased evaluation

Phase 1
January – December 2025

Objectives:

Pilot process

Customer perspectives &
experience

Contractor perspectives &
market activity

Phase 2
October 2026 – *July 2027

Objectives:

Gas & electric usage

Gas & electric peak demand

Customer cost & carbon
analysis



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Customer Findings

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Customer Value Perspective (n=28)

Most frequently mentioned benefits:

- Central cooling (92%)
- Improved health (60%)
- Lower bills (28%)

Energy savings was only mentioned as a benefit by 10% of respondents

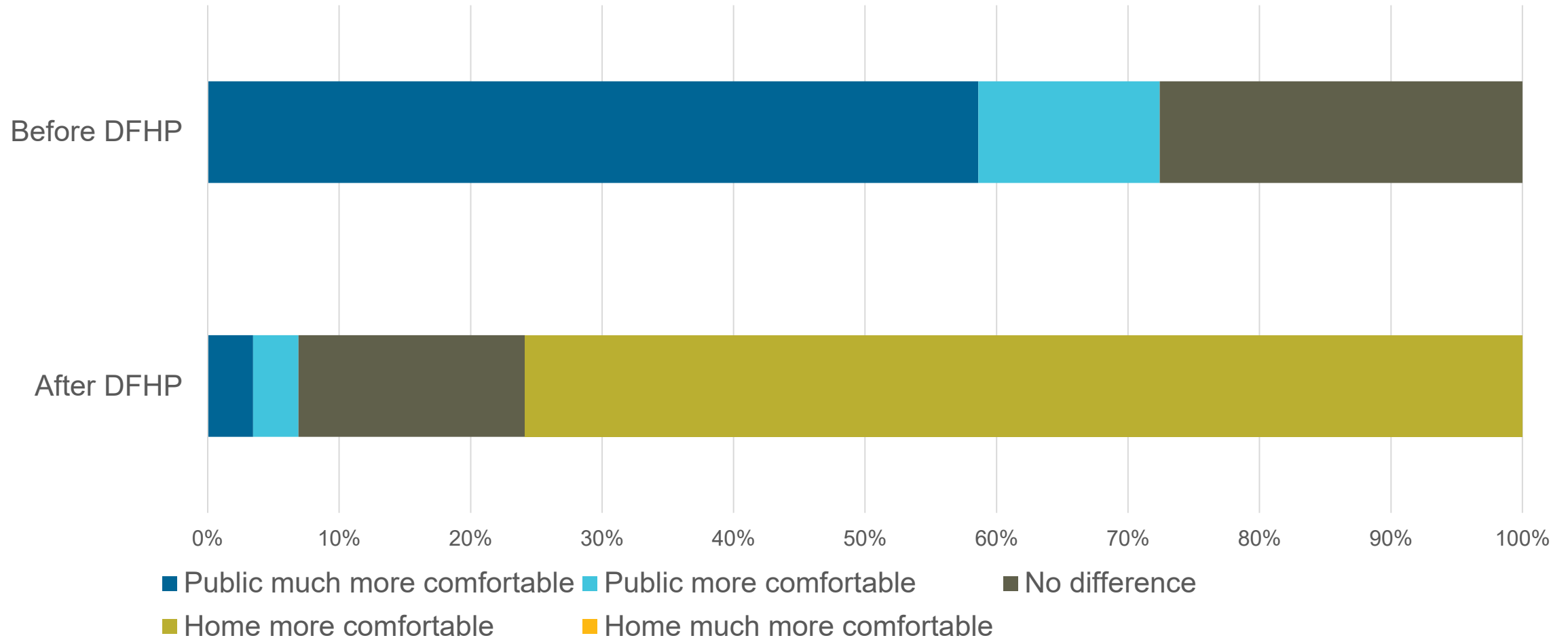
Backup fuel resilience was not mentioned as a benefit by any respondents



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Customer Summer Comfort Levels (n=29)

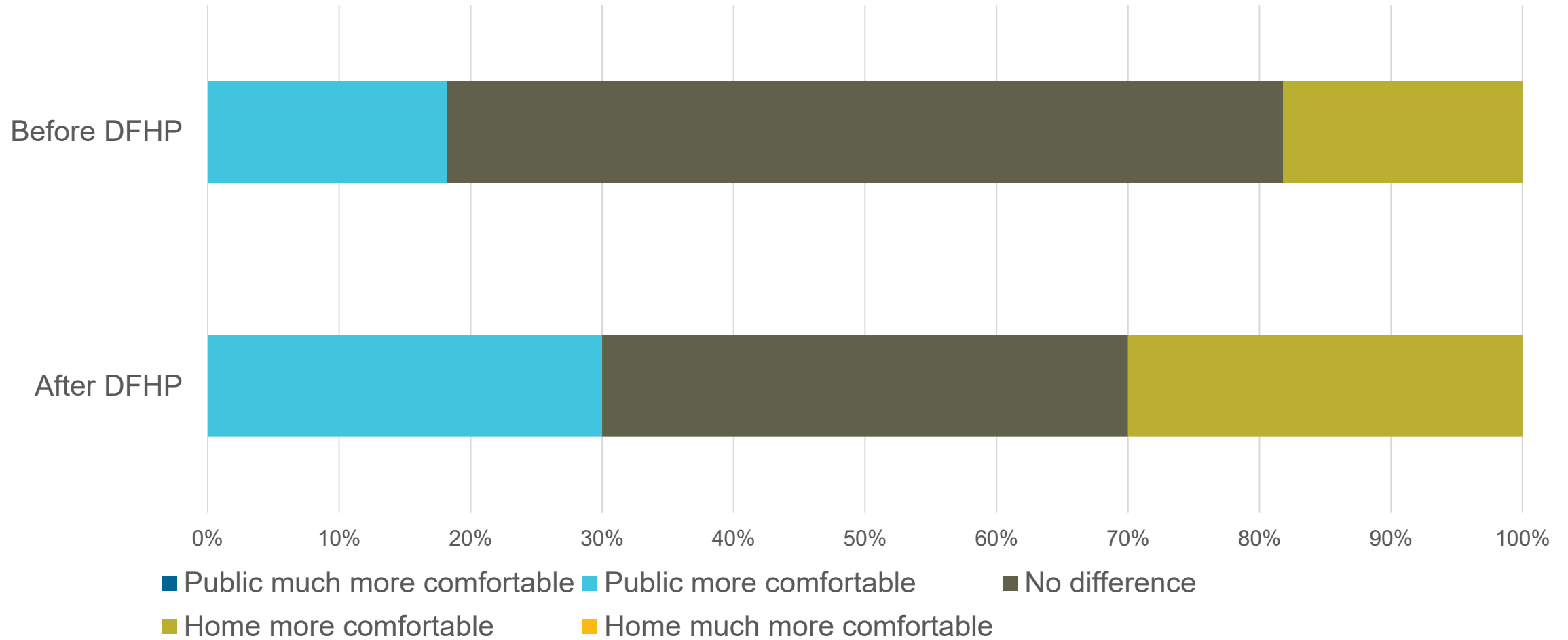
Compared comfort of their home to an accessible public space



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Customer Winter Comfort Levels (n=11)

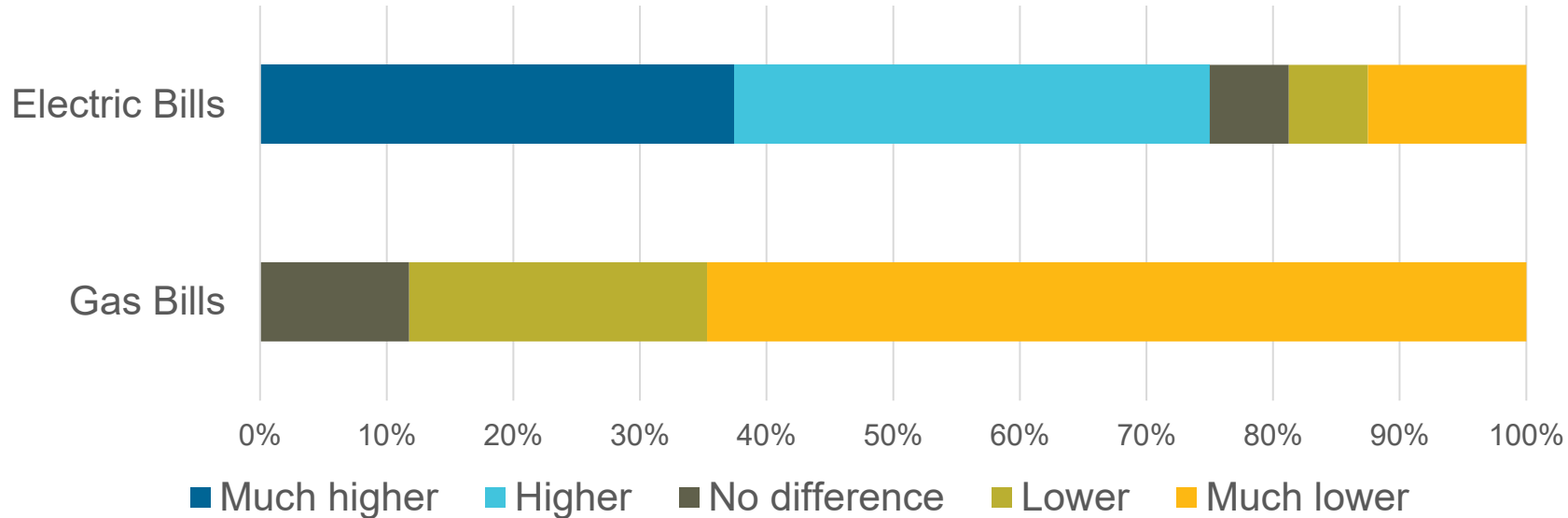
Compared comfort of their home to an accessible public space



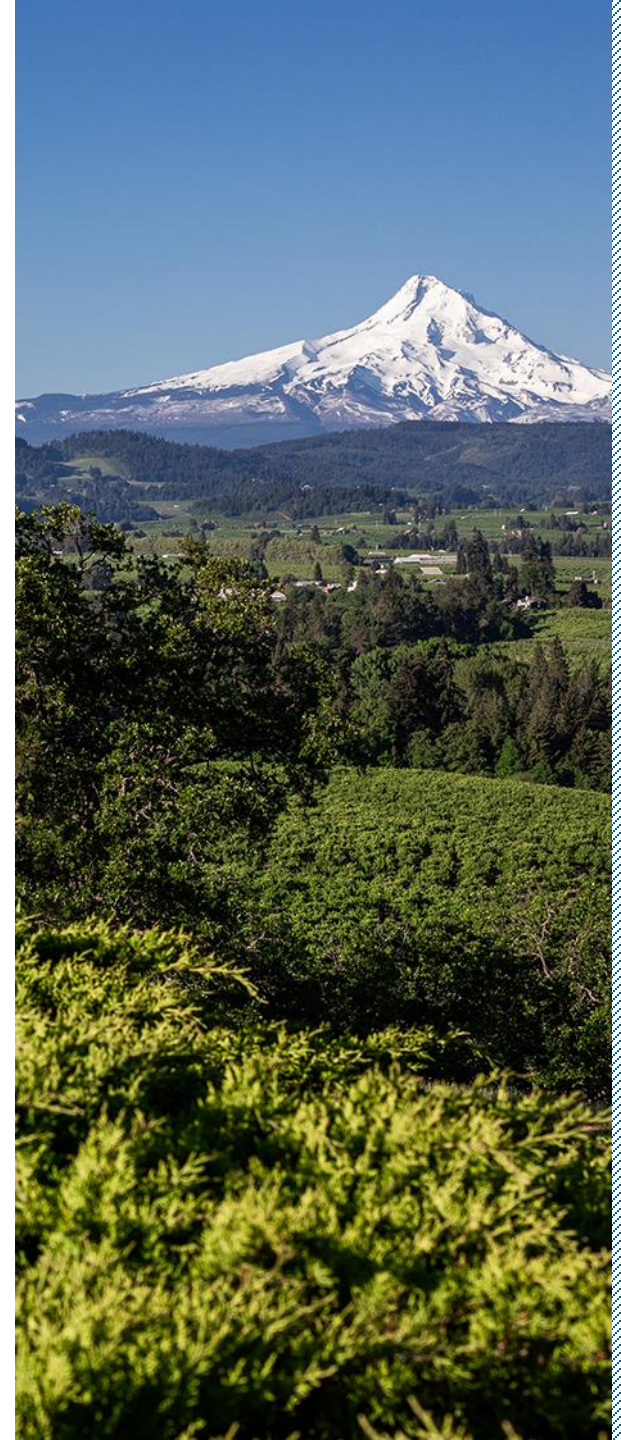
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Customer Cost Perspectives (n=17)

Customer cost anxiety was present for electric bills



“Respondents who experienced much higher electric bills were more vocal about these changes than those experiencing much lower natural gas bills, so there is a perception about the electric bill increases more than offsetting any reduction in natural gas bills.”



