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

Topic	State	Audience
• Introduction and Questions from TAC 6 ○ 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
• Long Run Load Forecast	All	E&G
• ETO Energy Efficiency Update	OR	Gas

Microsoft Teams meeting

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

Meeting ID: 222 270 686 385 05

Passcode: 4KL9Ld3w

Need help? | System reference

Dial in by phone

+1 509-931-1514,,577336804# United States, Spokane

Find a local number

Phone conference ID: 577 336 804#

For organizers: Meeting options | Reset dial-in PIN

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
- Long Run Load Forecast
- ETO Energy Efficiency Update

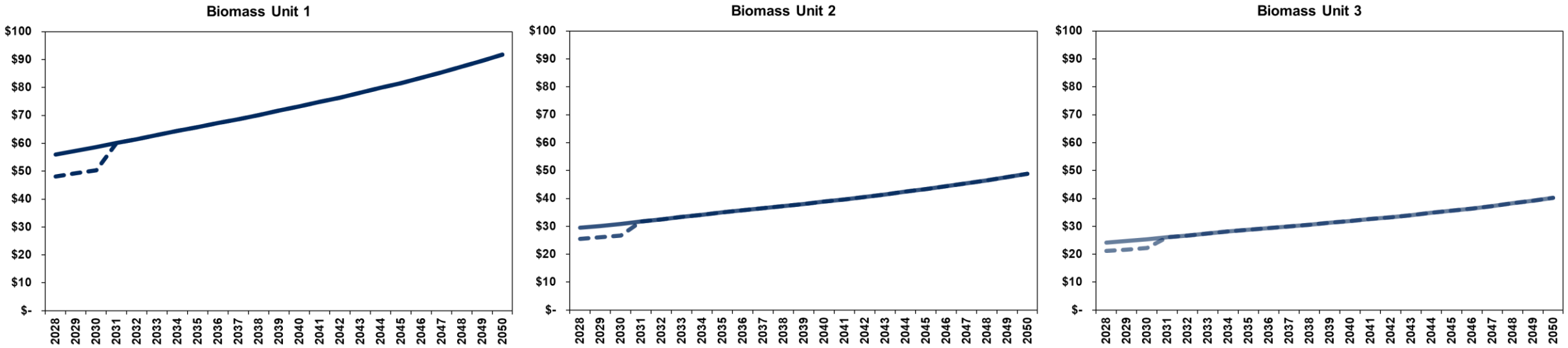
Meeting Guidelines

- 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

https://www.irs.gov/pub/irs-access/p6045_accessible.pdf

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

Stochastic Wholesale E&G Price Forecast

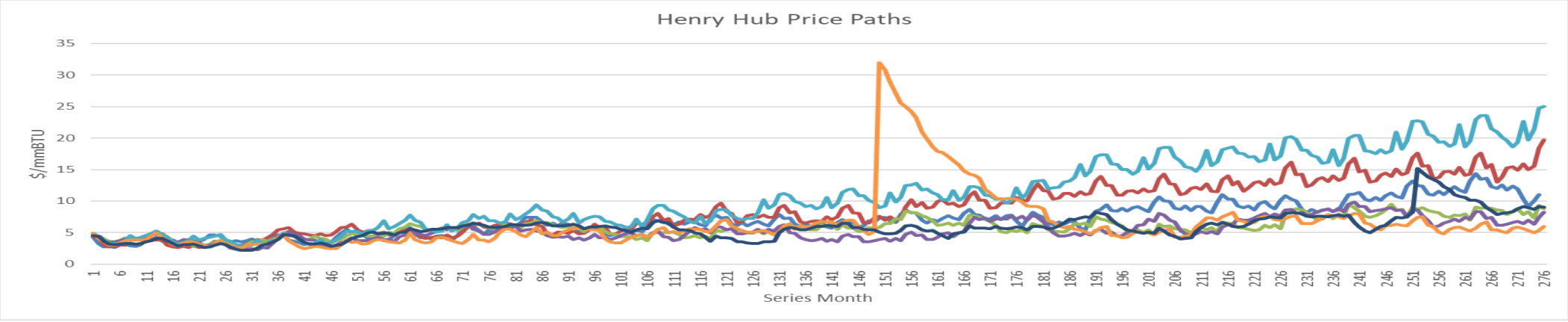
TAC 7 – April 15, 2026

Robert Hughes Resource Planning Analyst

Stochastic Natural Gas Price Methodology

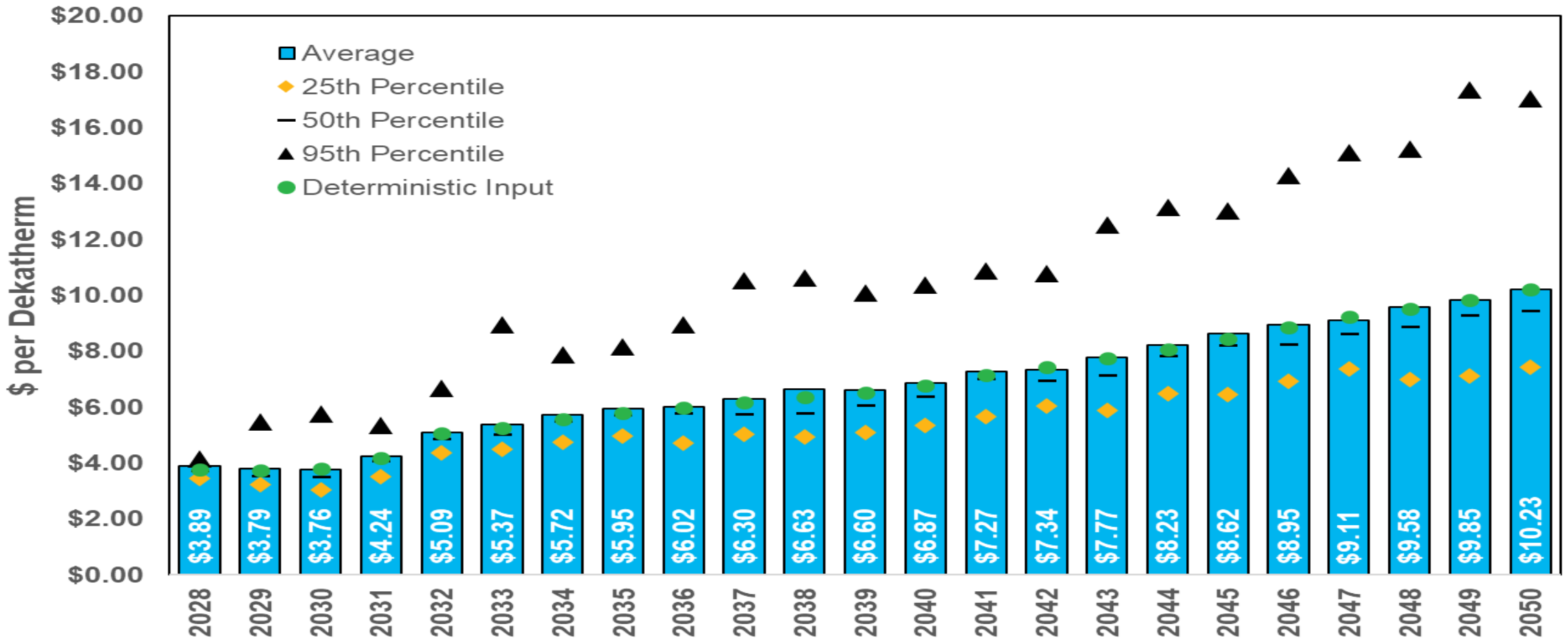
Avista uses a baseline of monthly natural gas prices and varying prices based on a distribution for the 300 stochastic forecasts. Starting with Henry hub, this baseline is a blend of market forward prices, consultant forecasts, and Energy Information Administration's (EIA) forecast.

- *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.*



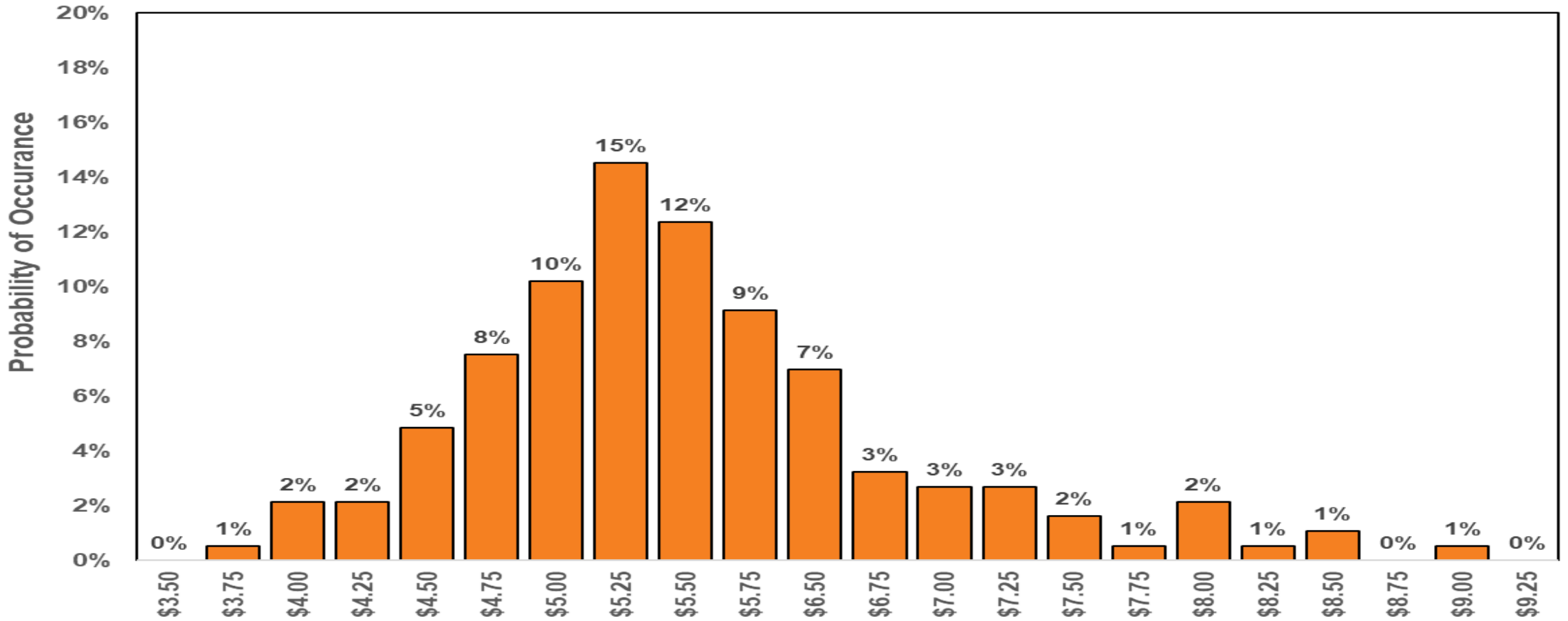
Draft forecast

Henry Hub Natural Gas Price Forecast



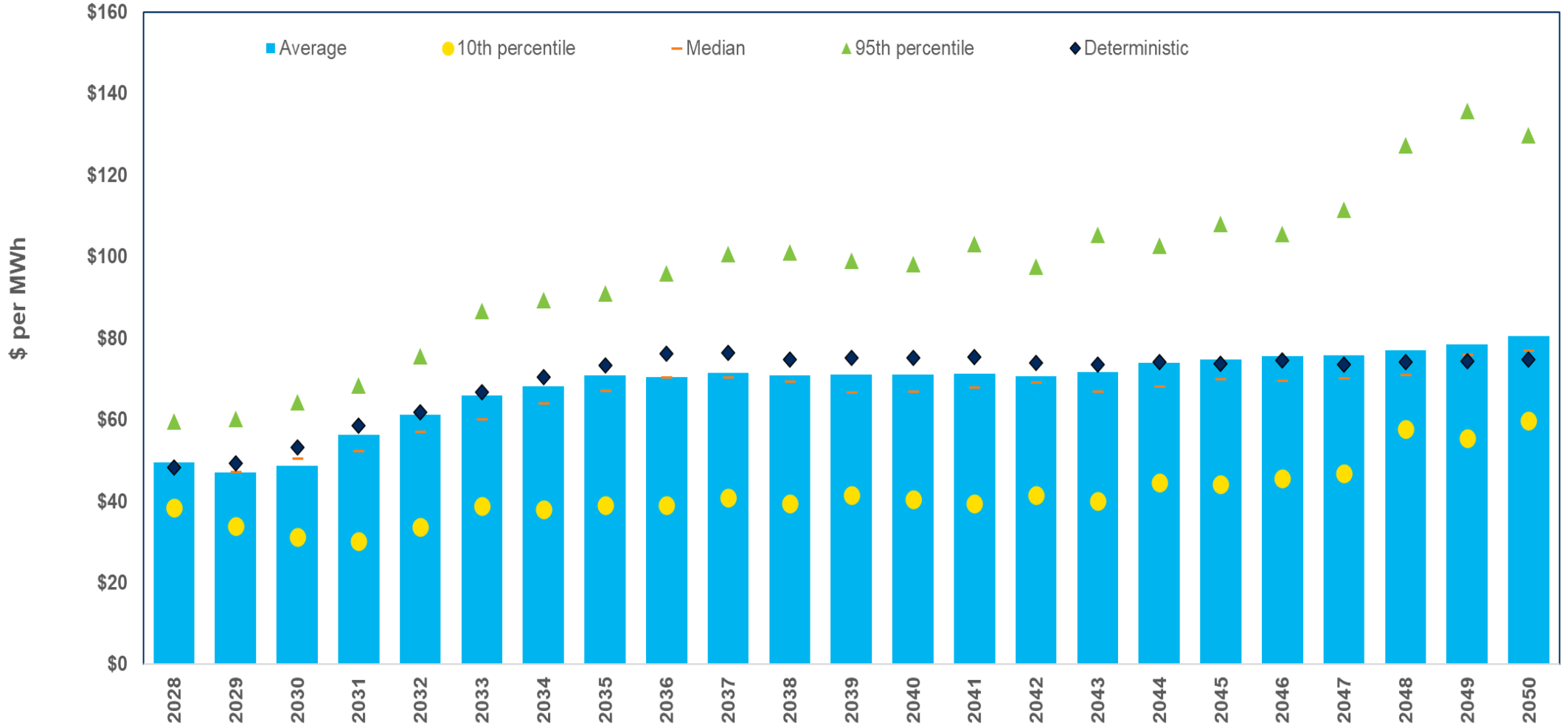
Draft forecast

Henry Hub Nominal 20 Year Levelized Price Distribution



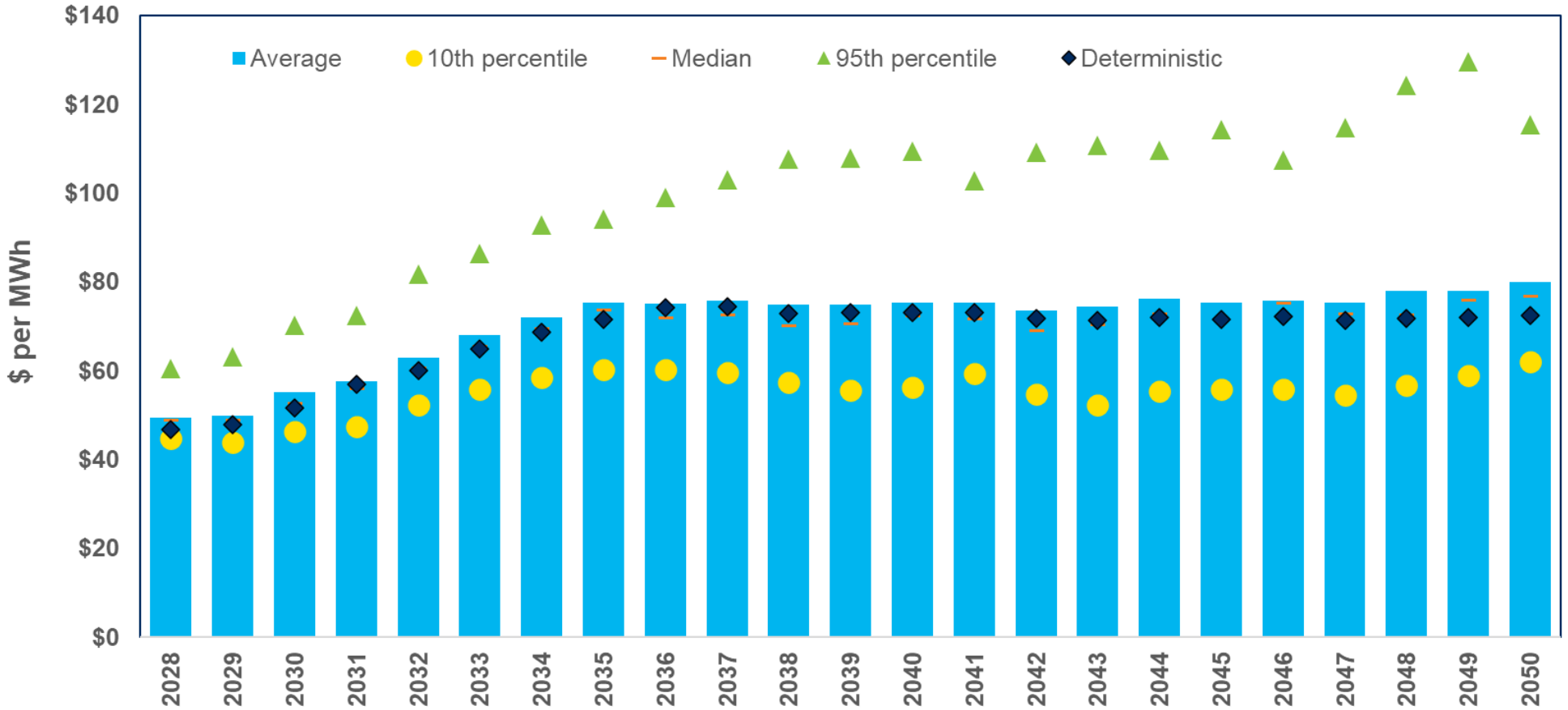
Draft forecast

Mid Columbia Electric Price Forecast Range with CCA



Draft forecast

Mid Columbia Electric Price Forecast Range W/O CCA



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

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.