Other Customer Findings

- Overall system satisfaction was high (97%)
- Customers expressed dislike for and had to get used to:
 - Cooler register exhaust temperatures
 - Slower response & heating times
- Set thermostats differently in each season
 - More cost-focused and aligned with DOE in winter
 - More comfort-focused and less aligned with DOE in summer



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Trade Ally Contractor Findings

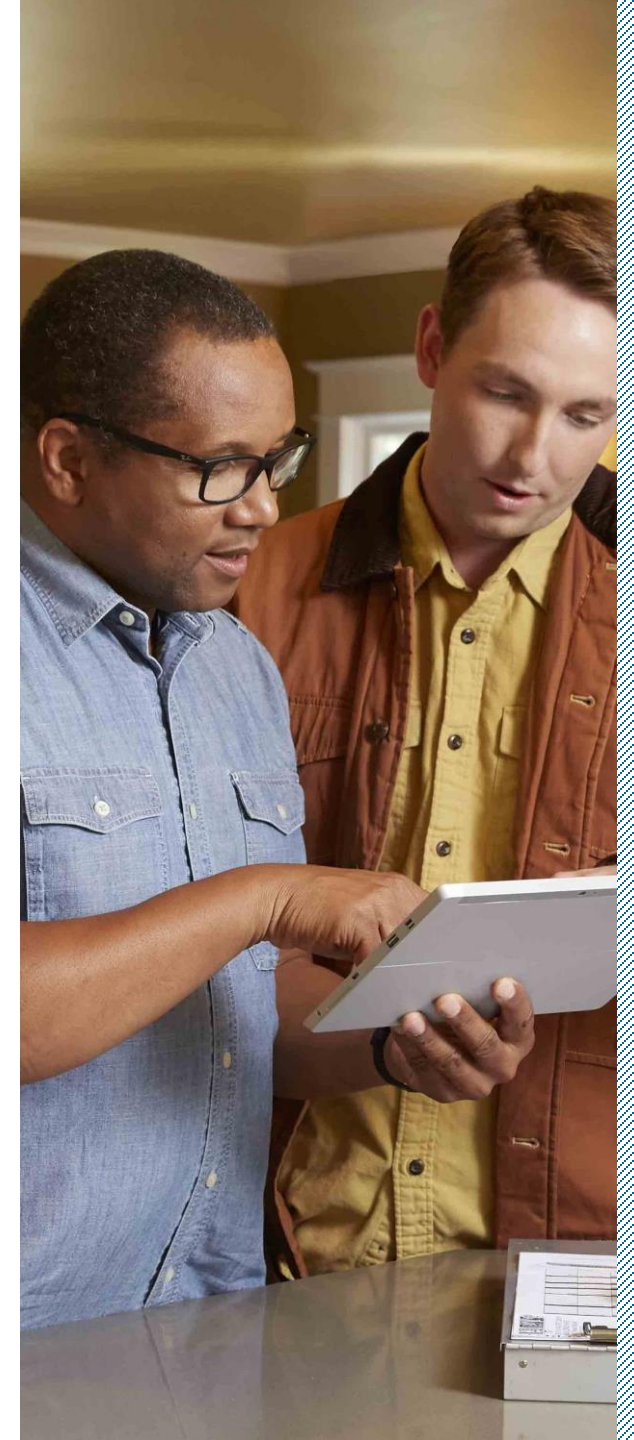
System Costs

- Contractor estimates for typical installation costs ranged:
 - “Minimum barrier” install: \$7k-\$9k
 - Typical 2-ton install: \$12k-\$14k
 - Higher-efficiency inverter systems: \$17k-\$25k
- Estimate that DFHPs are typically \$1.5k more expensive than a traditional air conditioning system



Adoption & Market Outlook

- 7 of 13 contractors include DFHPs bid for relevant customers automatically
- Contractors indicate that 2% to 25% of their Residential HVAC business are DFHPs
 - Installs ranging from 3 to 200+ in the past 3 years
- Future growth of the market for DFHPs depends on:
 - Available incentives
 - Customer education
 - The cost of electricity



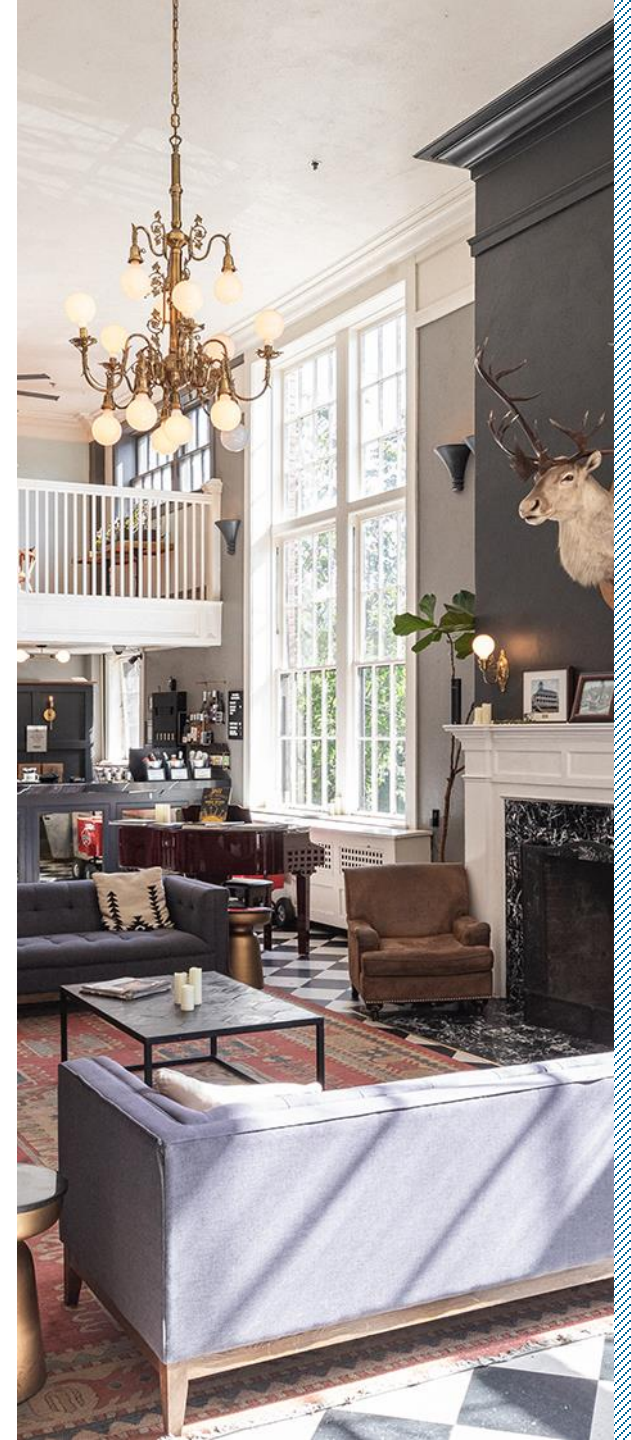
Contractor Selling Points & Barriers to Sale

Selling Points

1. Energy or cost savings
2. Added cooling
3. Available incentives

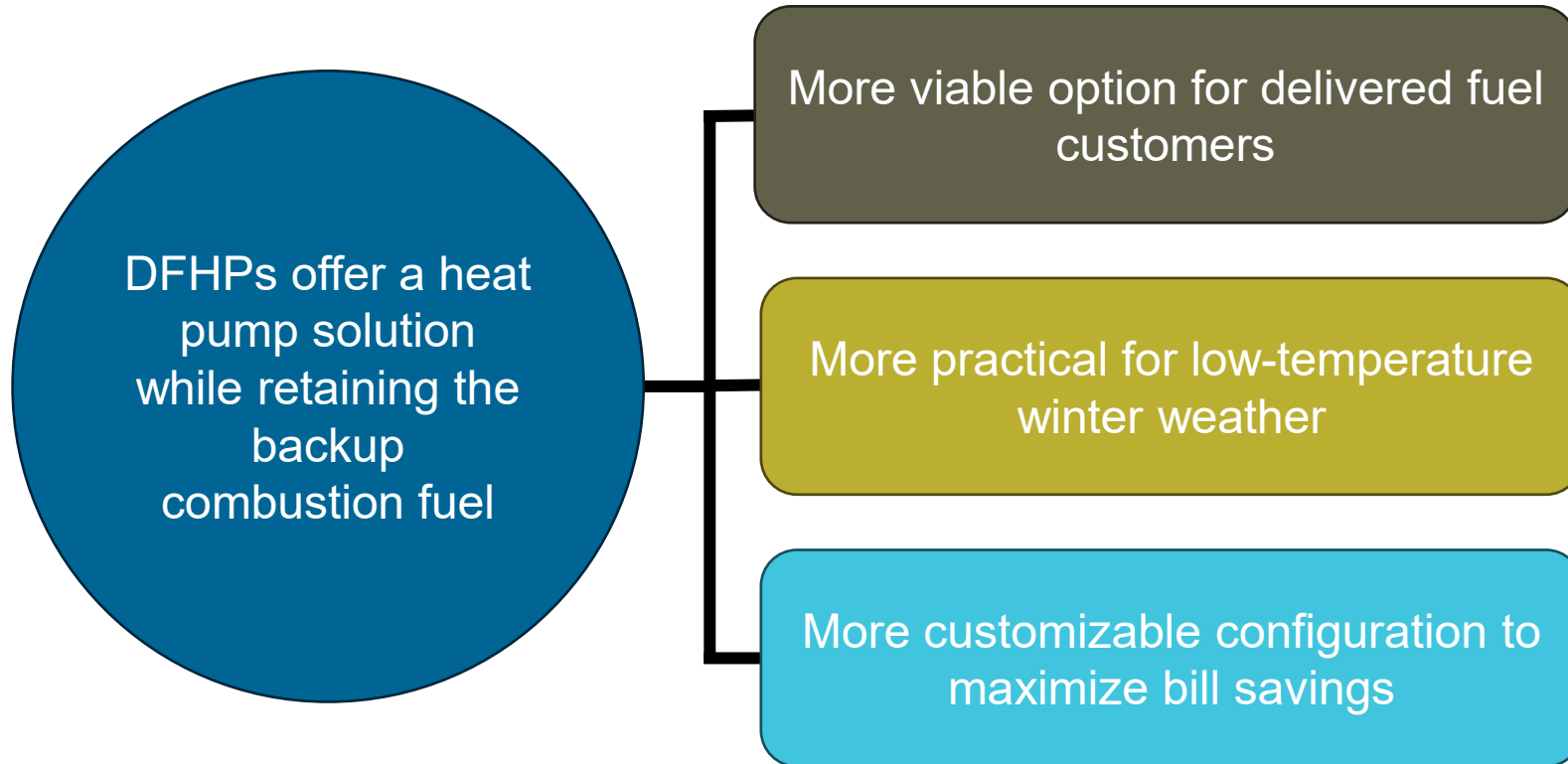
Barriers to Sale

1. Higher electric bills
2. Colder register air
3. Upfront costs



Regional Considerations: Southern Oregon

Contractors are excited about the market outlook



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Questions?