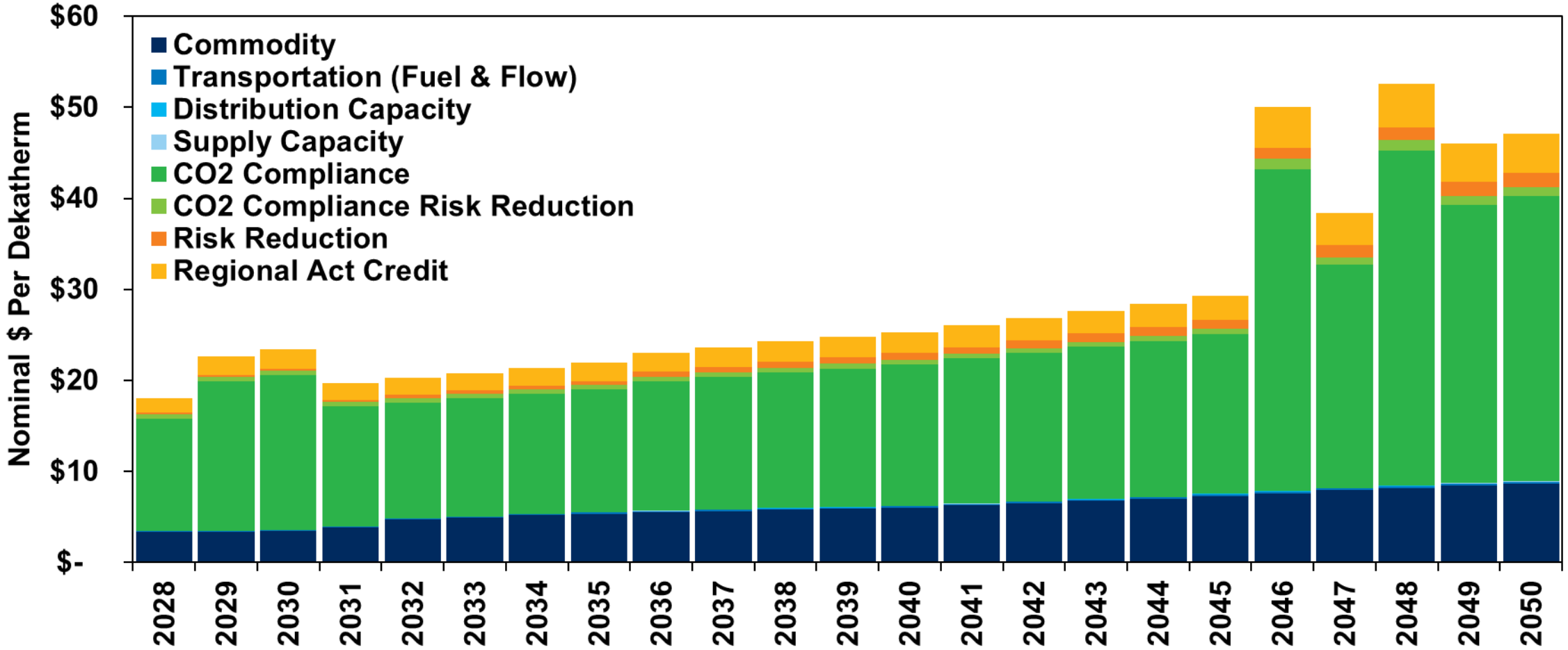
https://secure.sos.state.or.us/oard/view.action?ruleNumber=860-030-0007

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
Supply Capacity	Costs associated with supply capacity expansion
Distribution Capacity	Costs associated with distribution system reinforcements
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

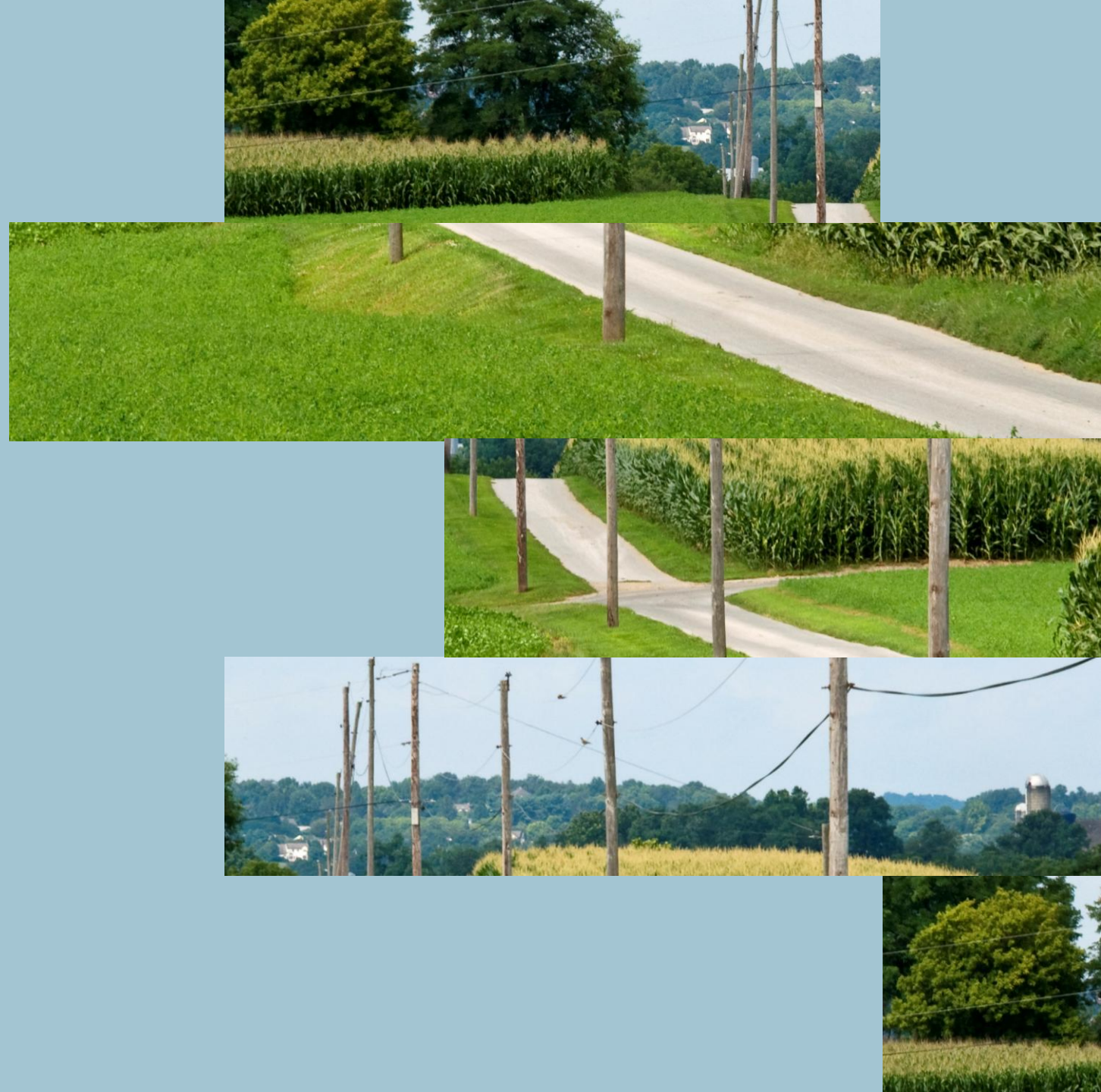
https://apps.puc.state.or.us/orders/2025ords/25-500.pdf (December 9, 2025)

DRAFT Avoided Costs



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

April 15, 2026



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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)

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

Methodology and Key Assumptions

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, transport customers

END USES

Aligned with Power Council 9th Plan

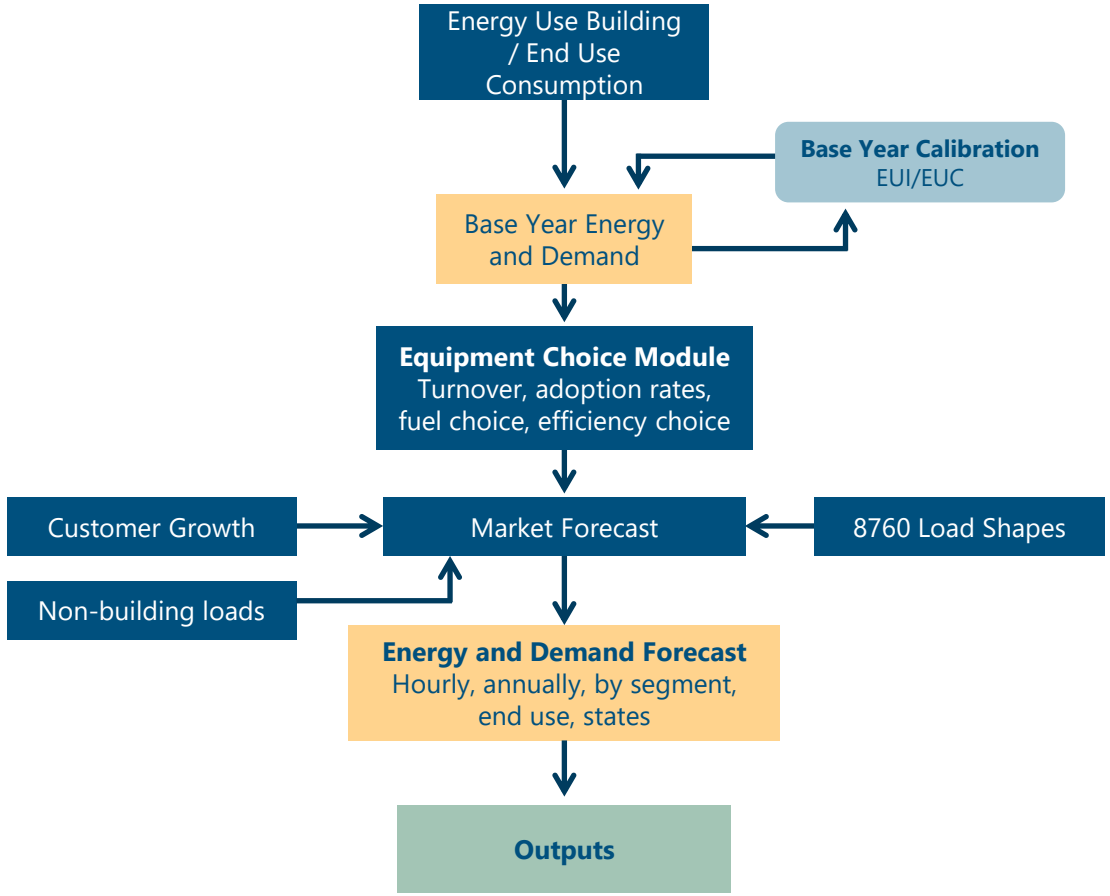
Results are draft pending final input. If you have additional comments, please email John.Lyons@avistacorp.com by April 29, 2026

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 fuels
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 9th Plan analysis. Gas characteristics primarily inferred from 9th 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, 9th Power Plan, Miscellaneous sources

Draft Results

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

# Installations	=	Applicable Stock	*	Annual Adoption %
Number of installed units of a given type of equipment in a state, customer segment, vintage, etc.		**Number of equipment units** that have failed and need to be replaced		**Percentage of applicable stock** that will install the equipment based on choice or code requirement

Customer Decision Modeling

Final Annual Adoption %	=	Payback Acceptance	*	S_Curve_%
		Customer Payback Acceptance: A value between 0% and 100% that represents the highest attainable market share (based on project payback period from customer perspective)		**The market diffusion of given equipment type*:** A value between 0% and 100% based on Bass diffusion-of-innovation theory * Independent of project economics

Draft Results

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%

Idaho Load Forecast

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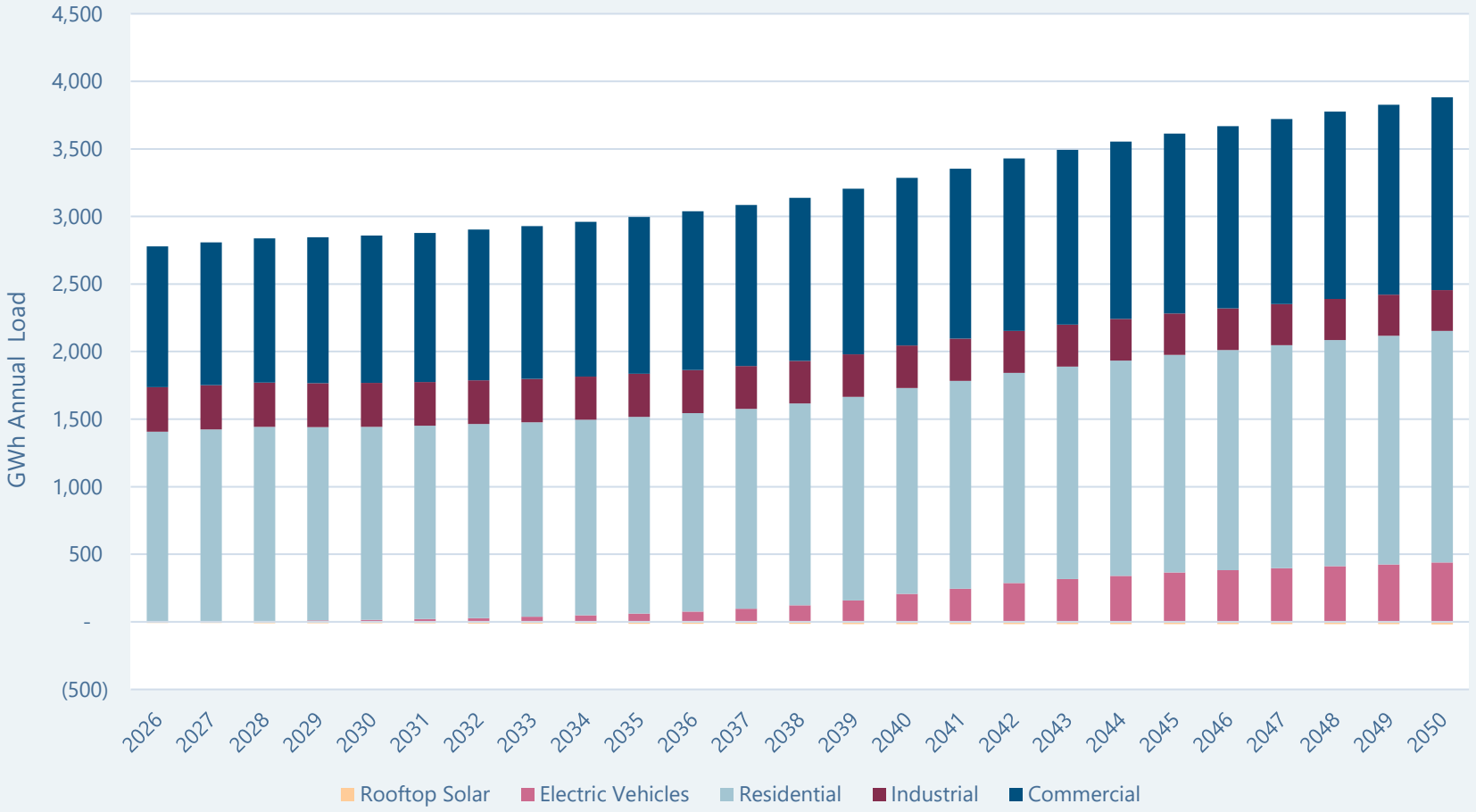
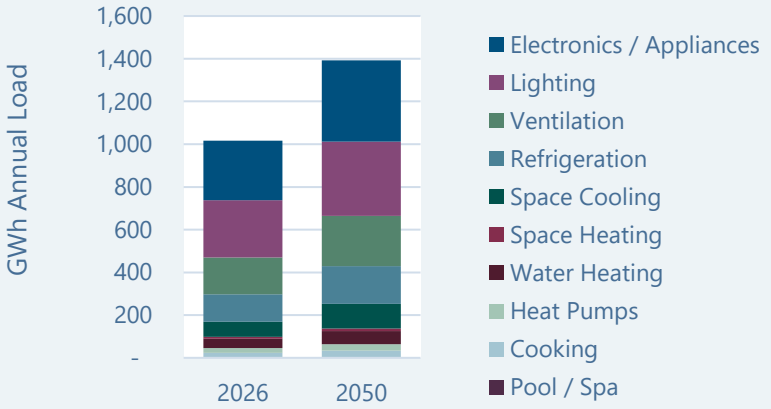
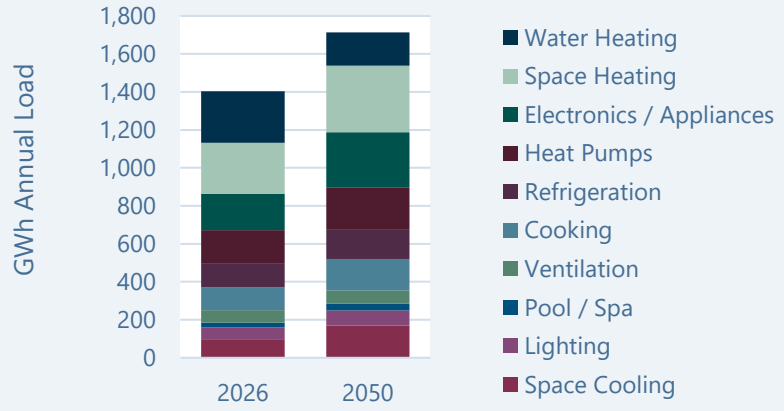
Idaho Electric Energy Load Forecast