Andrew Shepard

andrew.shepard@energytrust.org

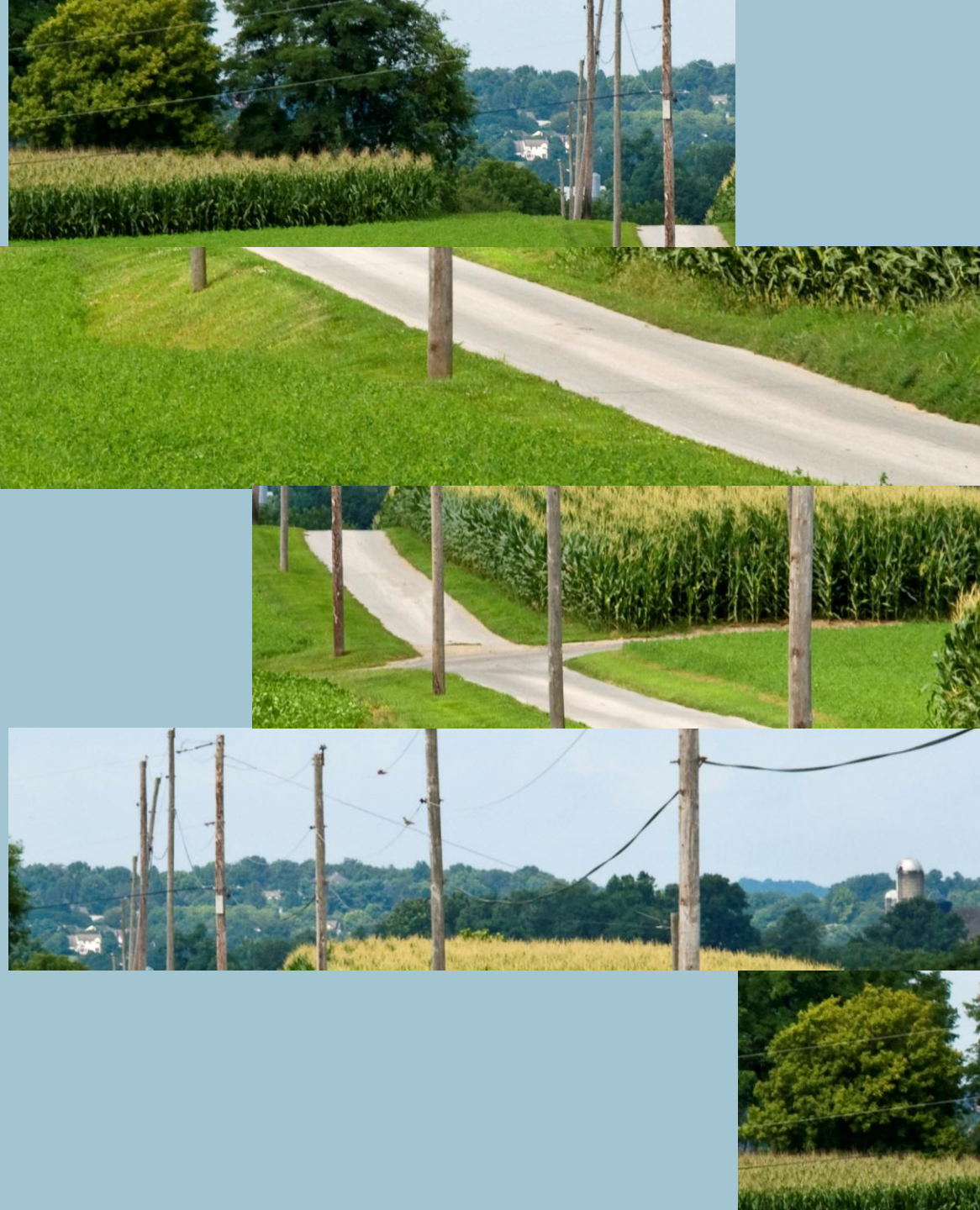
Cody Kleinsmith

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Avista 2026-2050 Electric and Gas Load Forecast – DRAFT RESULTS

April 15, 2026



CADMUS

AVISTA

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Agenda

Introduction

Load Forecast Methodology and Key Assumptions

Idaho Load Forecast (Electric and Gas)

Oregon Gas Load Forecast (Gas Only)

Washington Load Forecast (Electric and Gas)

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Introduction

Presentation Objectives

Meeting participants understand:

- Methodology and key data assumptions for developing Avista electric and gas load forecast
- Predicted electric and gas load trends through 2050 in Avista service territory in ID, OR, and WA
- Proportions of electric and gas load consumed by Avista's customer types
- End uses with highest loads
- Predicted building and transportation electrification trends, as well as impacts from distributed solar PV systems

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Methodology and Key Assumptions

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Draft End Use Forecast Overview



PERIOD

2026 to 2050

STATES



Idaho and Washington: electric and gas (all sectors, segments, end-uses)
Oregon: gas only



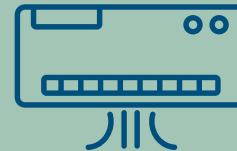
SECTORS

Residential, commercial, industrial buildings

Excludes: large industrial loads, energy efficiency, non-building loads, line losses

Includes: distributed solar, electric vehicles, gas transport customers

END USES



Aligned with Power Council 9th Plan

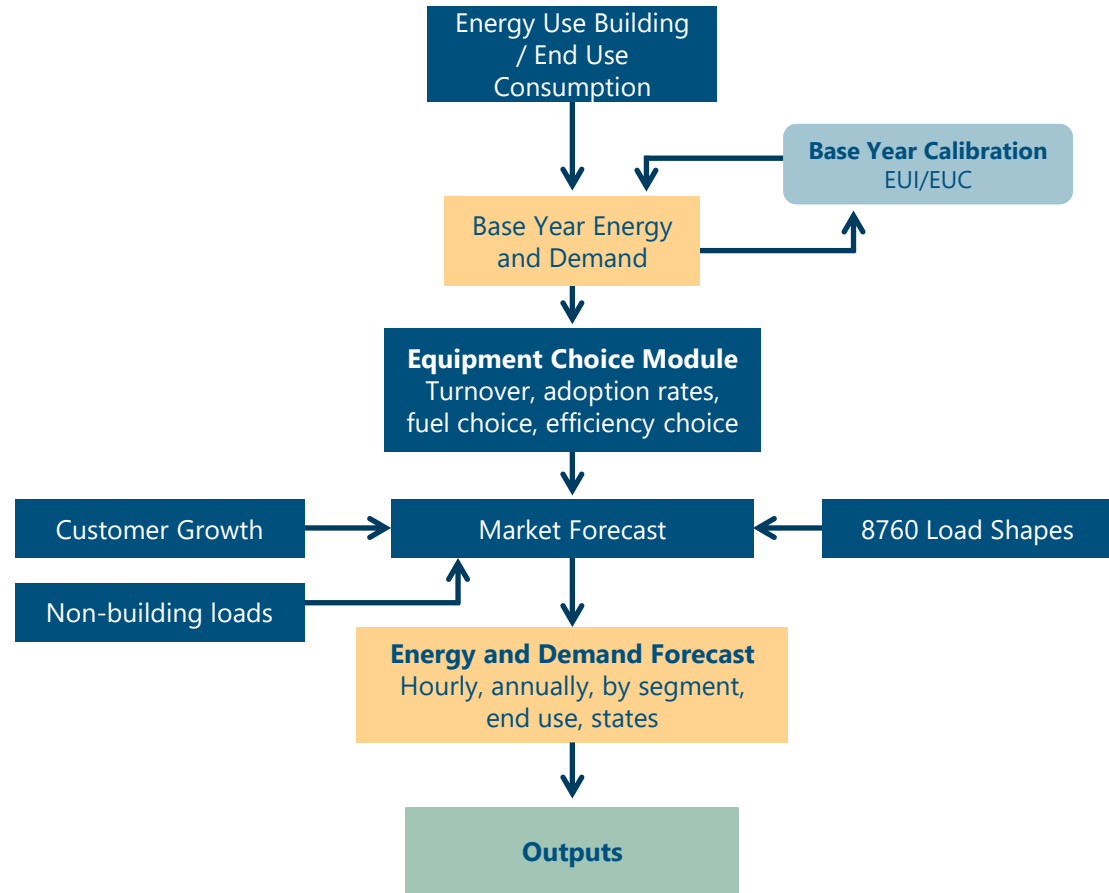
Results are draft pending final input. If you have additional comments, please email John.Lyons@avistacorp.com by April 29, 2026

End Use Forecast Model Overview







Modeling Approach

1. Estimate total Avista customers in each segment in base year
2. Estimate customer load by applying equipment saturations and energy consumptions to customer counts
3. Calibrate baseline load to actual Avista sales
4. Forecast annual energy consumption by accounting for equipment turnover, building stock changes, codes and standards, electrification, weather changes
5. Estimate annual monthly peak impacts by applying load shapes to energy consumption estimates

Note: EV and Solar forecast provided by Avista



Key Input Data and Assumptions

	Weather Forecast	Avista trend in Heating Degree and Cooling Degree days though 2050. Trends show decreasing heating and increasing cooling needs
	Codes and Standards	All Federal equipment standards with final rulings (Department of Energy). Washington building codes for new construction fuel switching
	Building New Construction and Demolition Rate	New construction rate provided by Avista in account forecast. Demolition rate based on building permit data (City of Spokane)
	Equipment Characteristics	Electric characteristics aligned with Power Council 9 th Plan analysis. Gas characteristics primarily inferred from 9 th Plan or aligned with Regional Technical Forum. Additional secondary sources as needed.
	Peak Definition	Electric: Peak hour load in each month Gas: Peak day load in each month
	Hourly Load Shapes	NLR ResStock and ComStock, 9 th Power Plan, miscellaneous sources

Segmentation

	Sector	Commercial, industrial, and residential customer loads and accounts from Avista rate classes
	Non-residential and Residential Building Types	Non-residential business / building types: Address data-queries using Google Places API, Google Gemini and Microsoft Copilot (with human QC) Residential building types: American Community Survey classifications
	Industrial Facility Type	Industrial facility types: Address data-queries
	Equipment / End Use Saturation	NEEA Residential and Commercial Building Stock Assessments, Avista Program Accomplishments, Energy Information Administration Manufacturing Energy Consumption Survey
	Residential Customer Class	Oregon and Idaho: income-qualification using median income from American Community Survey Washington: geography-based using census tracts identified as Vulnerable Populations

Electrification Adoption Modeling Approach



Customer Decision Modeling



Electrification Adoption Assumption

	Idaho	Oregon	Washington
Commercial Building Codes	No electric new construction codes	No electric new construction codes	All end uses electric starting 2026 – 90%* compliance phased in annually
Residential Building Codes	No electric new construction codes	No electric new construction codes	Space & water heating electric starting 2026 – 90%* compliance phased in annually
Electric / Gas Rates ⁺ :	Commercial: \$0.10/kWh \$0.95/therm Residential: \$0.12/kWh \$1.22/therm	\$0.09/kWh \$1.52/therm \$0.14/kWh \$1.11/therm	\$0.14/kWh \$1.27/therm \$0.14/kWh \$1.57/therm

⁺Rates increase annually. Increase varies by state / fuel

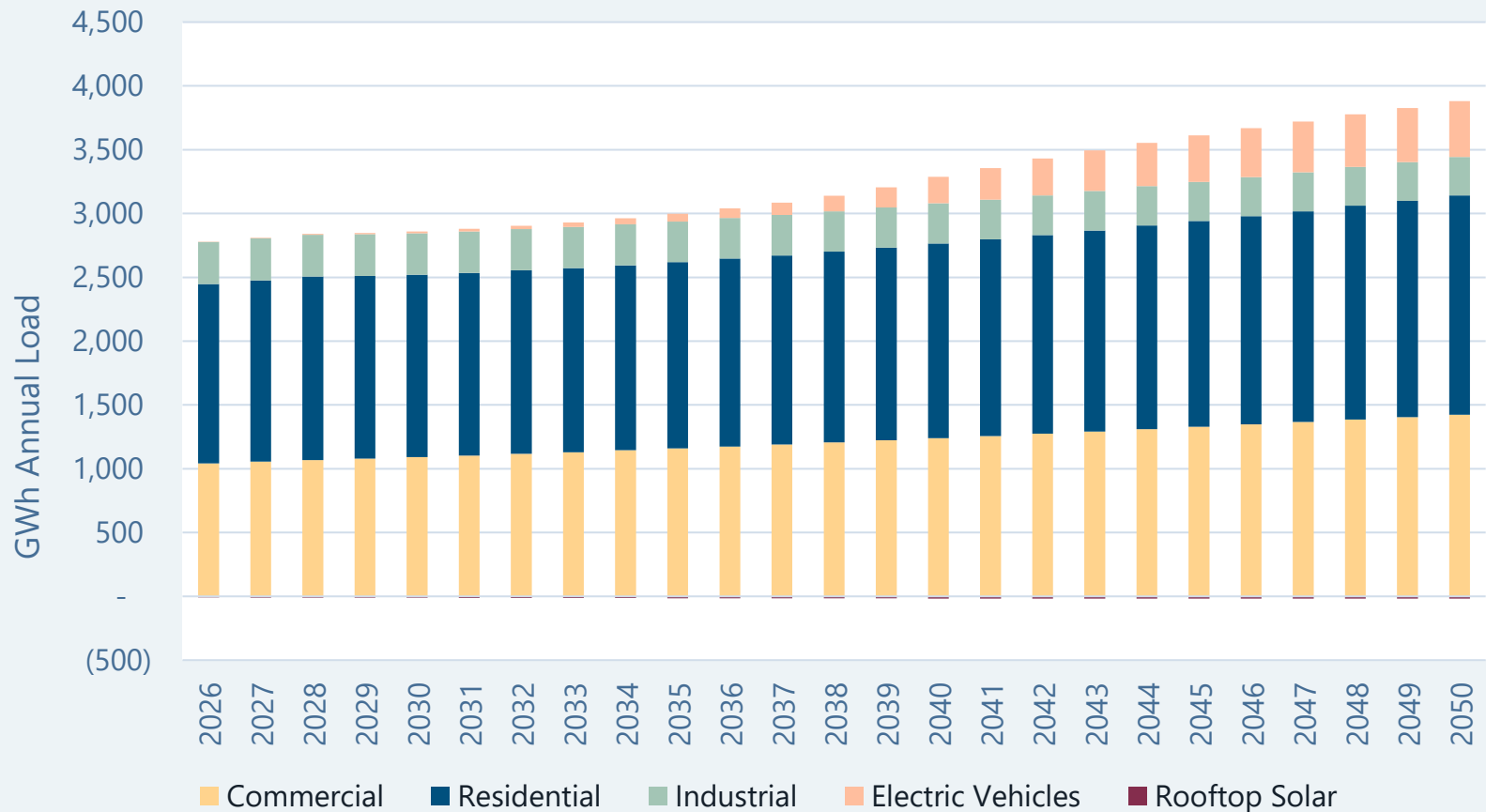
*Starting compliance rate for water heaters = 90%