Commercial End Uses

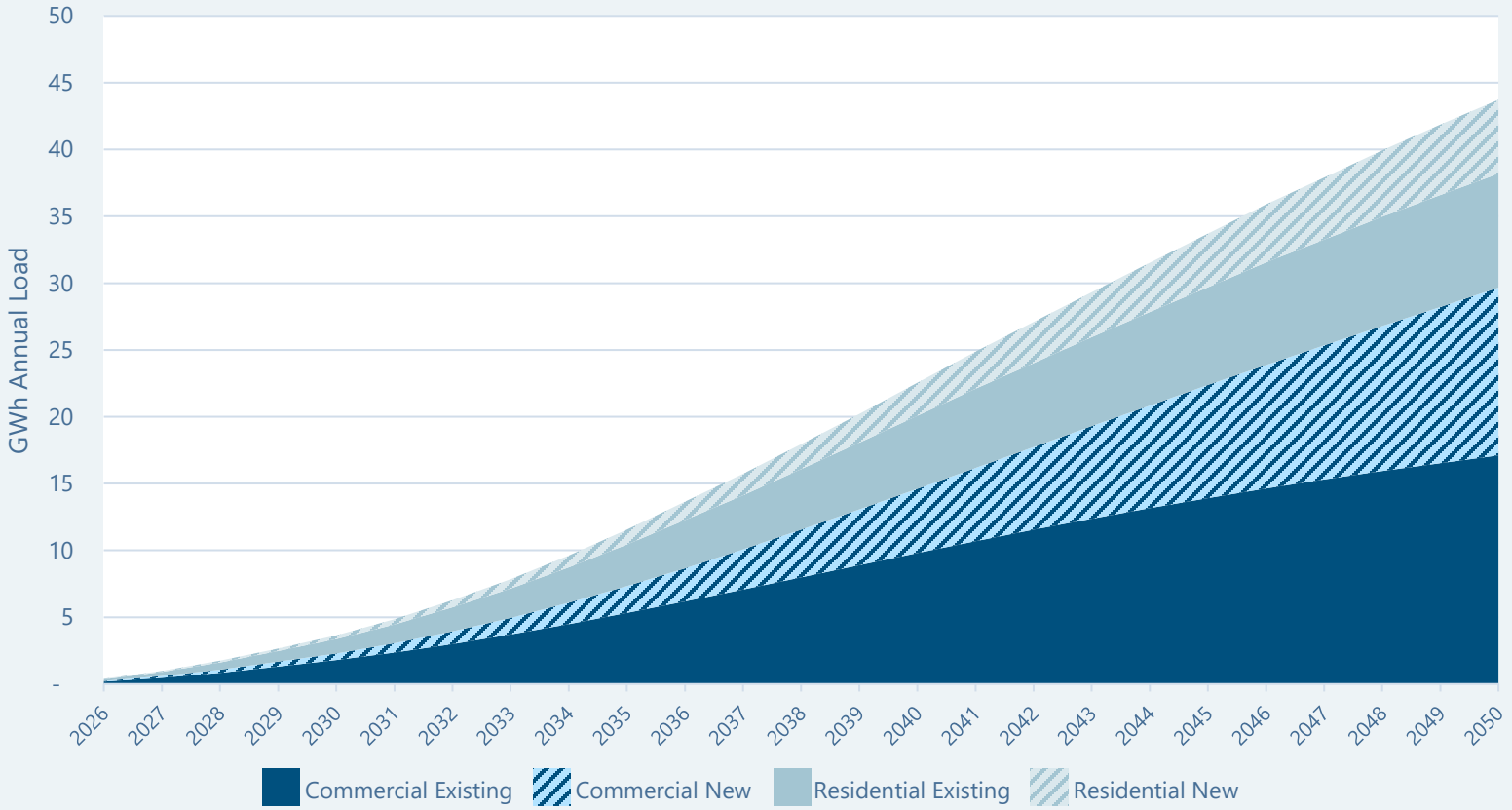


Residential End Uses



Draft Results

Idaho Electric Energy Load Forecast – Building Electrification



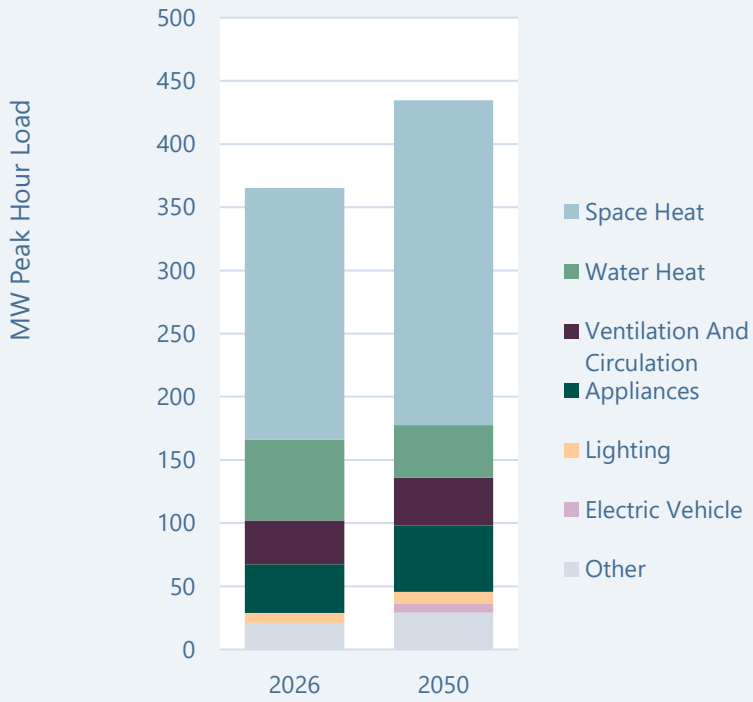
Discussion / Findings

- Building electrification represents 1.1% of the building load in 2050, primarily in commercial buildings
- High conversion costs and electric energy costs slow the adoption of building electrification
- Customer economics (e.g., customer payback) are barriers for building electrification

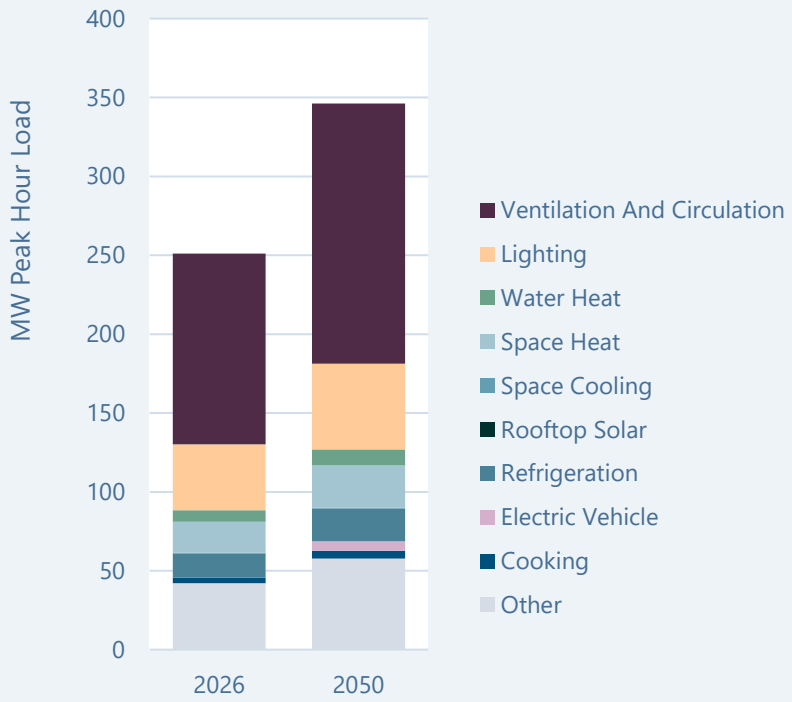
Draft Results

Idaho Electric Winter Peak Load Forecast

Residential



Commercial



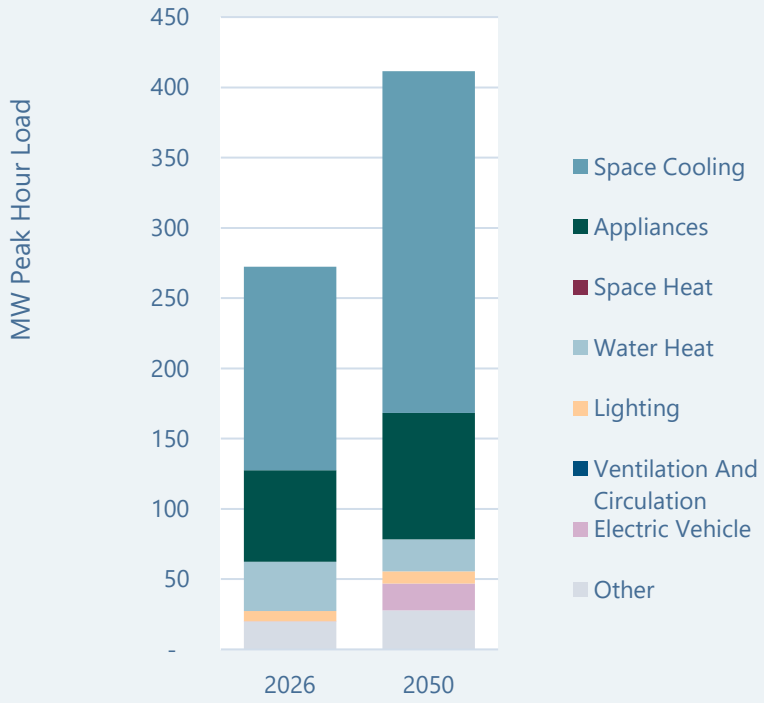
Discussion / Findings

- Peak defined as top system hour within each mouth
- Top residential winter monthly peak, for Space Heat, increased by 27% from 2026 to 2050.
- Top commercial summer monthly peak, for Ventilation and Circulation, increased by 36% from 2026 to 2050
- Peak increases driven by:
  - Customer growth
  - EV forecast
  - Impacts from building electrification and temperature forecast

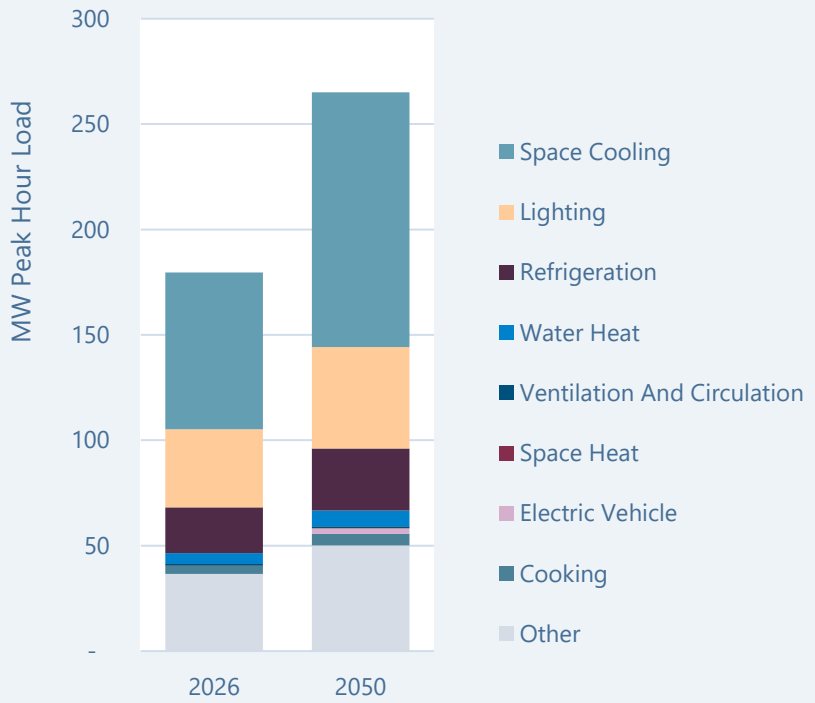
Draft Results

Idaho Electric Summer Peak Load Forecast

Residential



Commercial

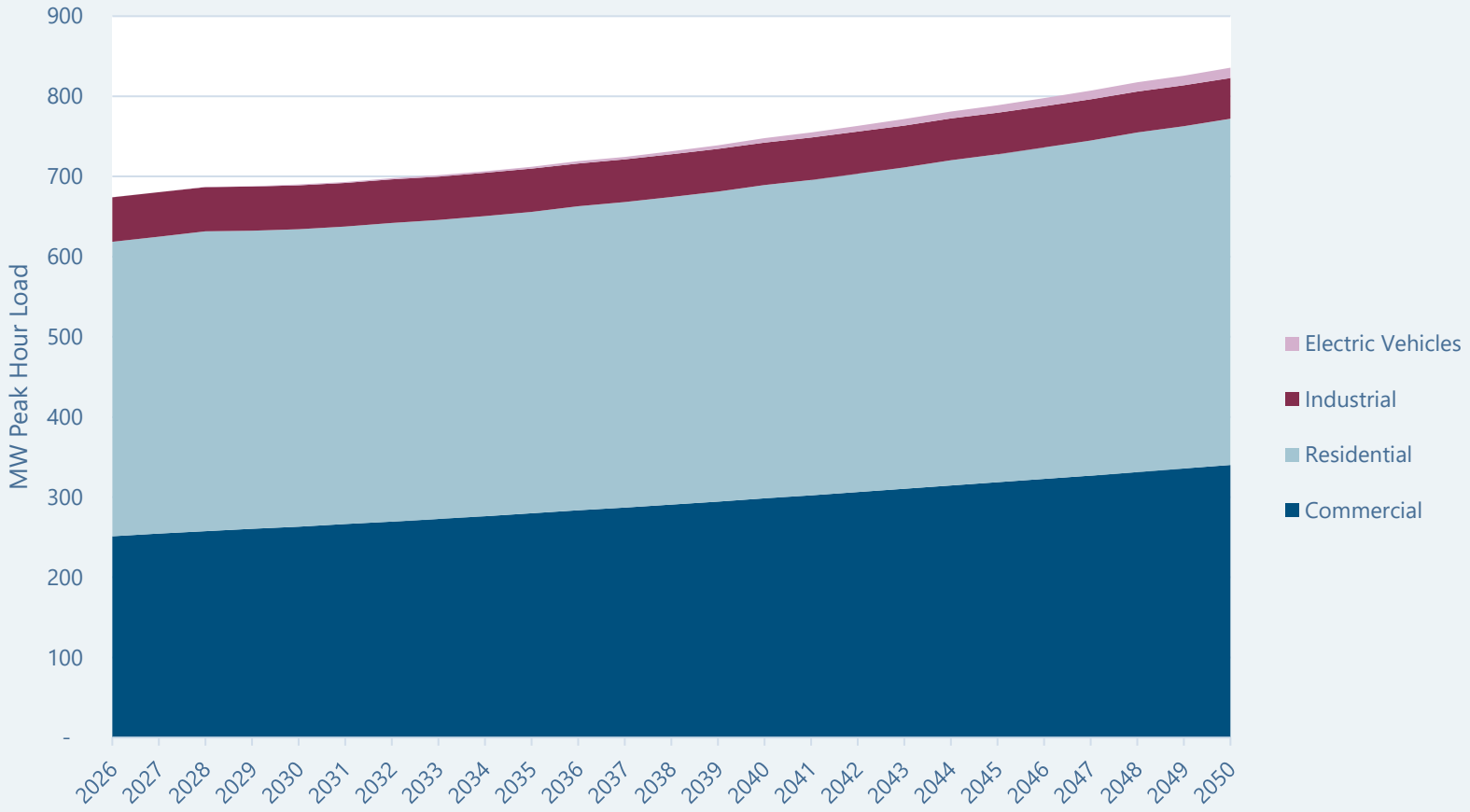


Discussion / Findings

- Peak defined as top system hour within each mouth
- Top residential summer monthly peak, for Space Cooling, increased by 80% from 2026 to 2050
- Top commercial summer monthly peak, for Space Cooling, increased by 64% from 2026 to 2050
- Peak increases driven by:
  - Customer growth
  - Smaller impacts from building electrification and temperature forecast