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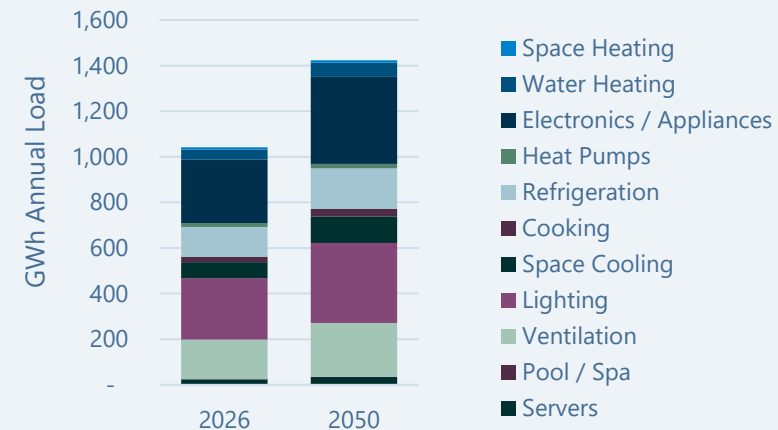


Idaho Load Forecast

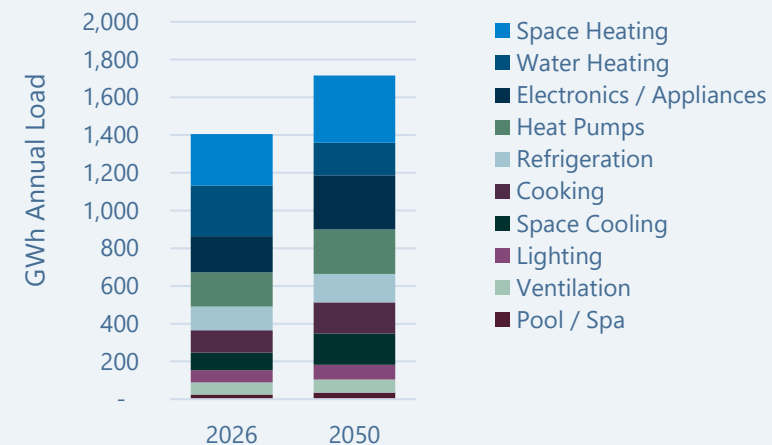
Idaho Electric Energy Load Forecast



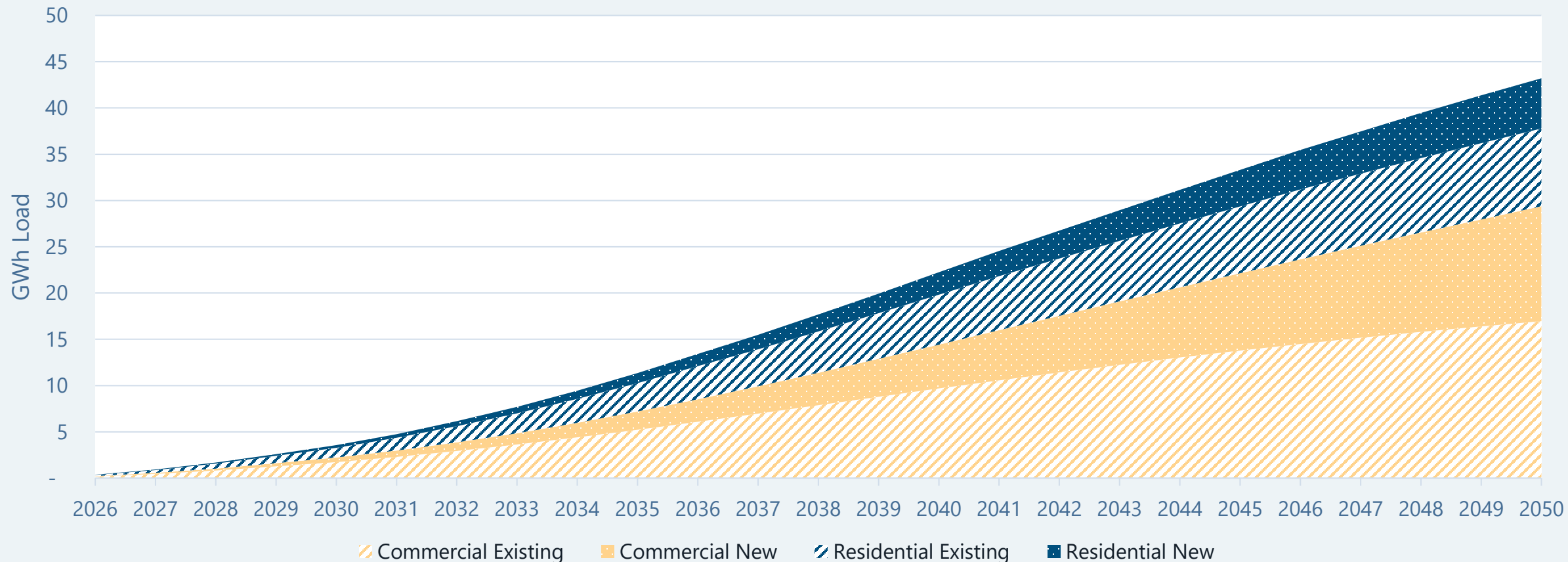
Commercial End Uses



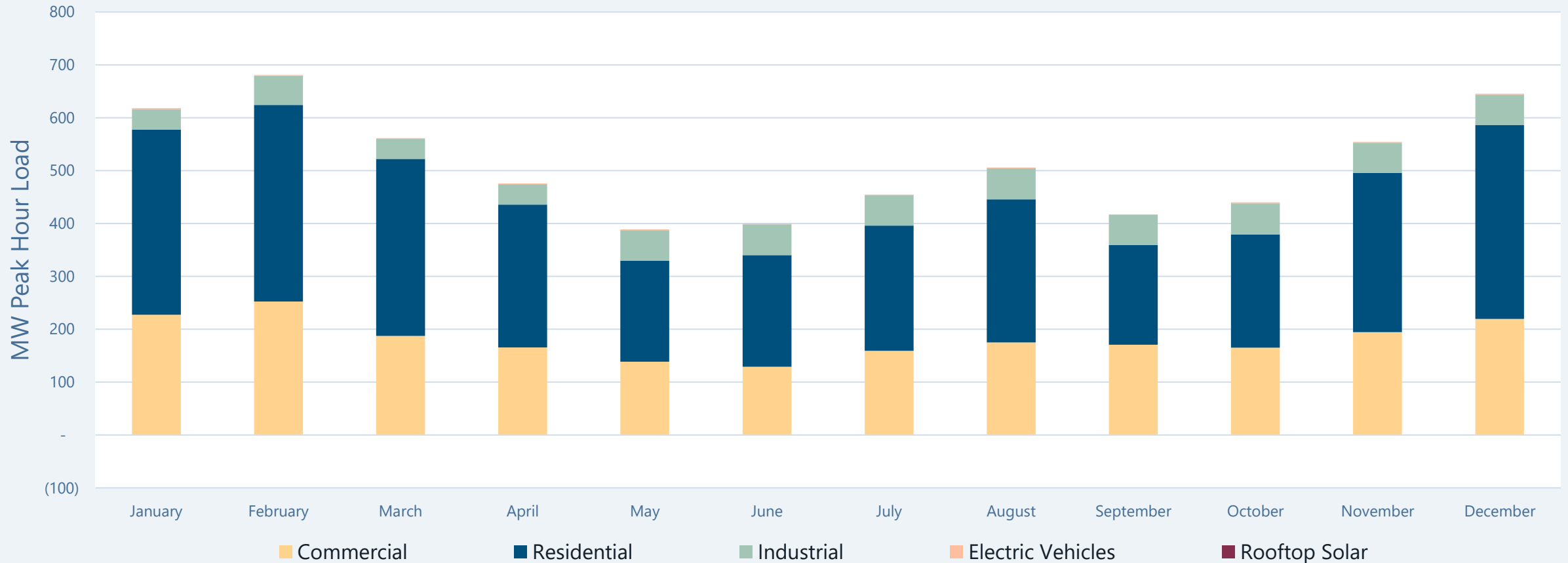
Residential End Uses



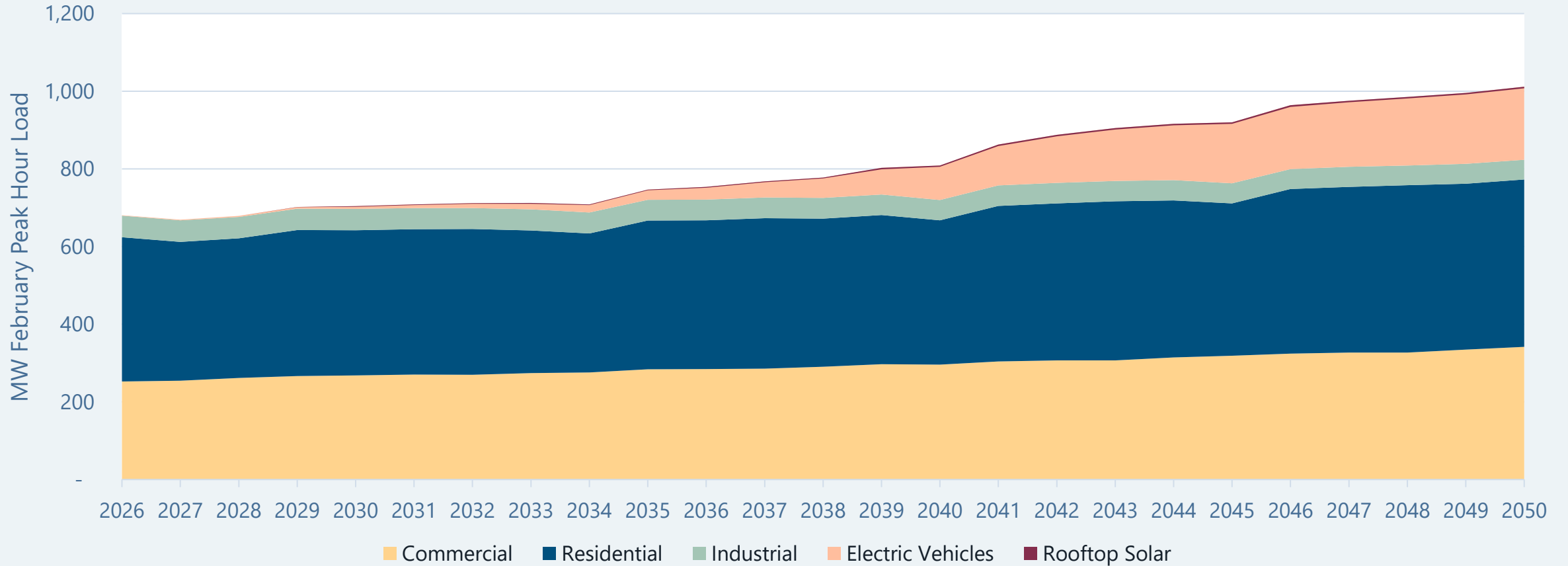
Idaho Electric Energy Load Forecast – Building Electrification



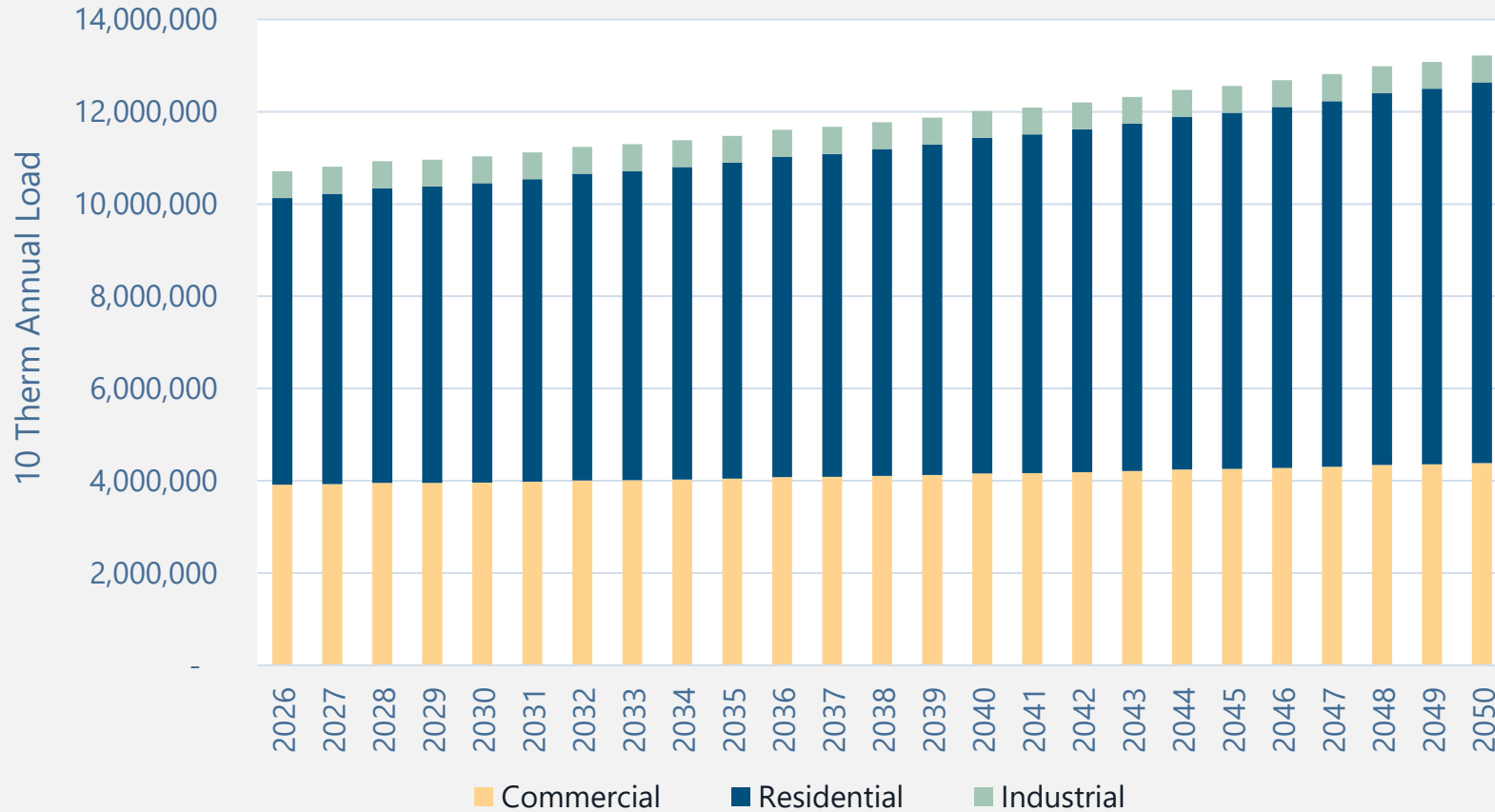
Idaho 2026 Monthly Electric Peak Load Forecast



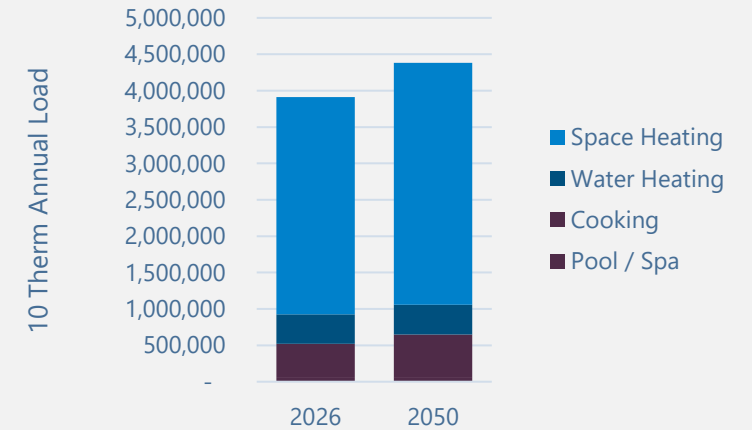
Idaho February Monthly Electric Peak Load Forecast