Draft Results

Idaho Winter Electric Peak Load Forecast

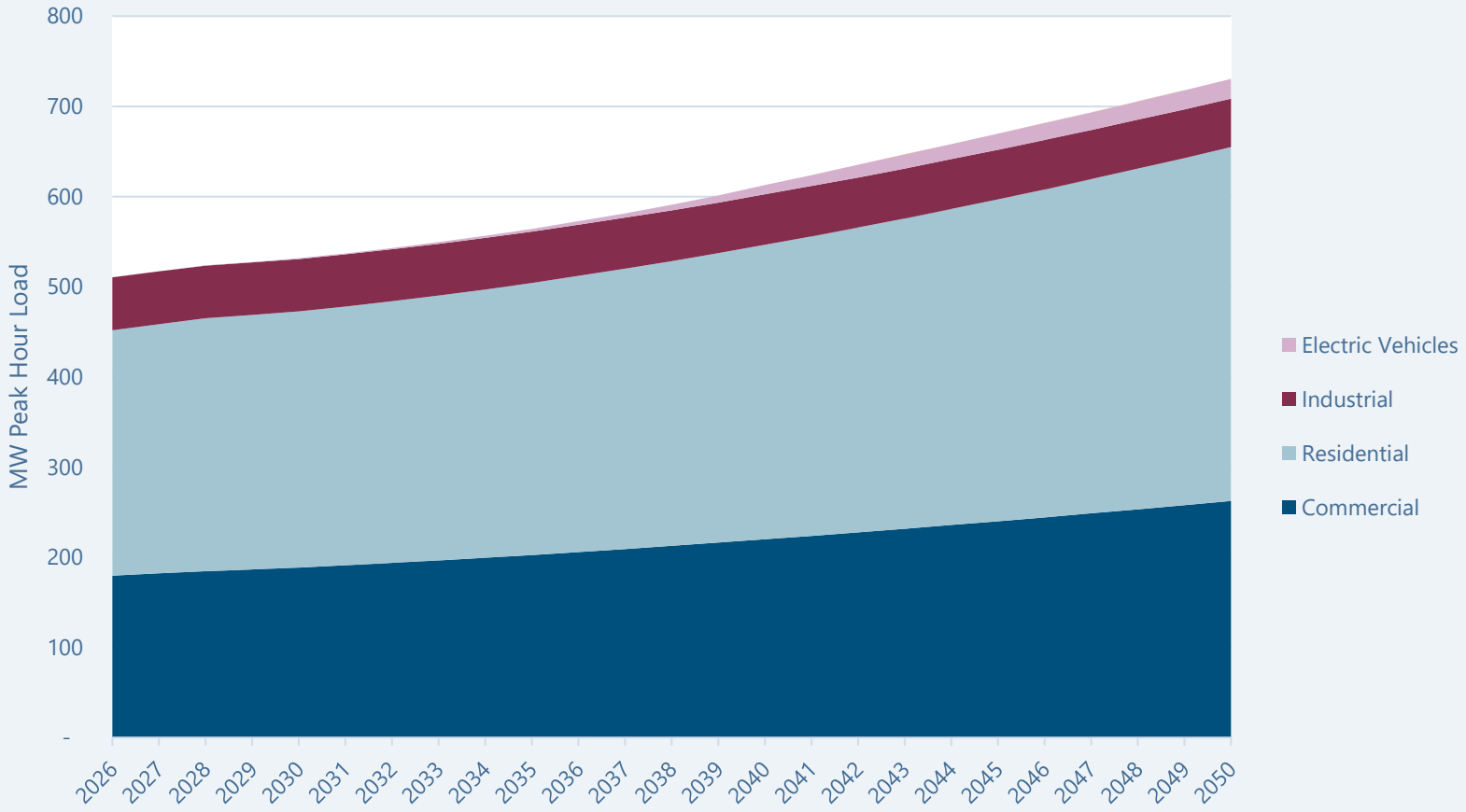


Discussion / Findings

Buildings peak winter growth roughly proportional to energy growth. However, absolute impacts depend on end-use. For example, EVs have a relatively big impact on energy load, but modest impact on peak load, particularly in winter

- EV represent 2.3% of the 2050 Feb load
- Commercial 2050 Feb load increased by 50% compared to 2026
- Residential 2050 Feb load increased by 41% compared to 2026

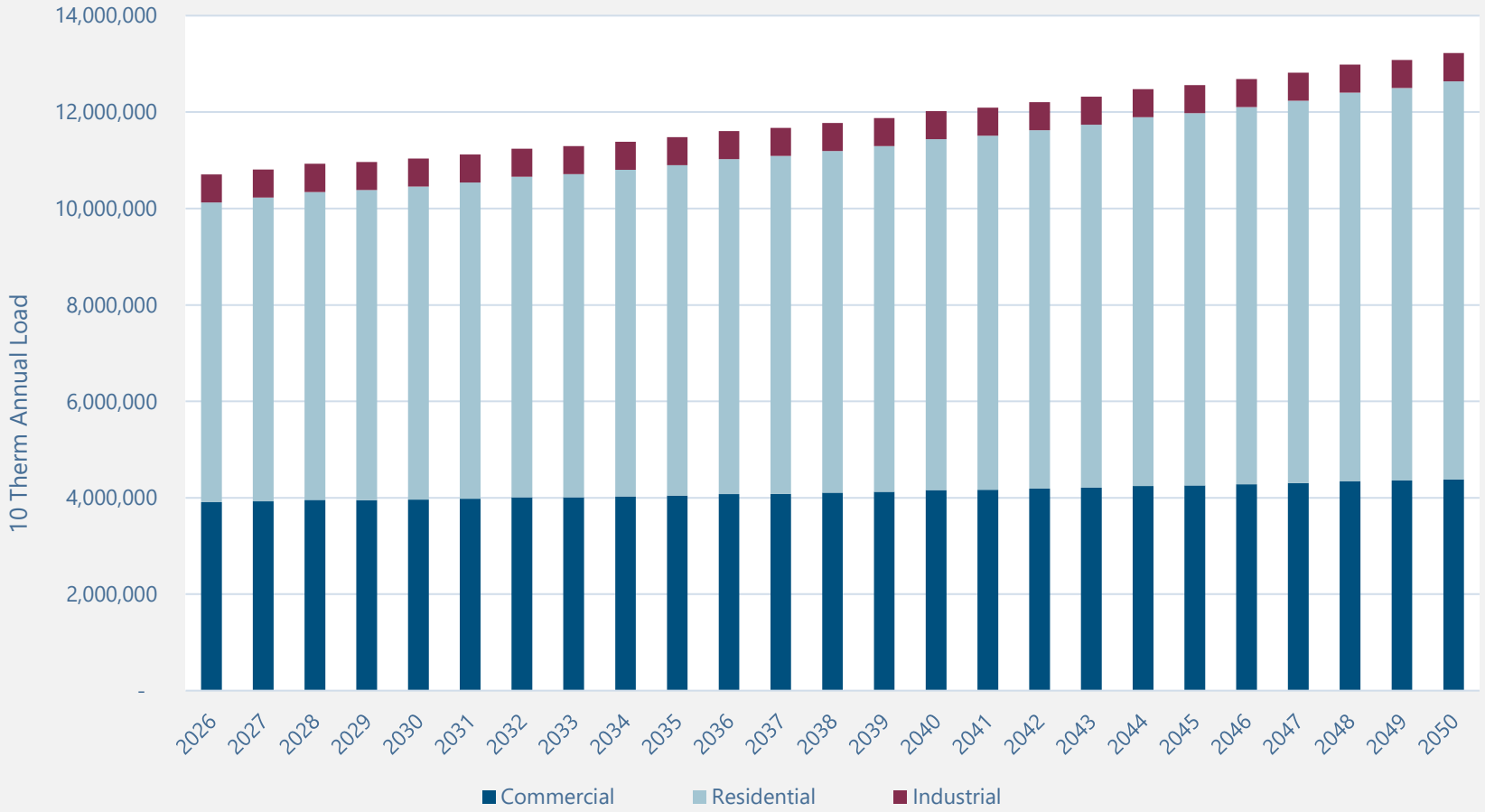
Idaho Summer Electric Peak Load Forecast

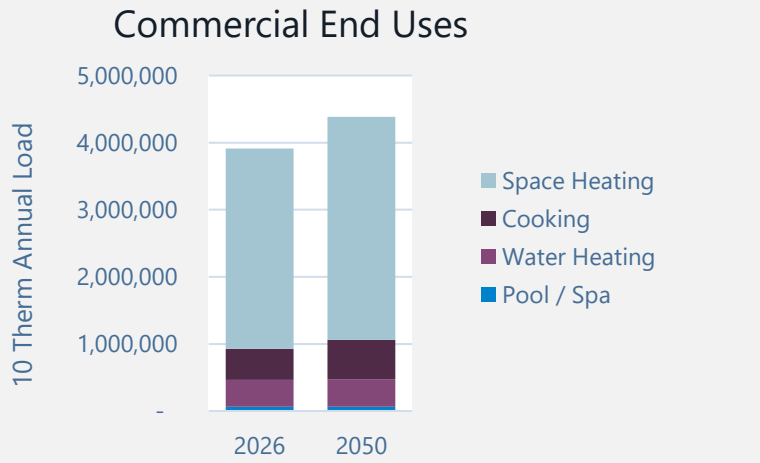


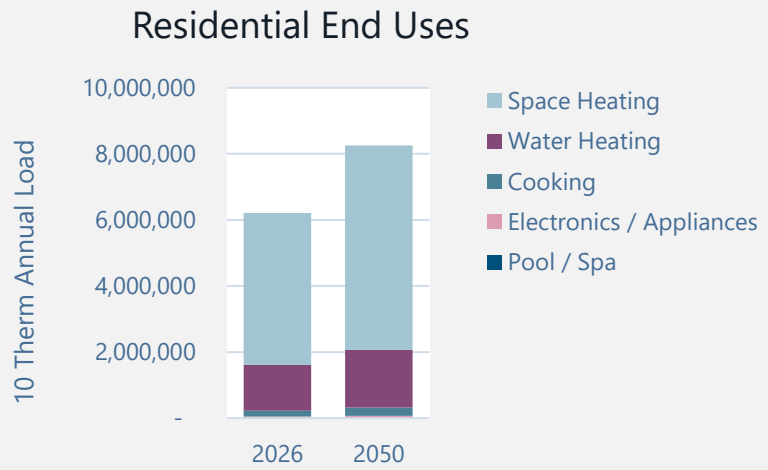
Discussion / Findings

- EVs represent 2.8% of the 2050 peak load
- Commercial 2050 peak load increased by 35% compared to 2026
- Residential 2050 peak load increased by 14% compared to 2026