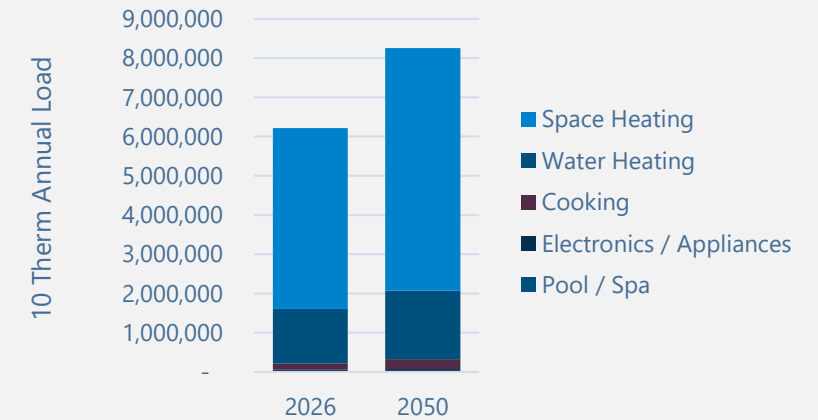
Idaho Gas Energy Load Forecast



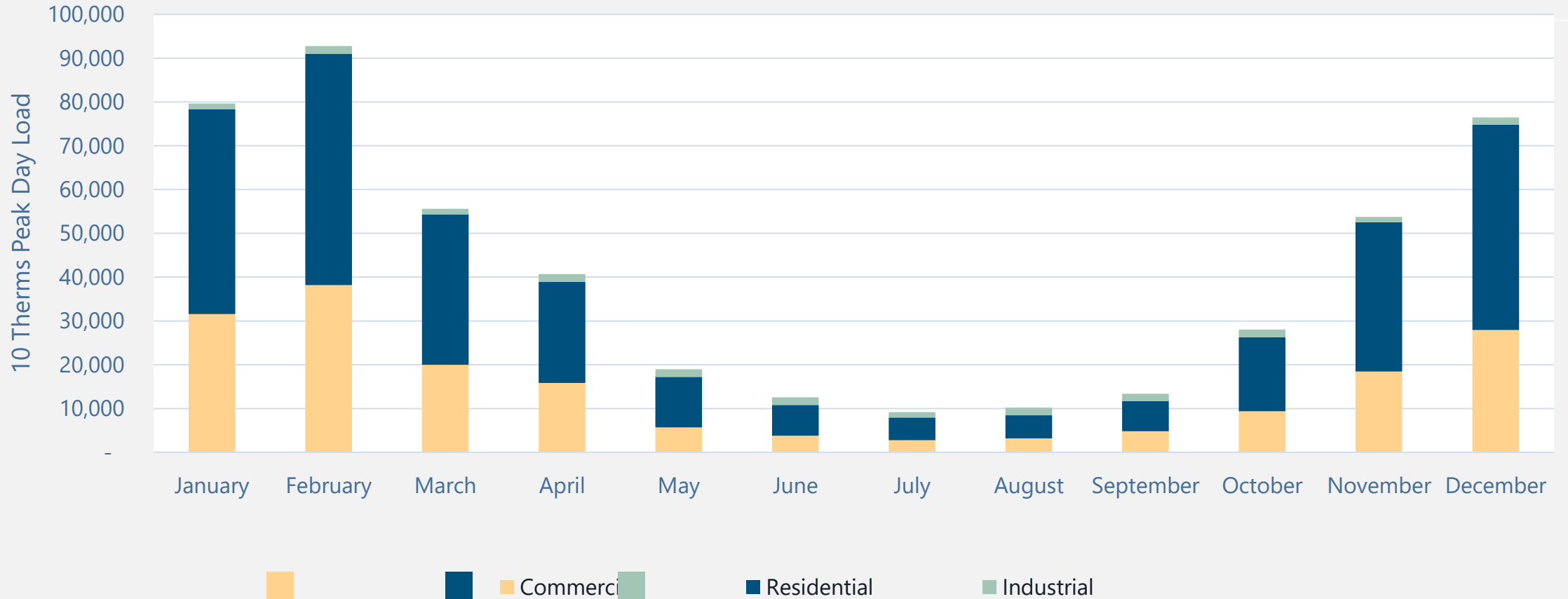
Commercial End Uses



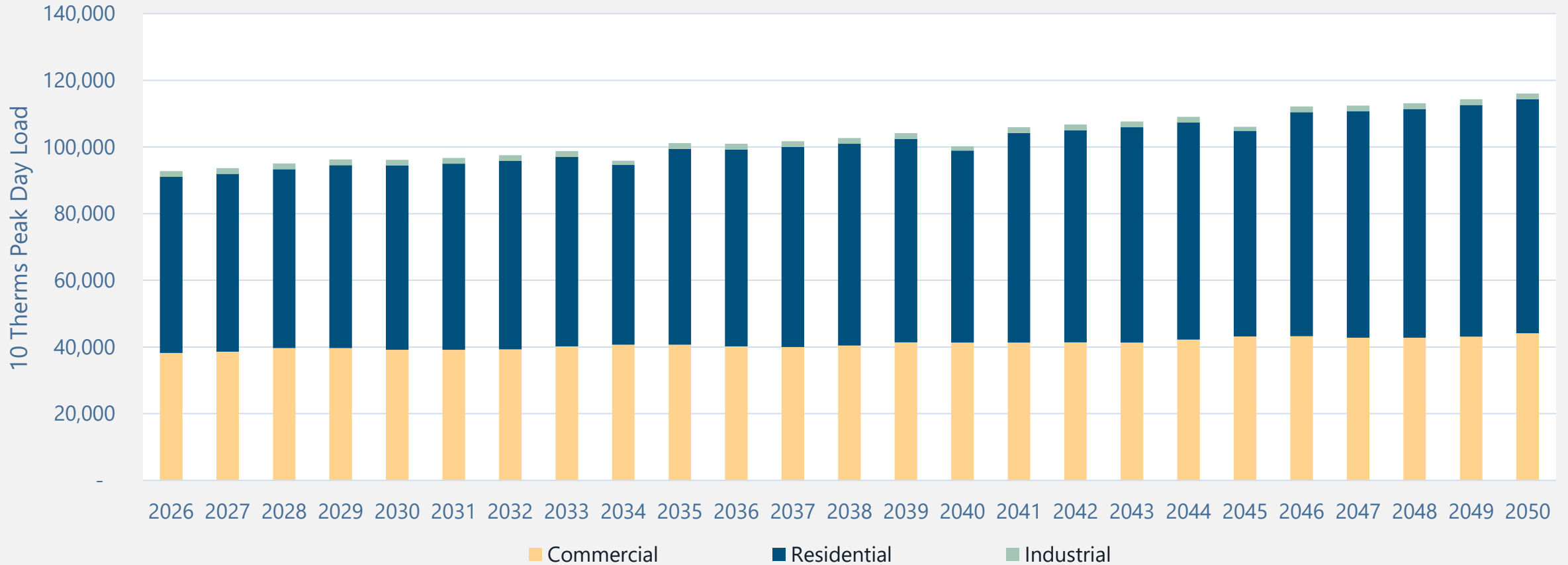
Residential End Uses



Idaho 2026 Monthly Gas Peak Load Forecast



Idaho February Monthly Gas Peak Load Forecast

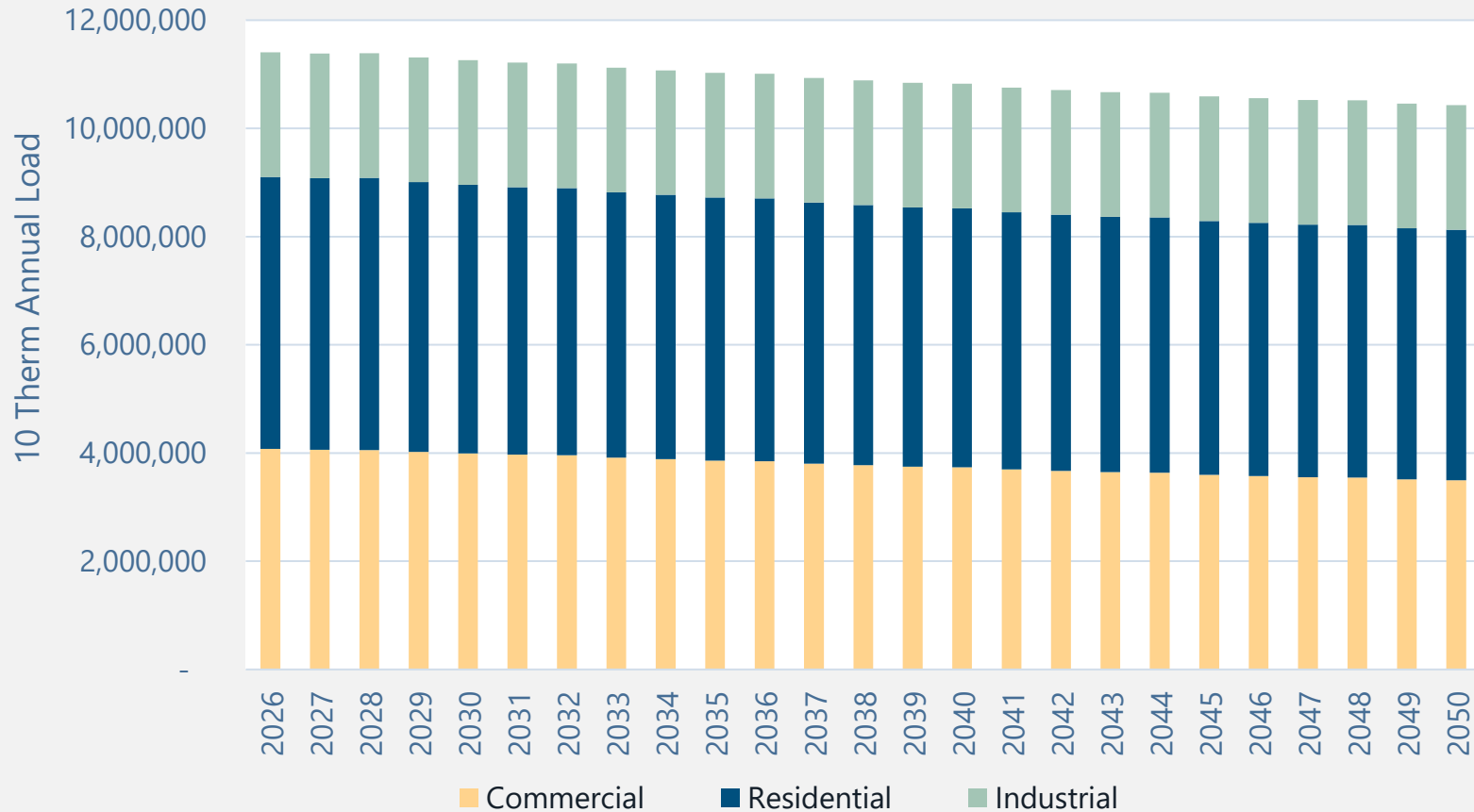


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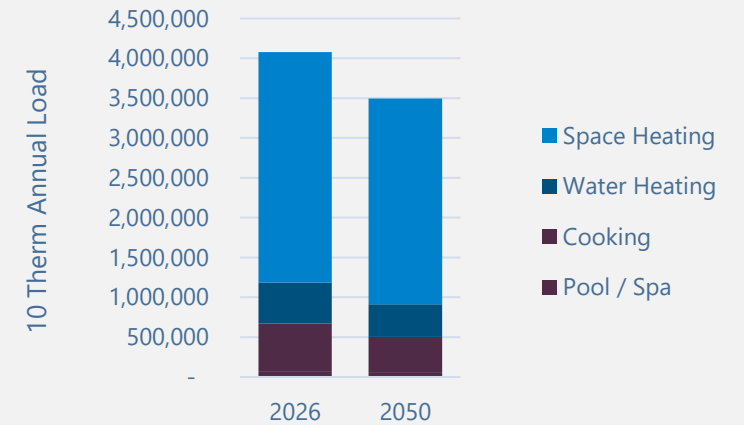


Oregon Load Forecast

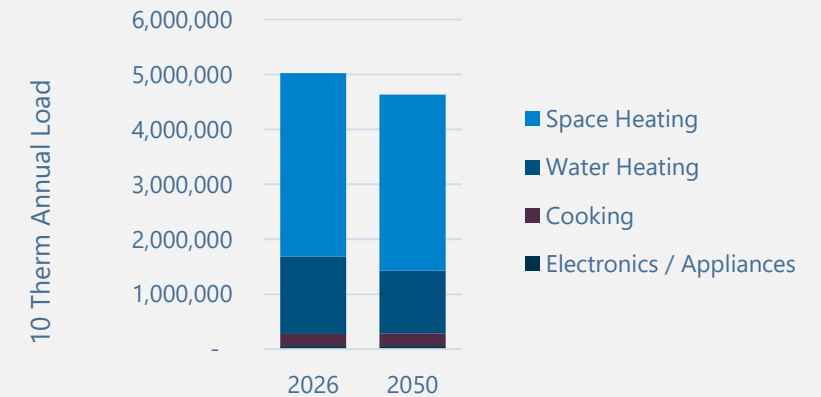
Oregon Gas Energy Load Forecast



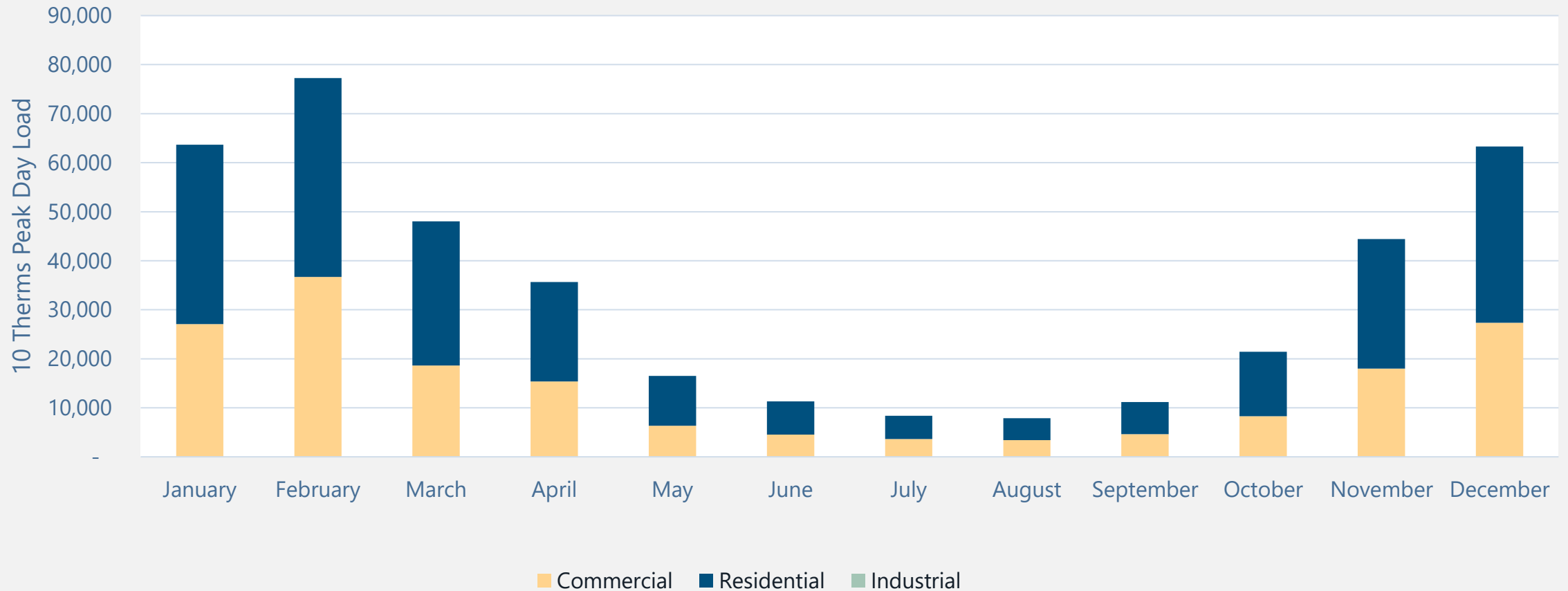
Commercial End Uses



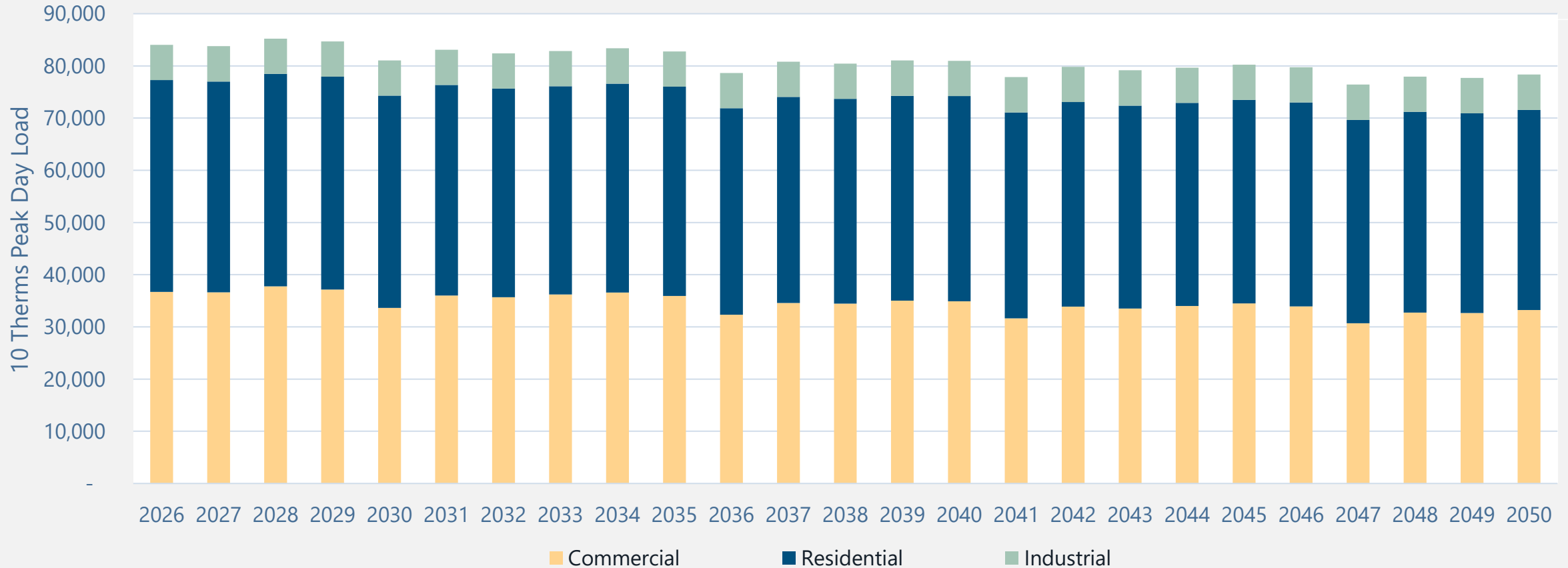
Residential End Uses



Oregon 2026 Monthly Gas Peak Load Forecast



Oregon February Monthly Gas Peak Load Forecast

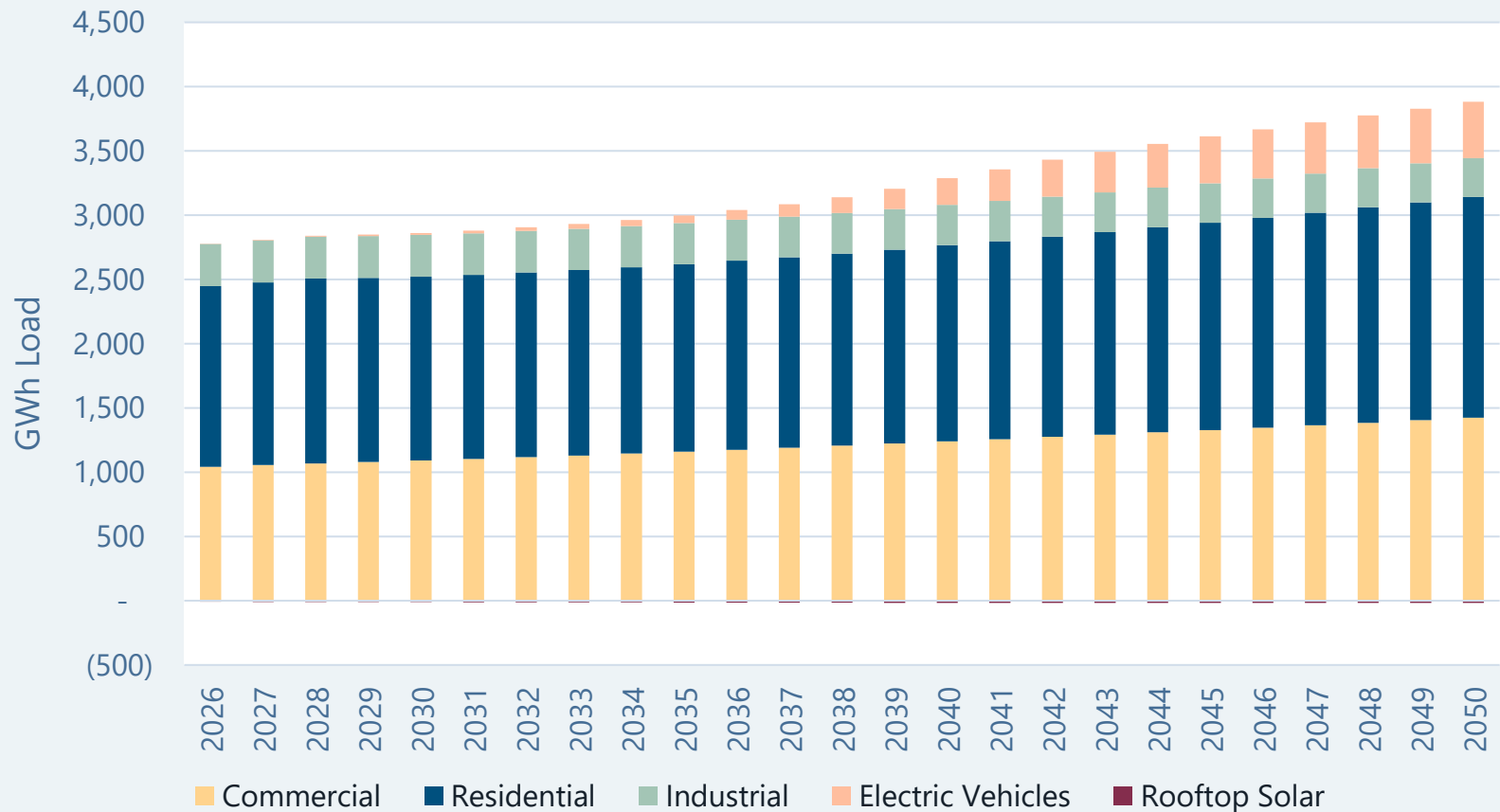


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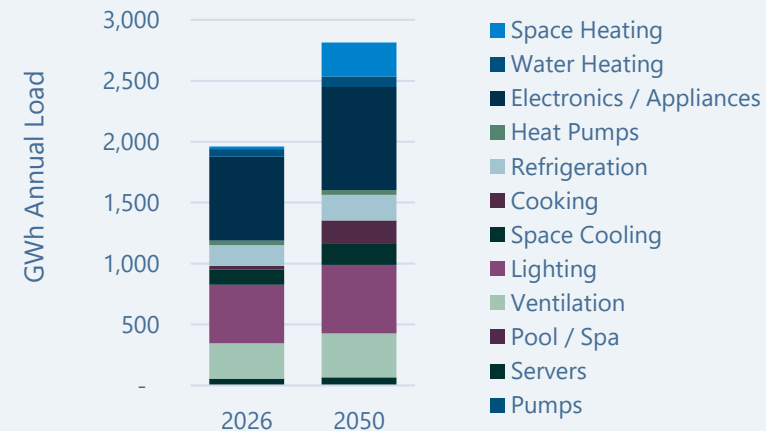


Washington Load Forecast

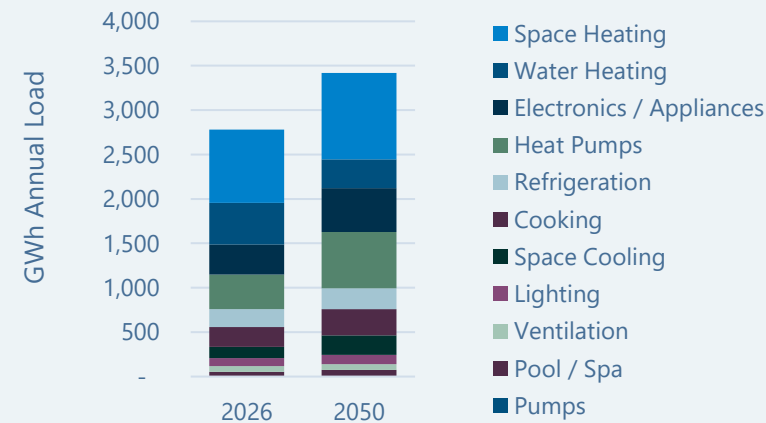
Washington Electric Energy Load Forecast



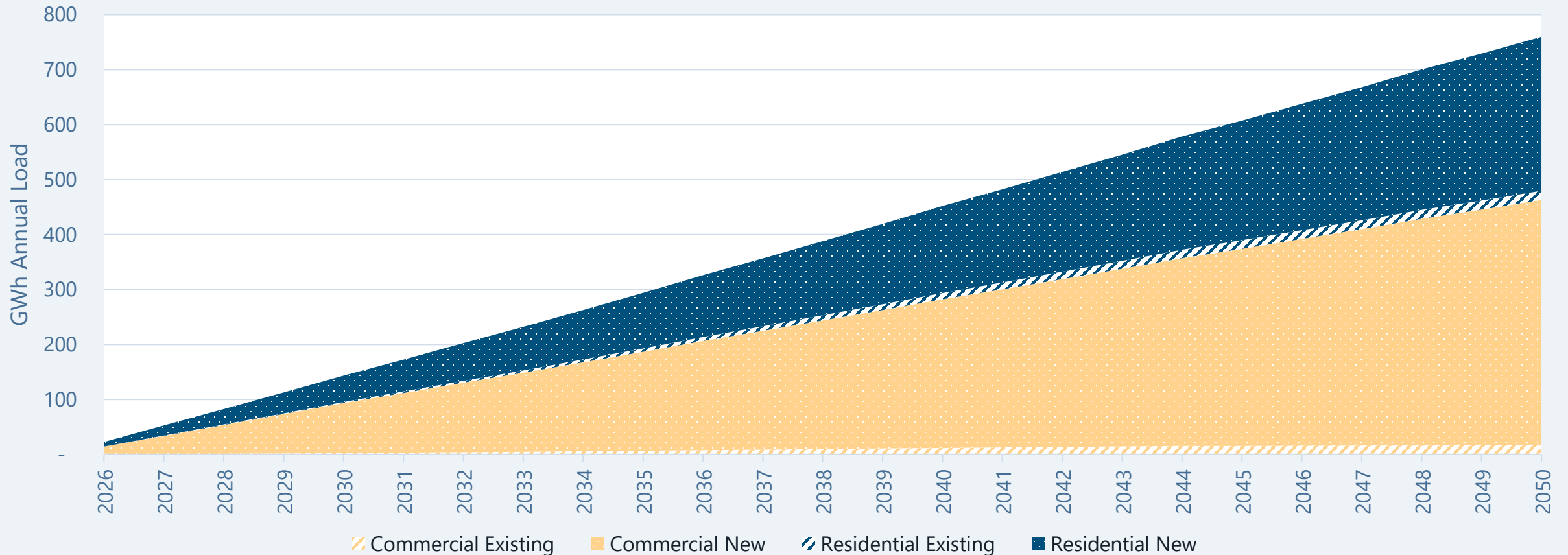
Commercial End Uses



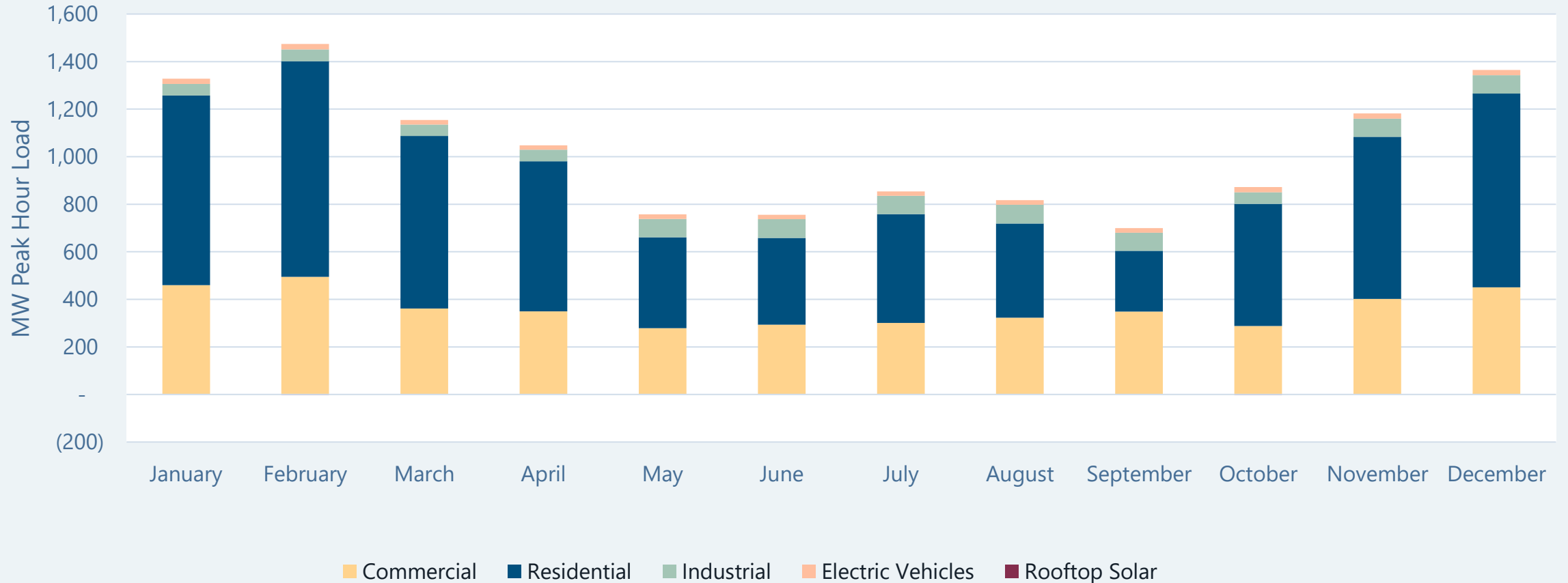
Residential End Uses



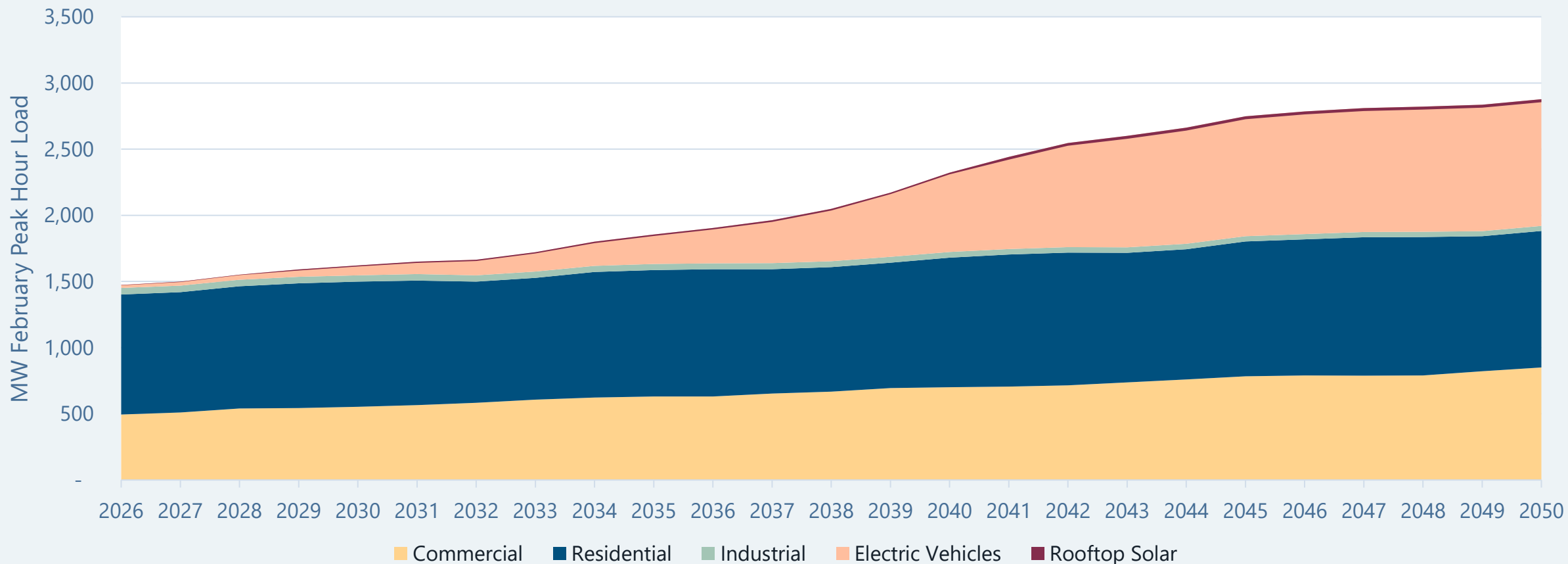
Washington Electric Energy Load Forecast – Building Electrification