Idaho Gas Energy Load Forecast

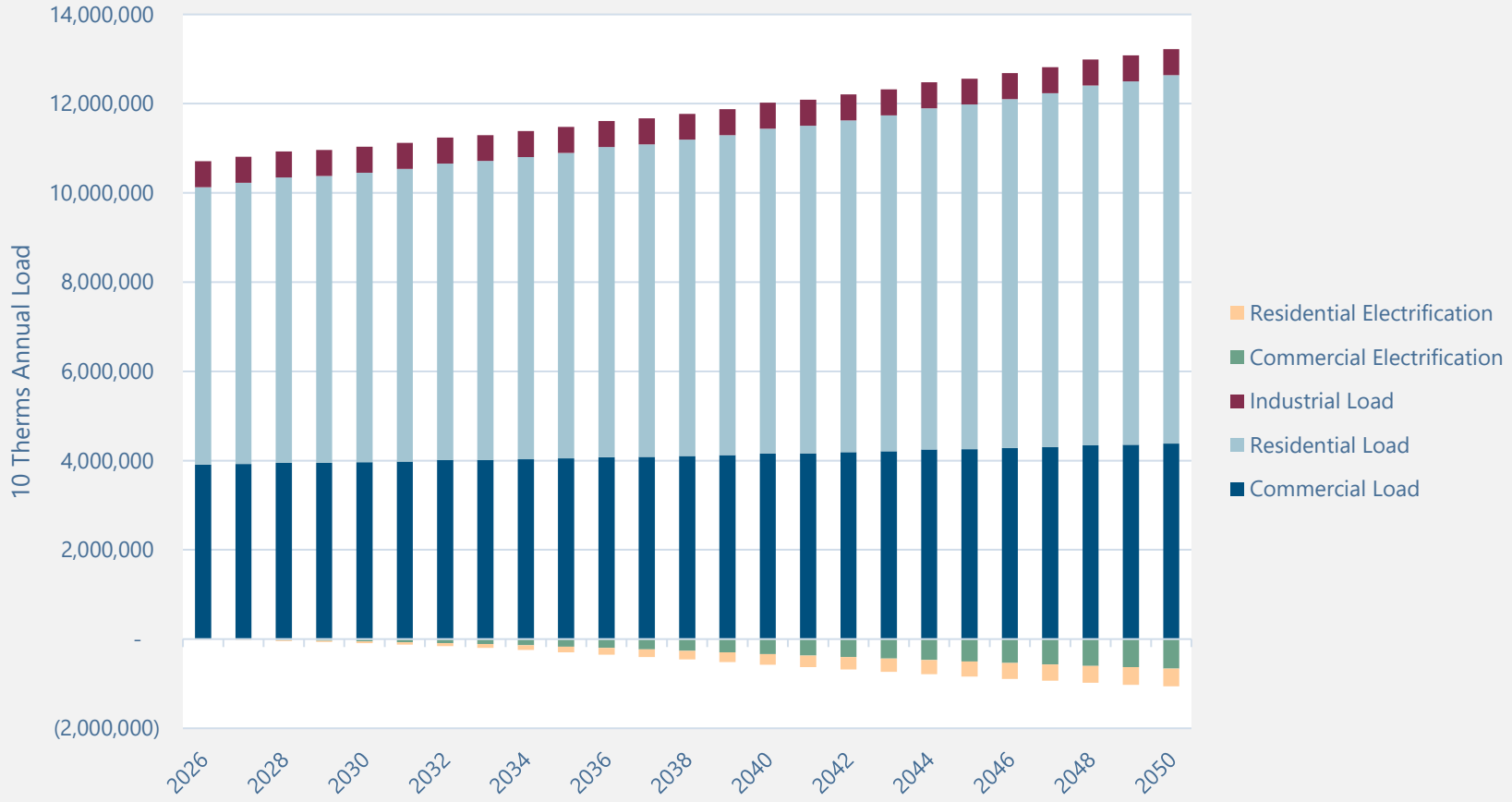






Draft Results

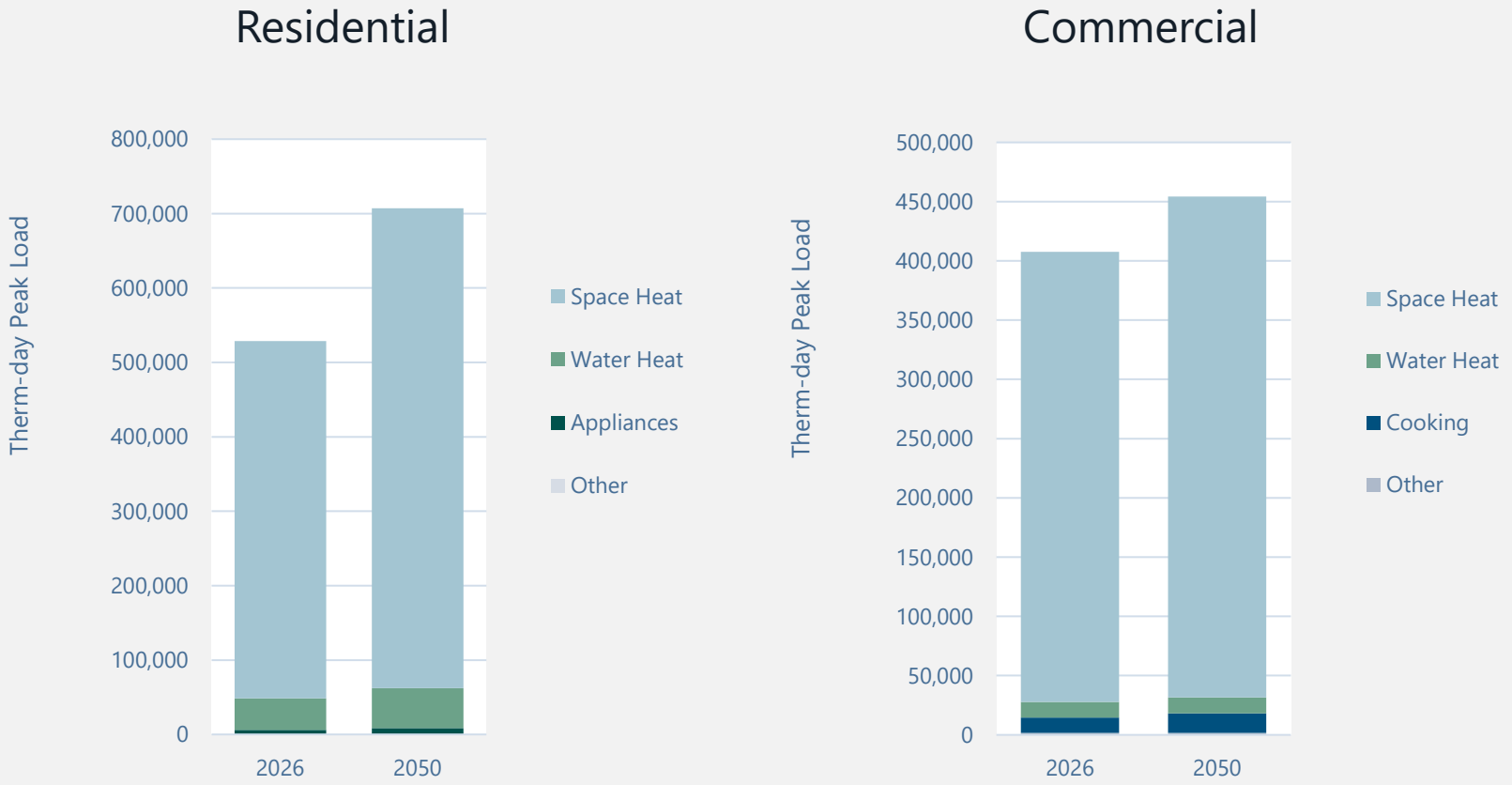
Idaho Lost Gas Energy Load – Building Electrification



Discussion / Findings

- Electrification results in approximately 10% reduction in gas consumption by 2050, accounting for changes in residential and commercial loads, relative to the total statewide load
- Impacts gas consumption by electrification estimated by running two load scenarios: 1) electrification and 2) no electrification

Idaho Gas Winter Peak Load Forecast

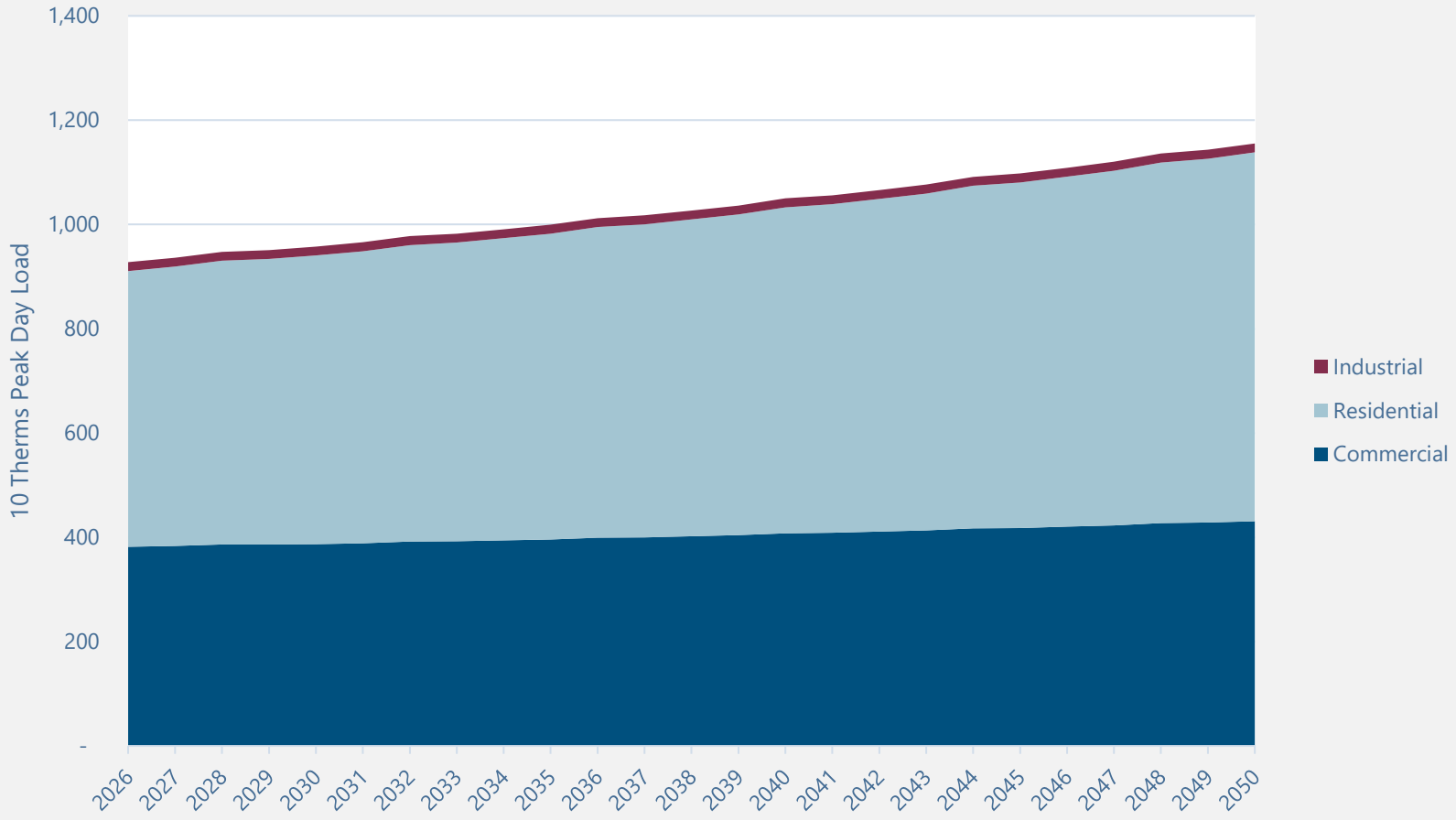


Discussion / Findings

- Peak defined as top system day within each mouth
- Top residential winter monthly peak, for space heating, increased by 34% from 2026 to 2050.
- Top commercial winter monthly peak, for space heating, increased by 11% from 2026 to 2050
- Peak increases primarily driven by:
  - Customer growth

Draft Results

Idaho Winter Annual Gas Peak Load Forecast



Discussion / Findings

- Commercial 2050 load increases by 13% compared to 2026
- Residential 2050 load increases by 34% compared to 2026
- No change within industrial. While industrial sector has approximately 5% of energy load, contribution to peak day load is minor - given industrial load profile

Oregon Load Forecast

AVISTA

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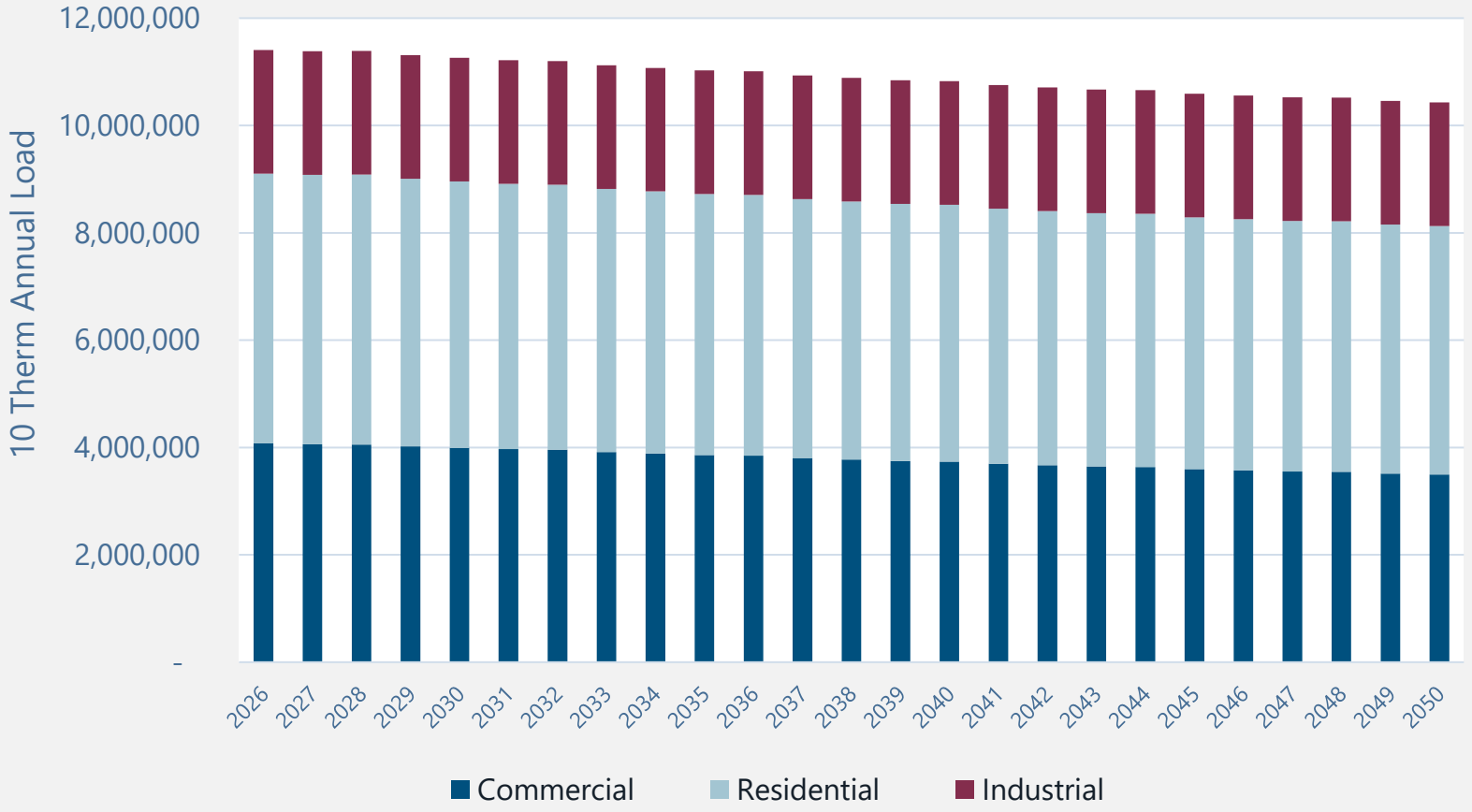
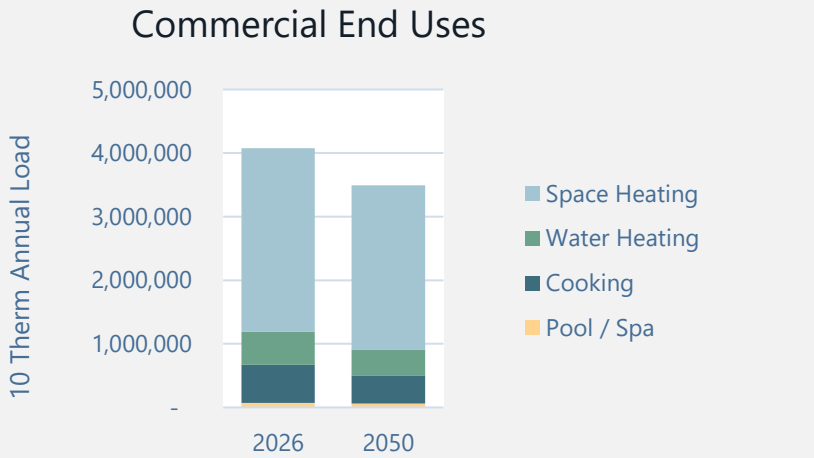
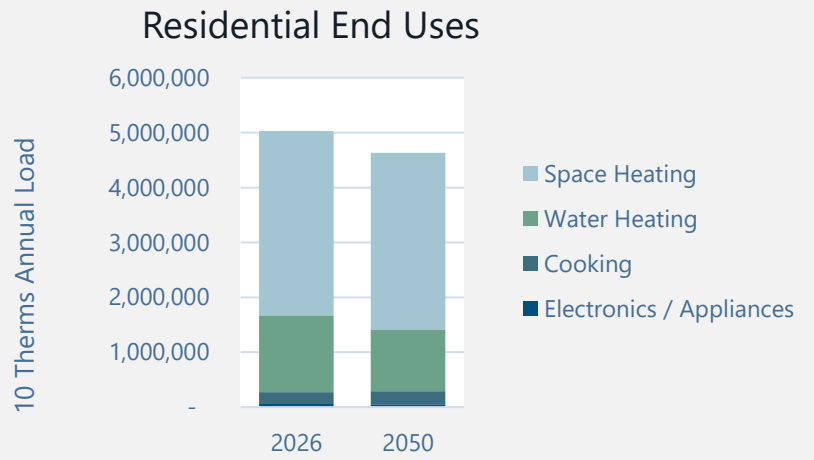
Oregon Gas Energy Load Forecast

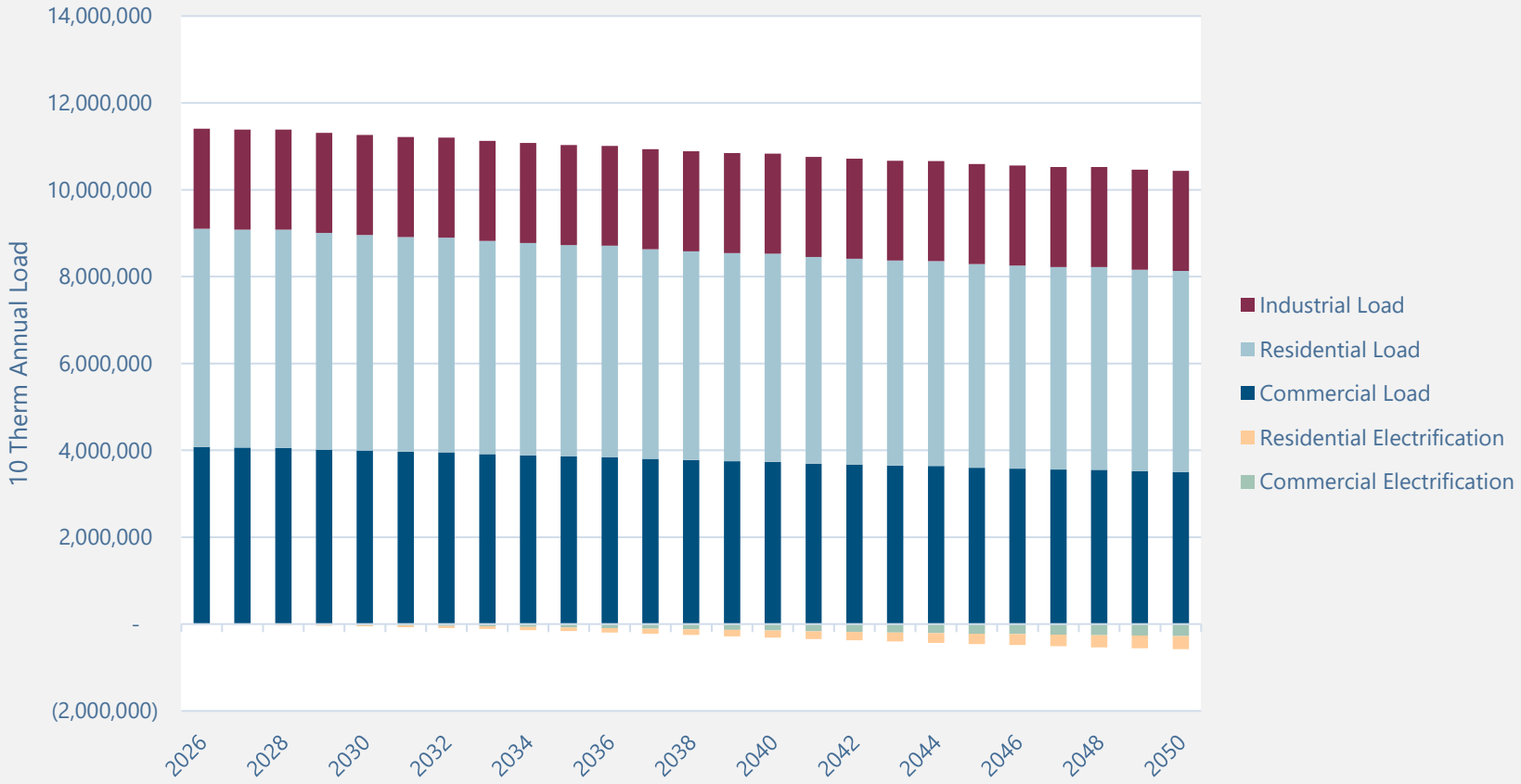






Draft Results

Oregon Gas Energy Load Forecast – Building Electrification

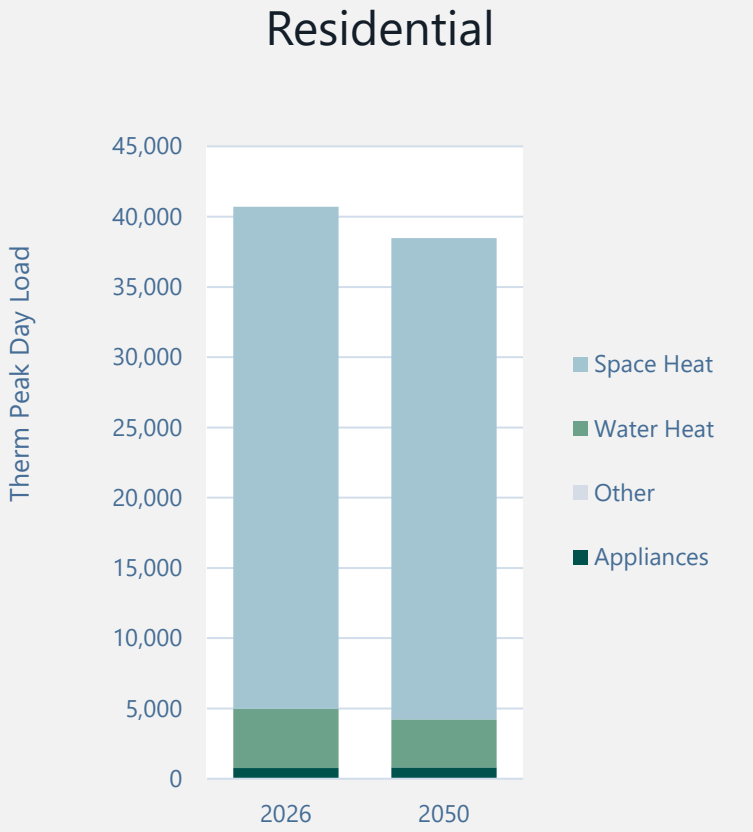


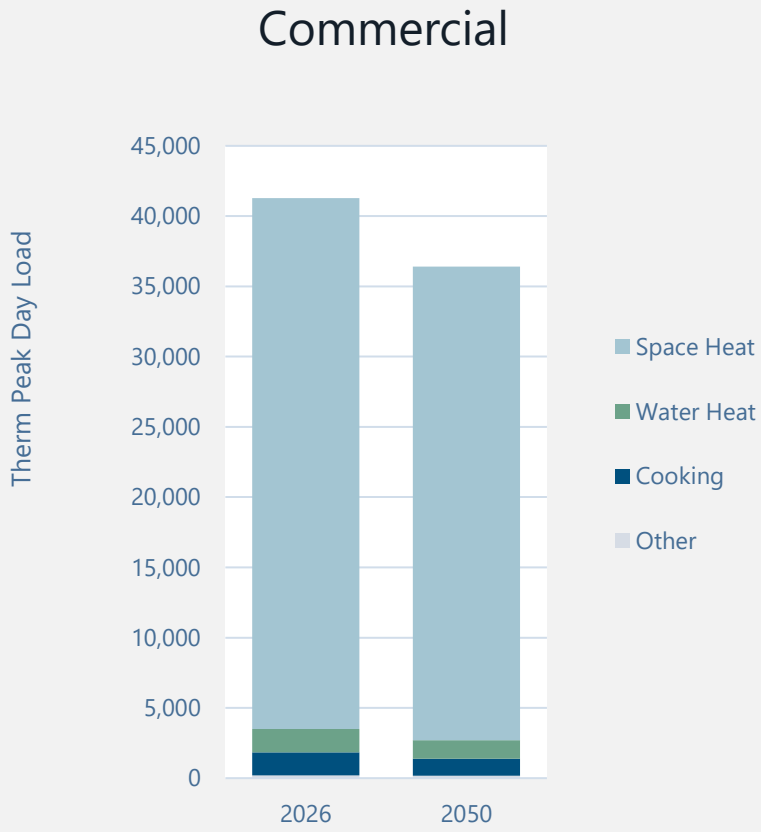
Discussion / Findings

- Electrification results in approximately 5% reduction in gas consumption by 2050
- Electrification impacts estimated by running two scenarios: 1) electrification, and 2) no electrification

Draft Results

Oregon Gas Winter Peak Load Forecast

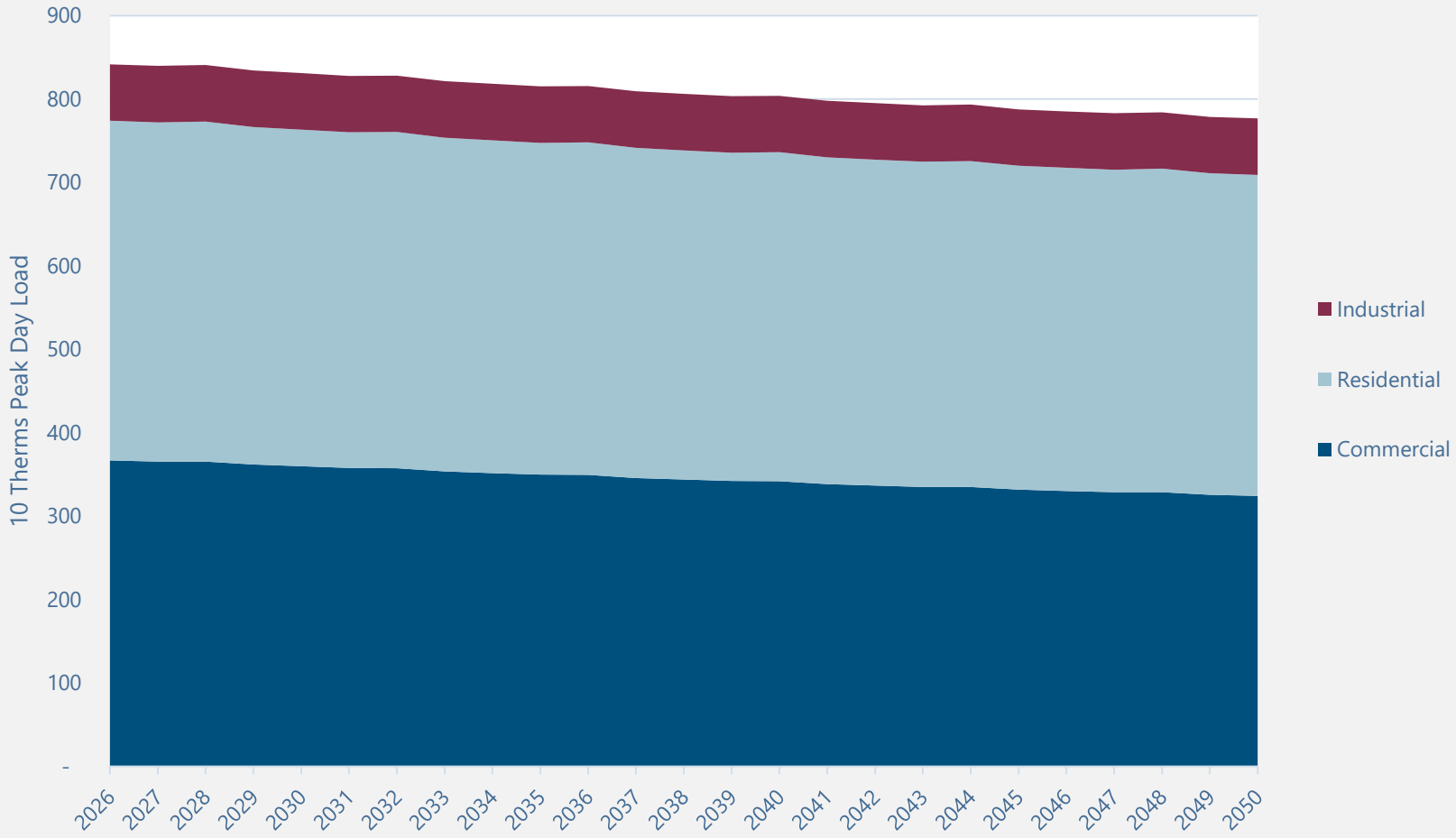




Discussion / Findings

- Peak defined as top system day within each mouth
- Top residential winter monthly peak, for space heating, decreased by 4% from 2026 to 2050.
- Top commercial winter monthly peak, for space heating, decreased by 11% from 2026 to 2050

Oregon Winter Annual Gas Peak Load Forecast



Discussion / Findings

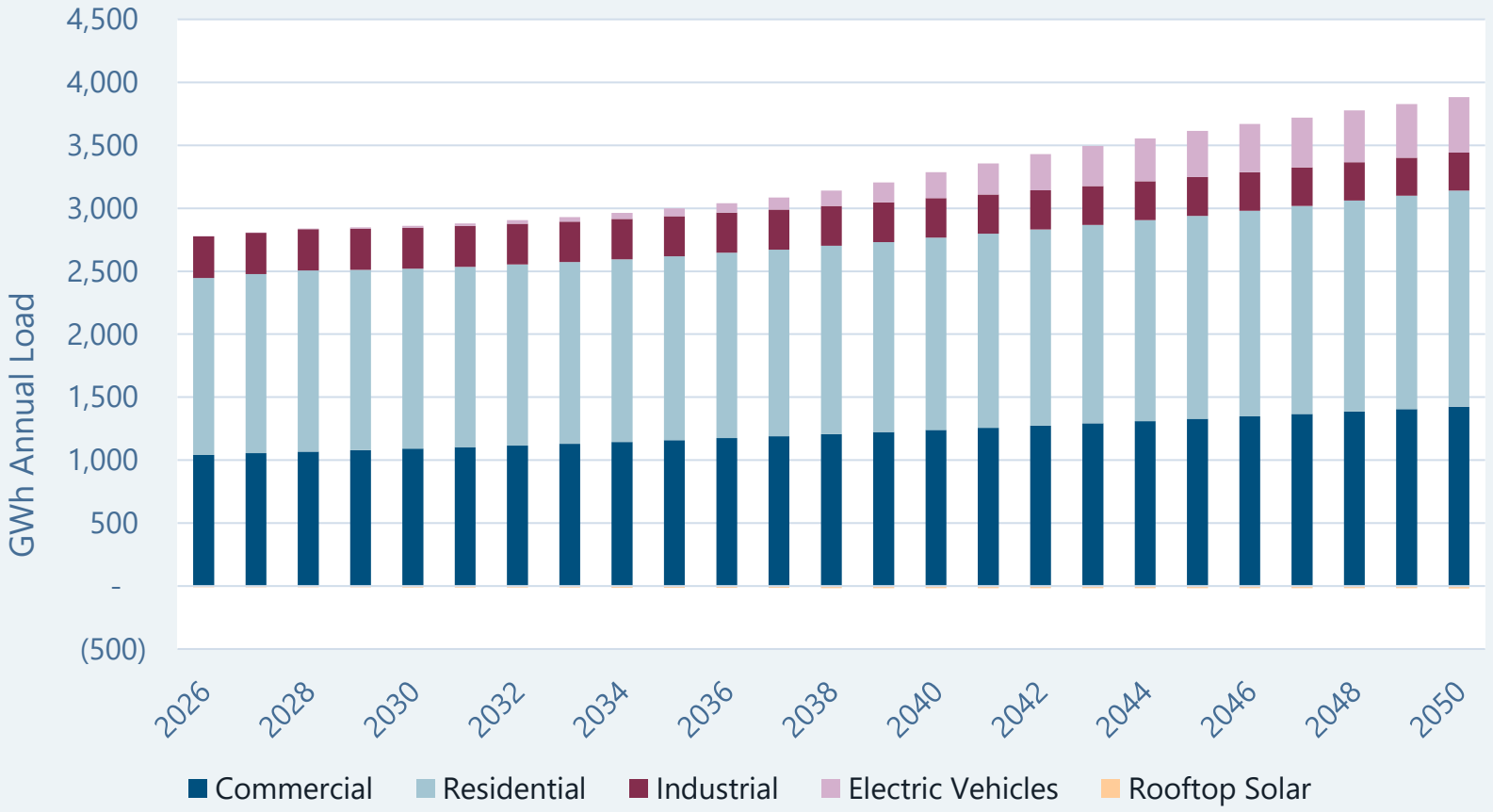
- Commercial 2050 load decreased by 12% compared to 2026
- Residential 2050 load decreased by 6% compared to 2026
- No change in the industrial sector