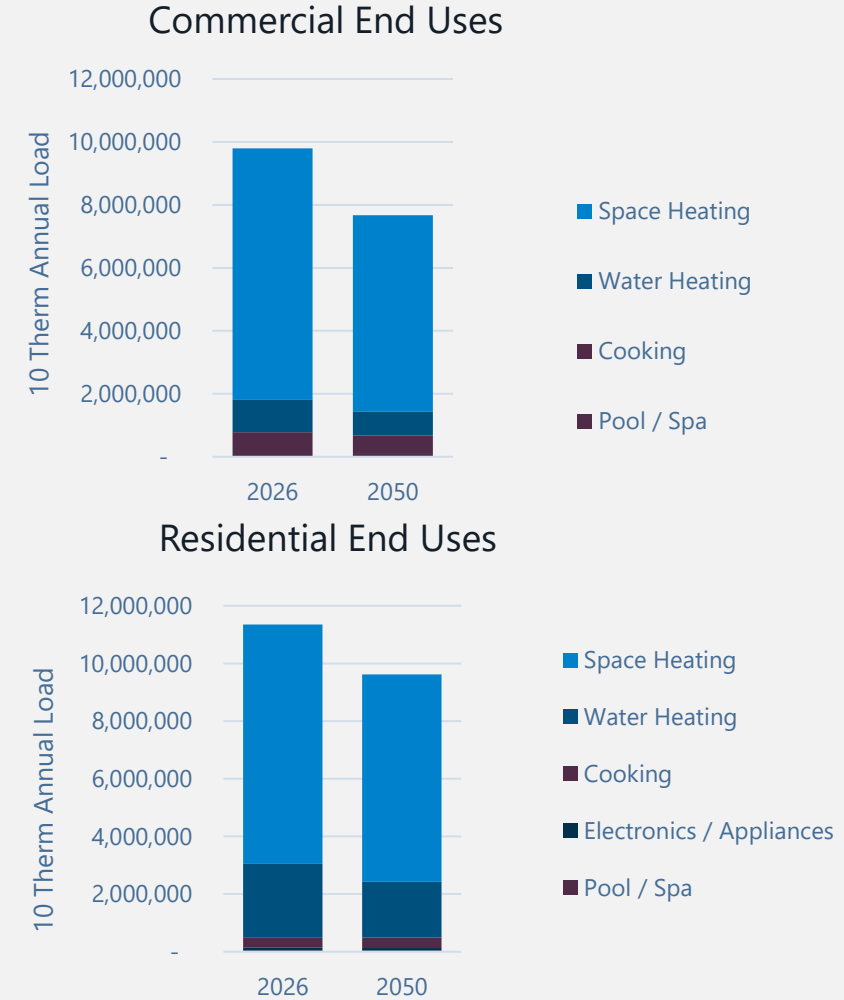
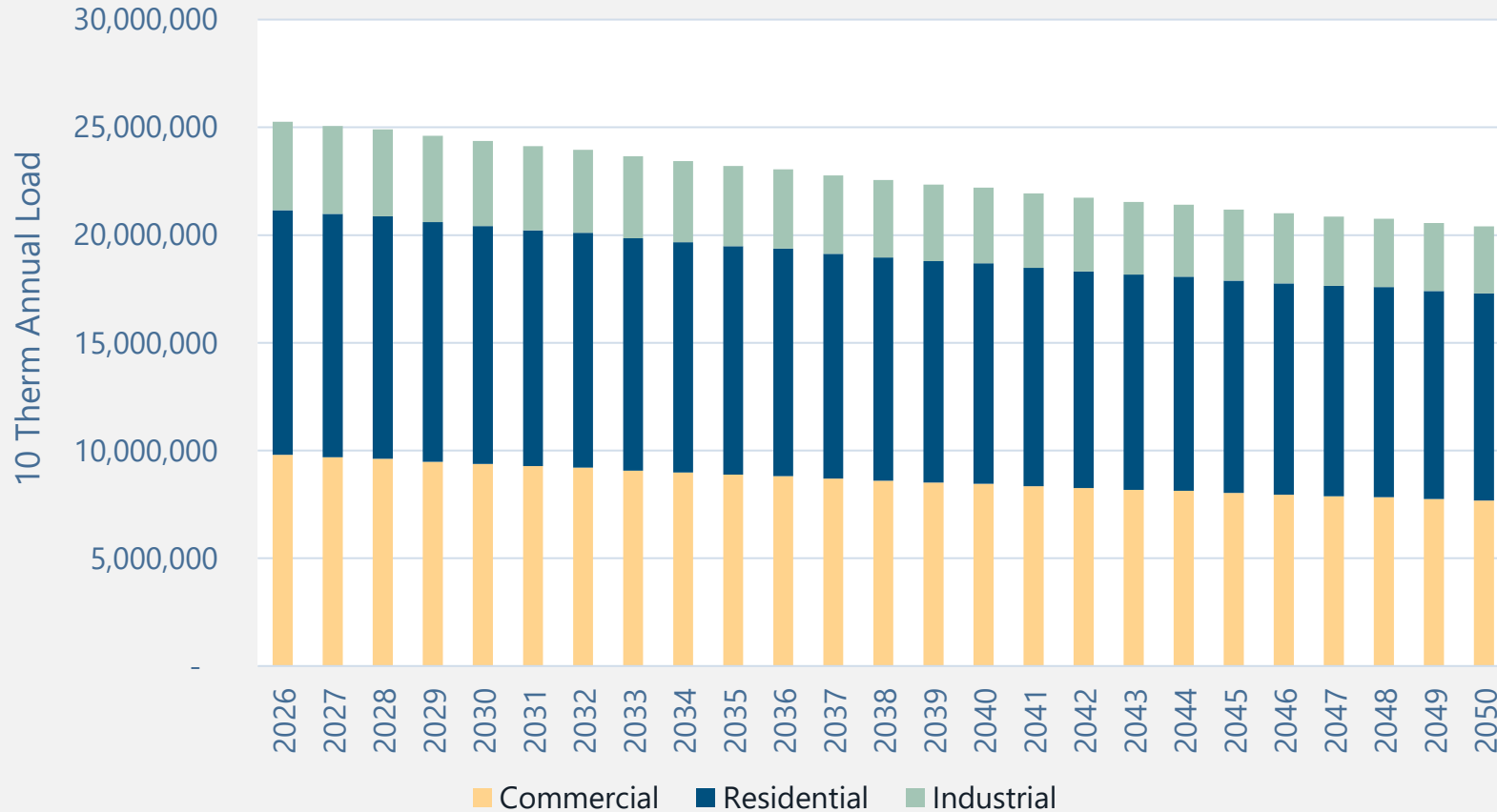
Washington 2026 Monthly Electric Peak Load Forecast



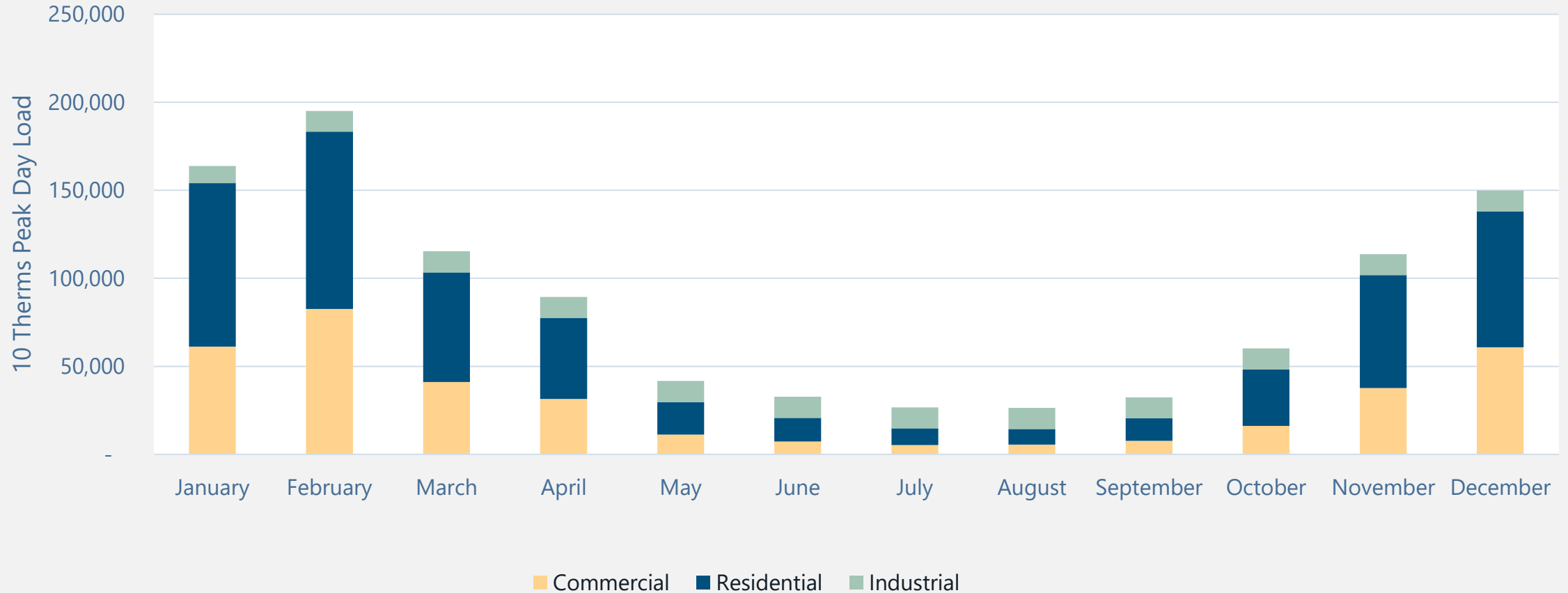
Washington February Monthly Electric Peak Load Forecast



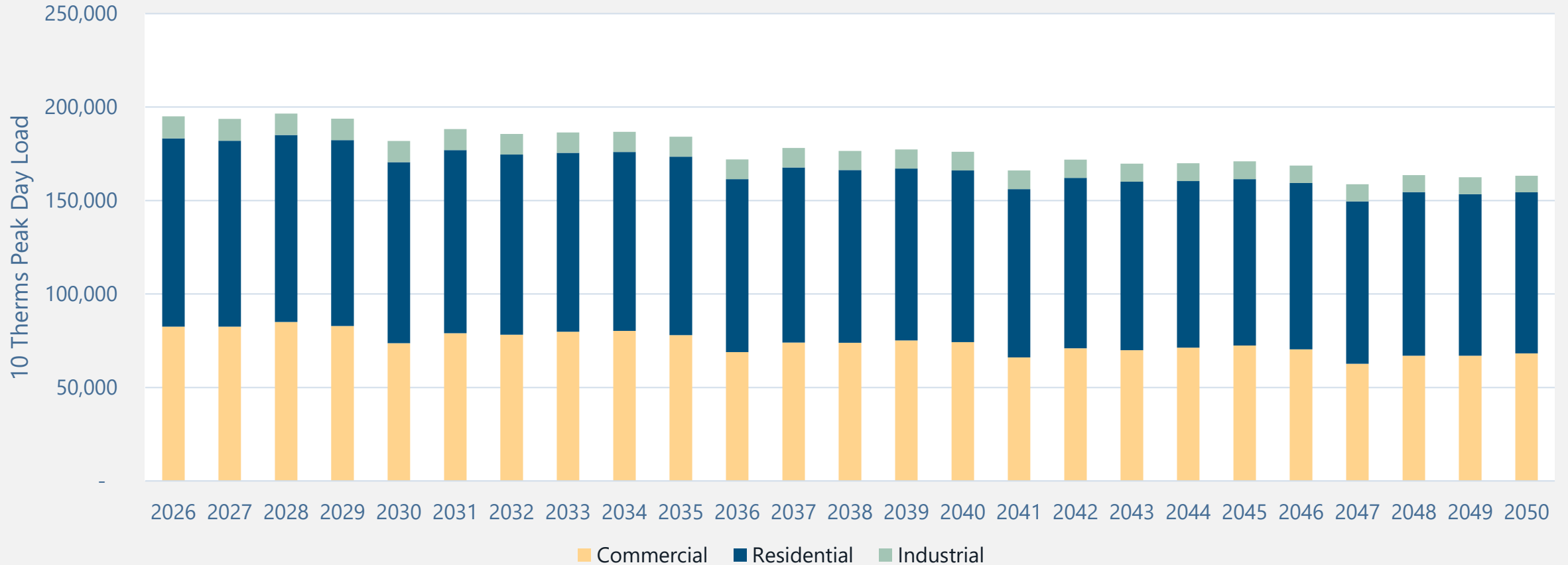
Washington Gas Energy Load Forecast



Washington 2026 Monthly Gas Peak Load Forecast



Washington February Monthly Gas Peak Load Forecast



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Thank You

Next Meeting: April 20

Draft Energy Efficiency
Potential Estimates

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The AVISTA logo features the word "AVISTA" in a bold, white, sans-serif font. The letter "A" is stylized with a white grid pattern. The logo is set against a dark blue rectangular background.The CADMUS logo consists of the word "CADMUS" in a bold, blue, sans-serif font. To the right of the text is a vertical blue bar.