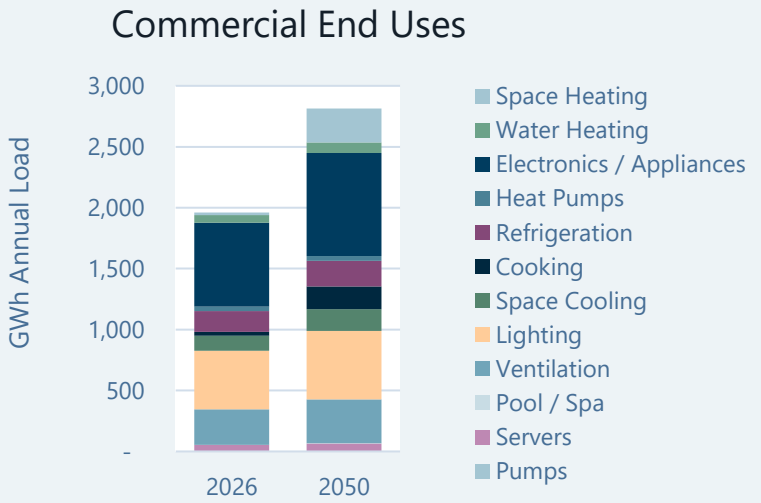
Washington Load Forecast

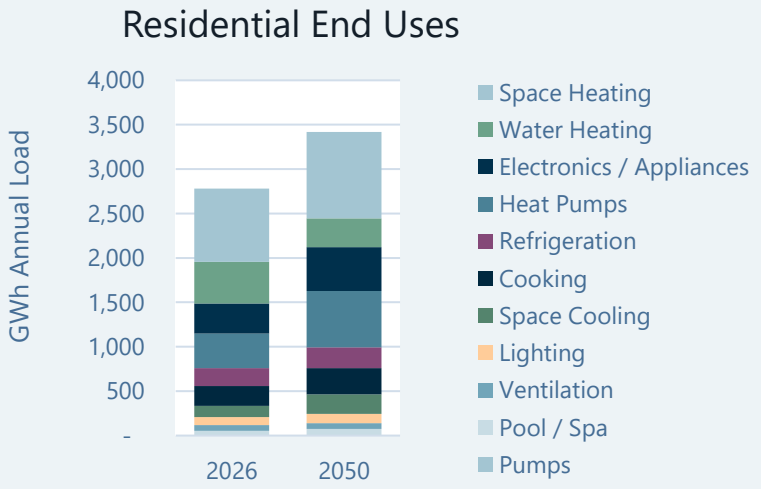
AVISTA

CADMUS

Washington Electric Energy Load Forecast

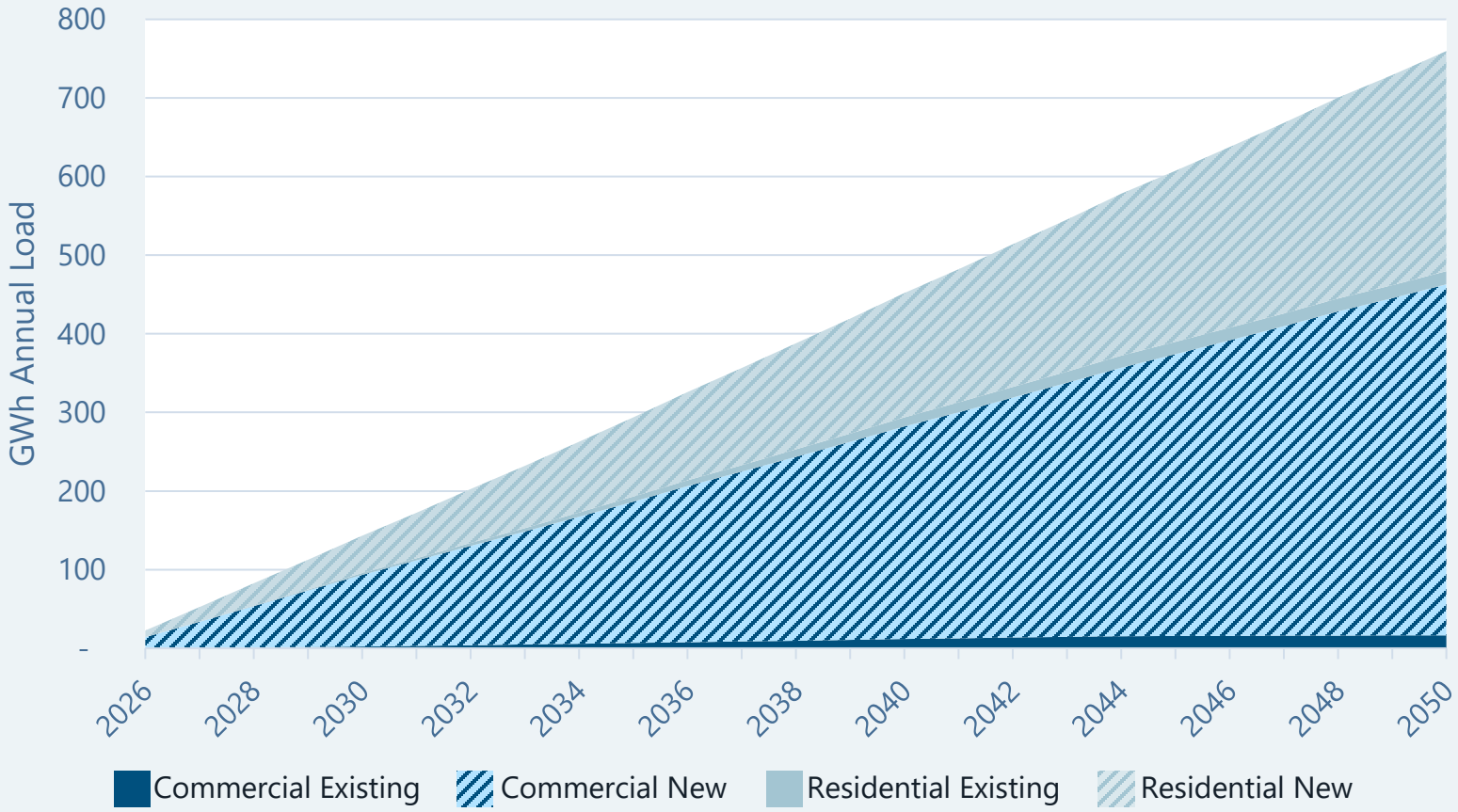






Draft Results

Washington Electric Energy Load Forecast – Building Electrification



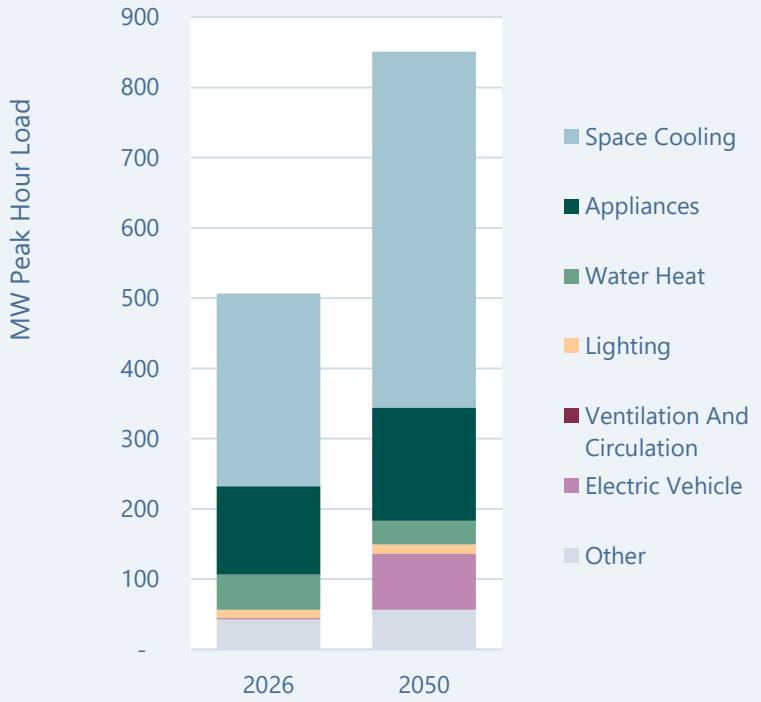
Discussion / Findings

- Building electrification represents 11% of the building load in 2050
- Building code requirements for new construction are the main driver
- Existing construction customers simulated to have significantly lower uptake

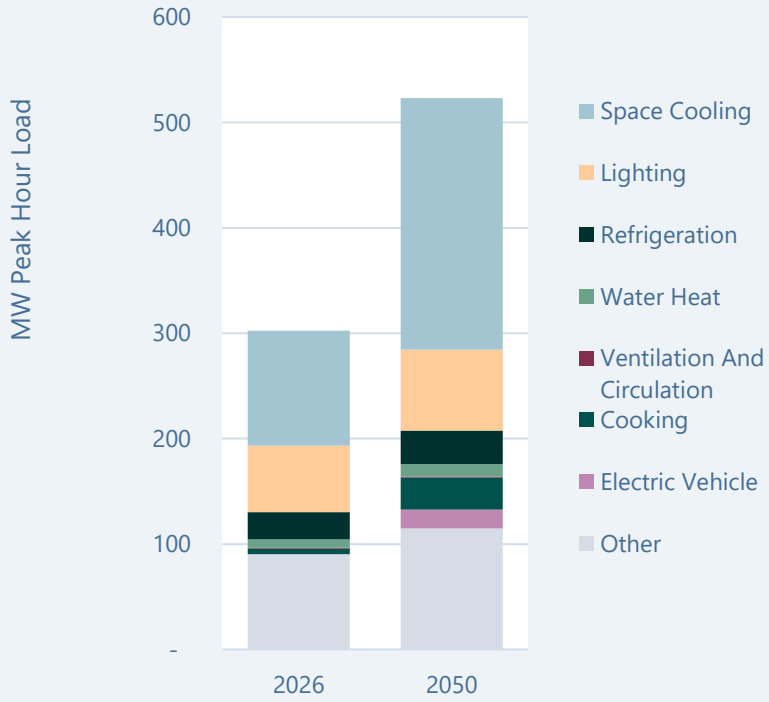
Draft Results

Washington Electric Summer Peak Load Forecast

Residential



Commercial



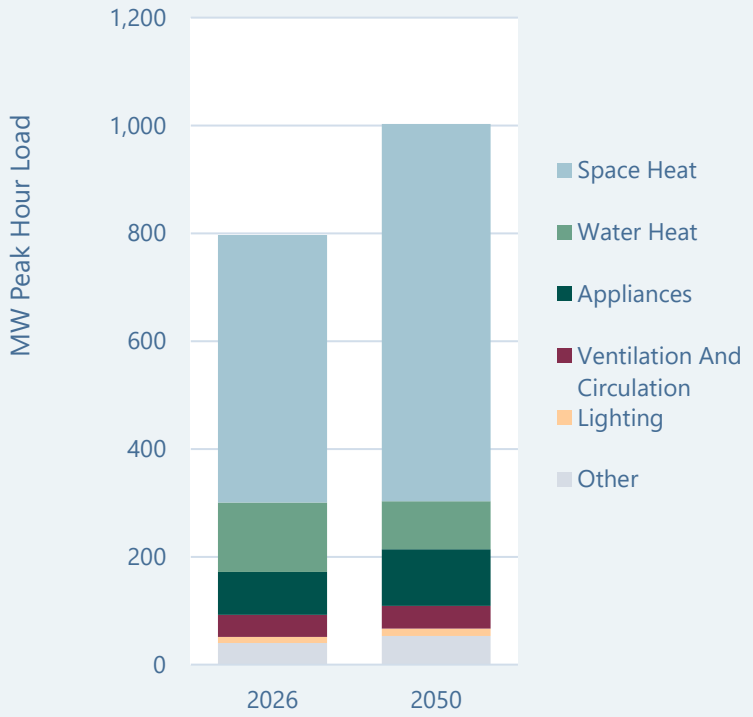
Discussion / Findings

- Peak defined as top system hour within each mouth
- Top residential summer monthly peak, for space cooling, increased by 72% from 2026 to 2050.
- Top commercial summer monthly peak, for space cooling, increased by 49% from 2026 to 2050
- Peak increases driven by:
  - Electrification
  - Weather
  - Electric vehicle adoption

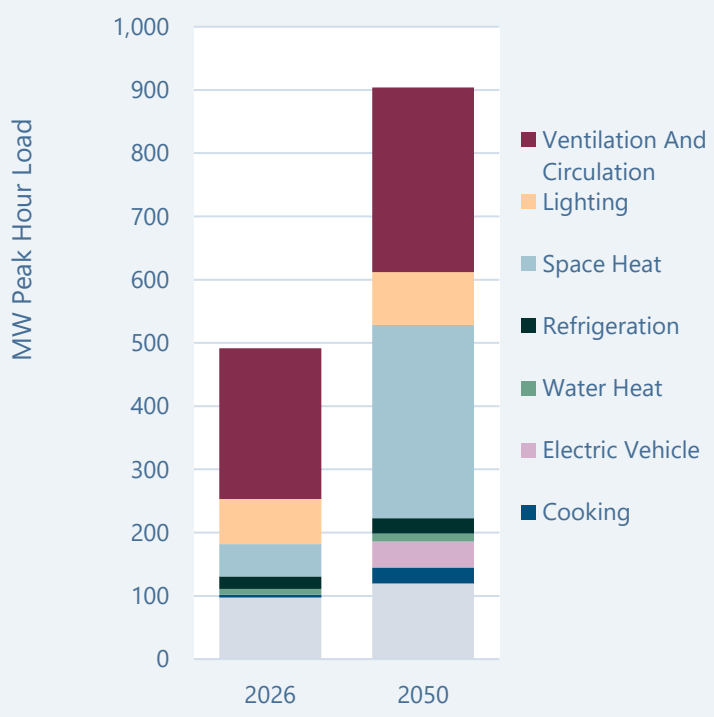
Draft Results

Washington Electric Winter Peak Load Forecast

Residential



Commercial

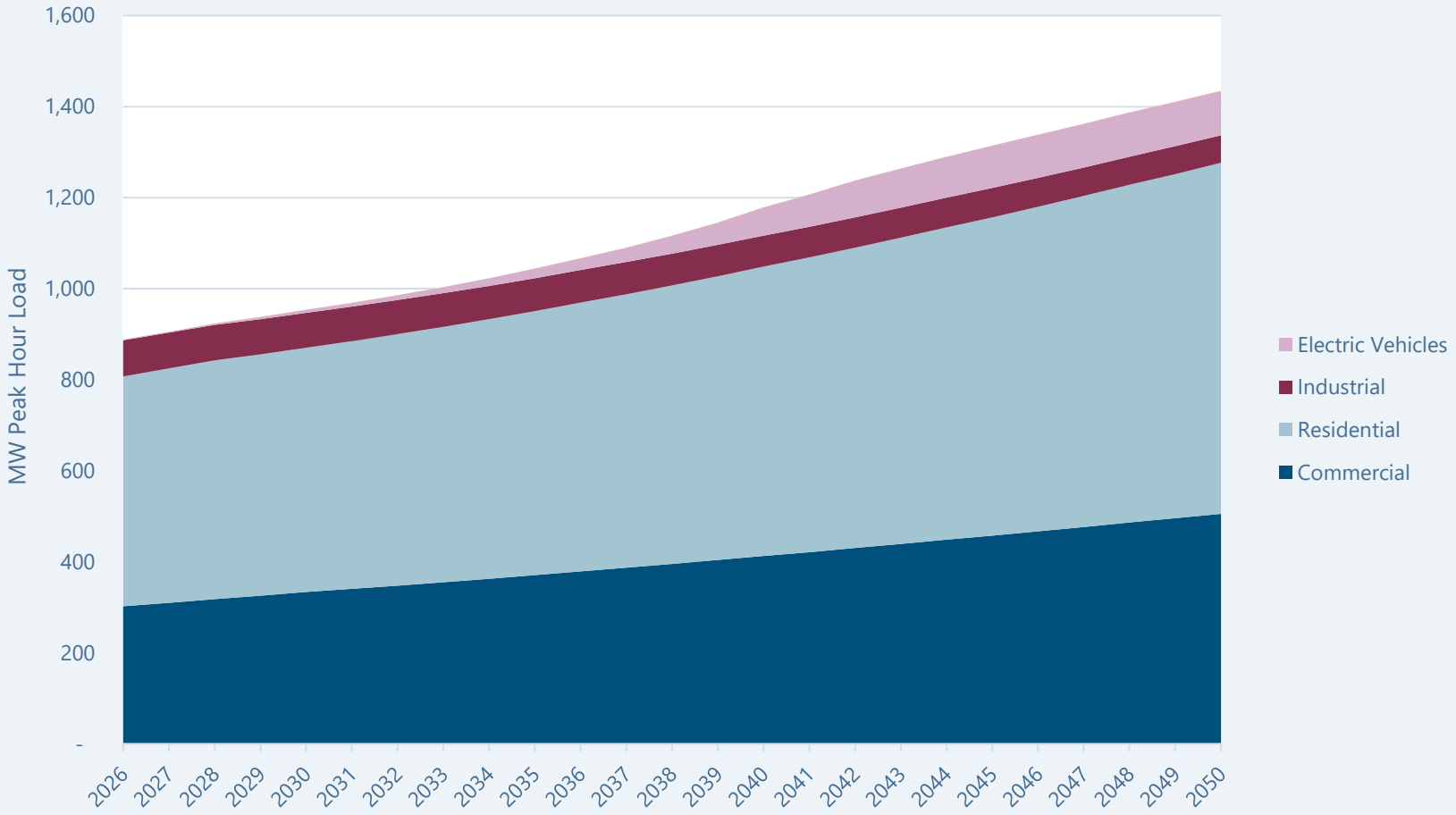


Discussion / Findings

- Peak defined as top system hour within each mouth
- Top residential winter monthly peak, for heat pumps, increased by 138% from 2026 to 2050.
- Top commercial winter monthly peak, for ventilation and circulation, increased by 23% from 2026 to 2050
- Peak increases driven by:
  - Customer growth
  - EV forecast
  - Smaller impacts from building electrification and temperature

Draft Results

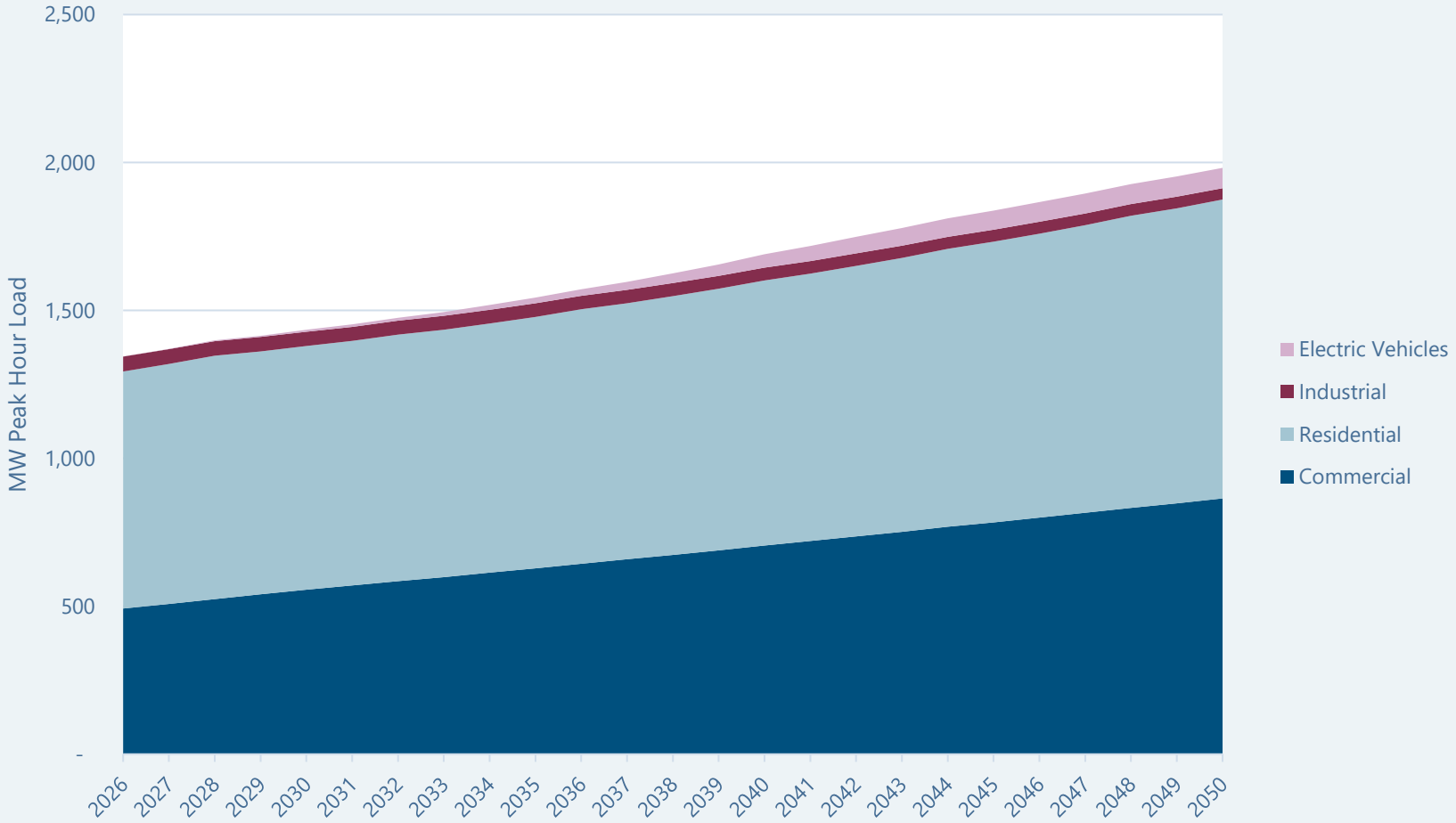
Washington Summer Annual Electric Peak Load Forecast



Discussion / Findings

- EV represent approximately 7% of the 2050 Summer Peak
- Industrial peak load remains relatively steady
- Residential 2050 load increases by 53% compared to 2026
- Commercial 2050 peak load increases by 67% compared to 2026

Washington Winter Annual Electric Peak Load Forecast

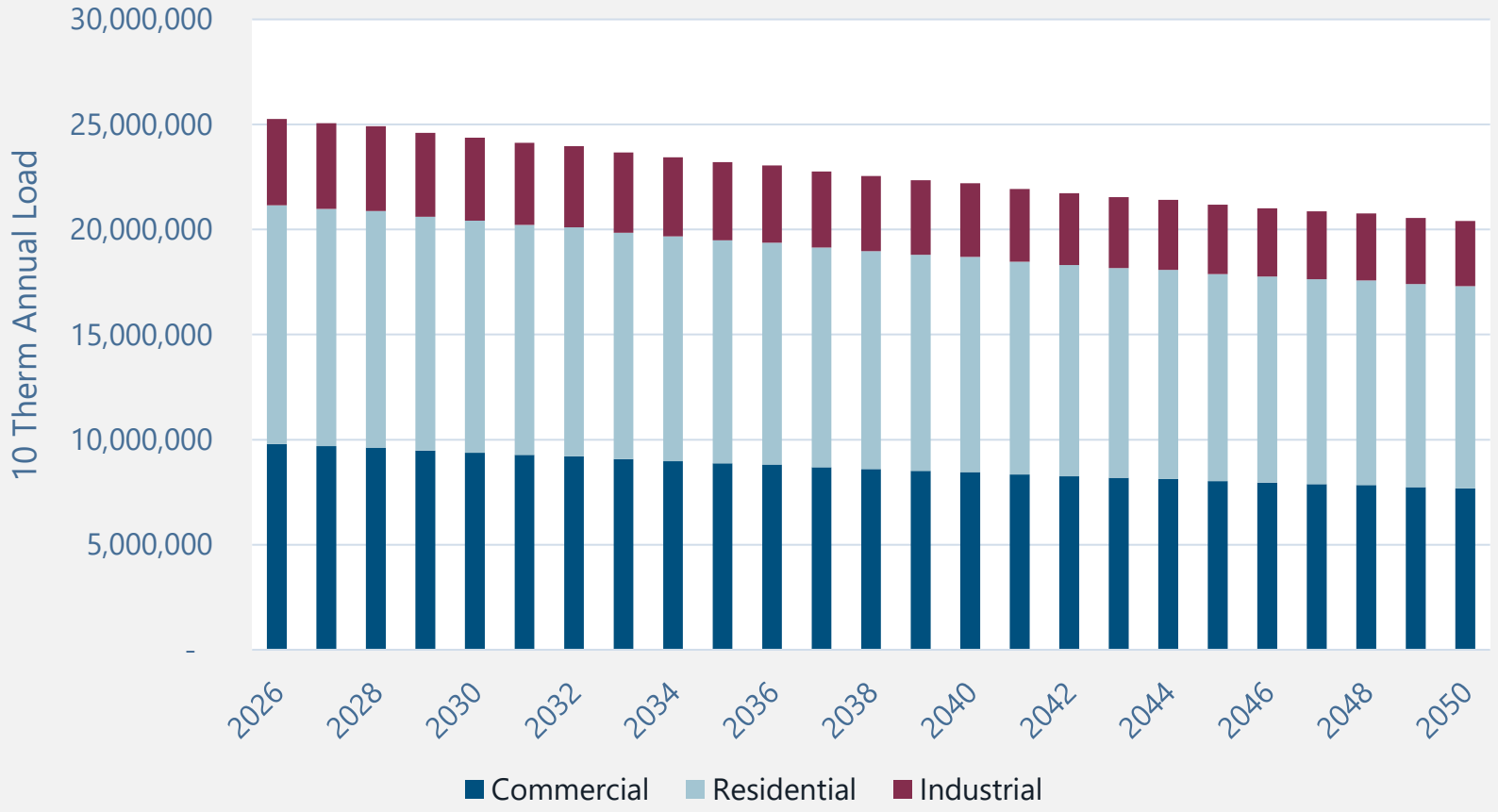


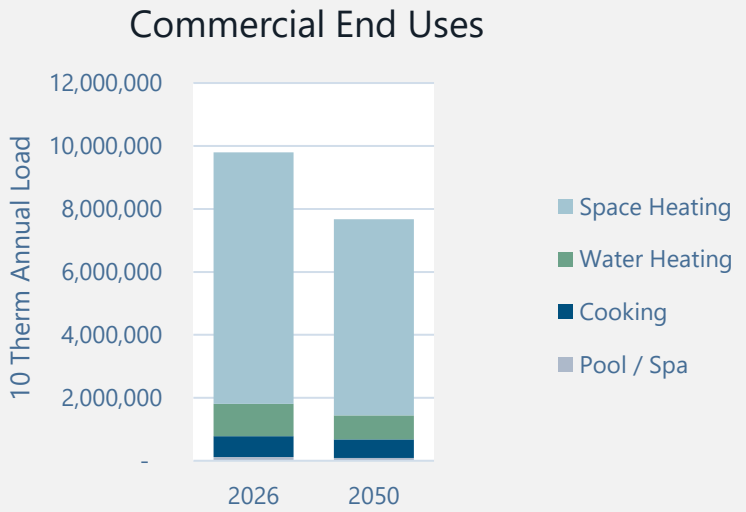
Discussion / Findings

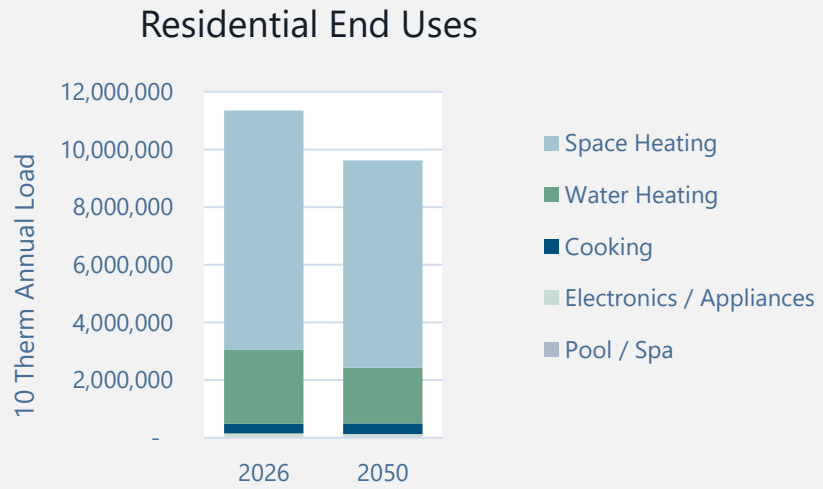
- EV represent 3% of the 2050 winter peak load
- Commercial 2050 winter peak load increases by 76% compared to 2026
- Residential 2050 Feb load increased by 26% compared to 2026

Draft Results

Washington Gas Energy Load Forecast

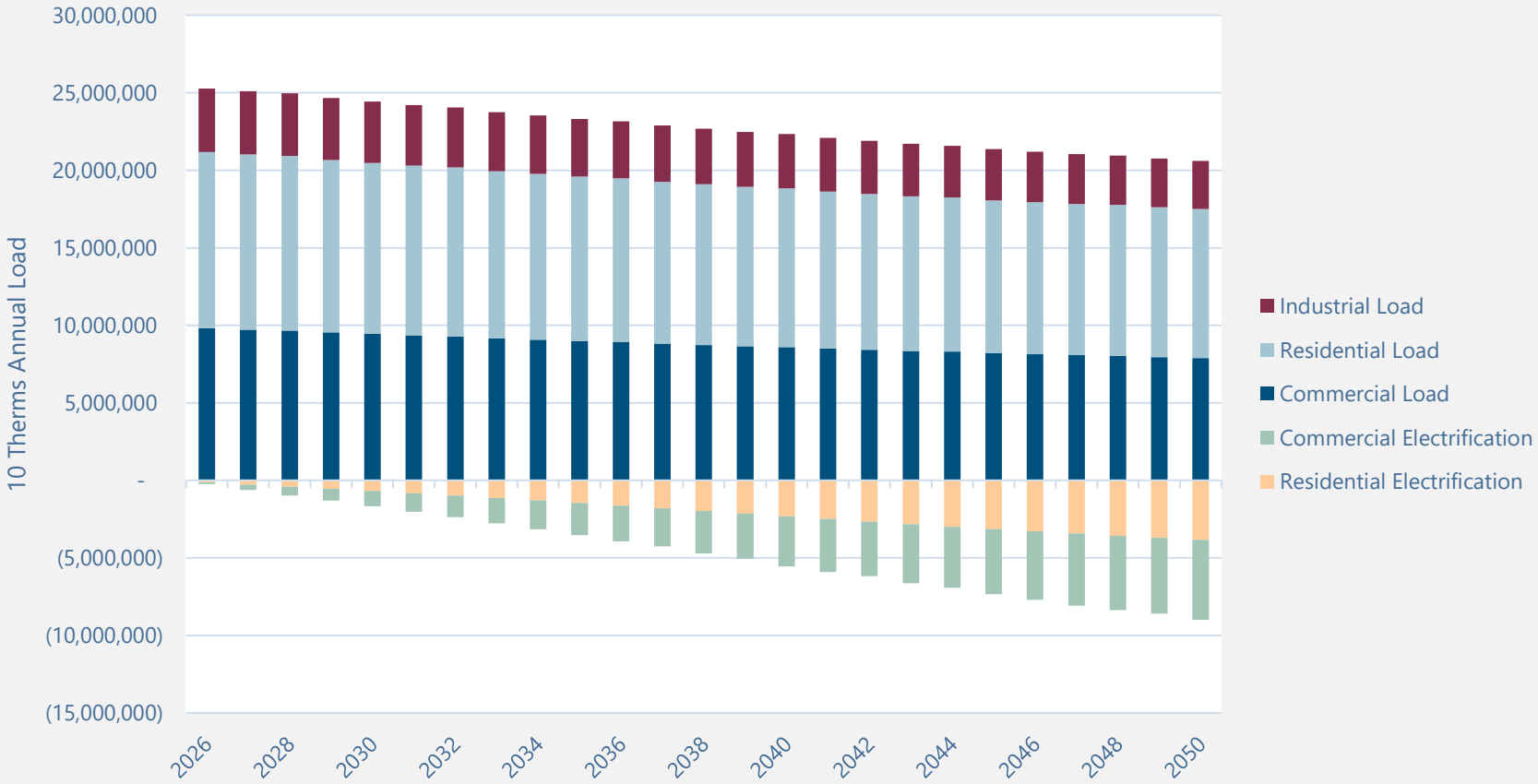






Draft Results

Washington Gas Energy Load Forecast – Building Electrification

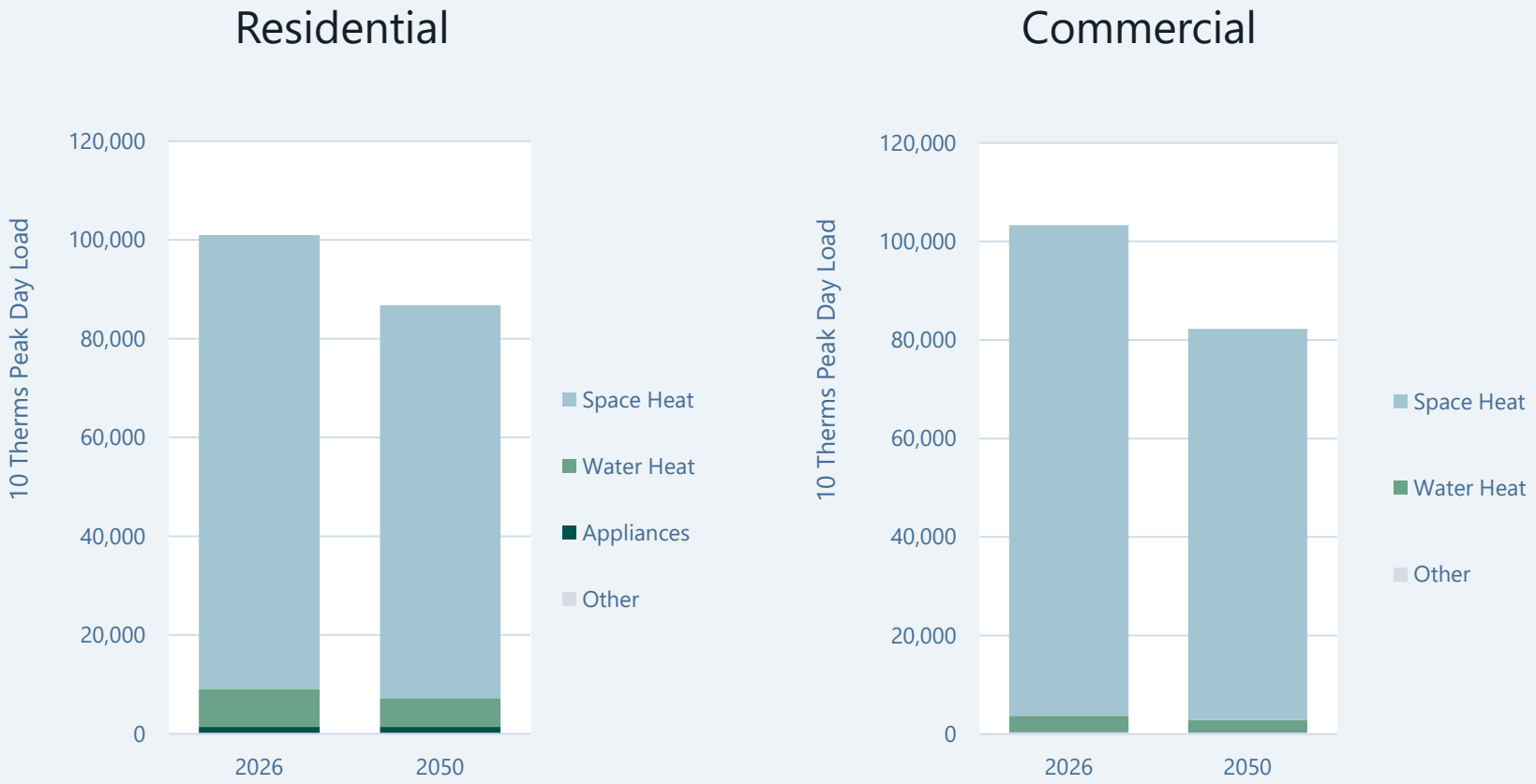


Discussion / Findings

- Impacts from electrification on gas consumption estimated by modeling an electrification and no electrification scenario
- By 2050 approximately 35% decline in gas sales relative to 2026 sales due to electrification

Draft Results

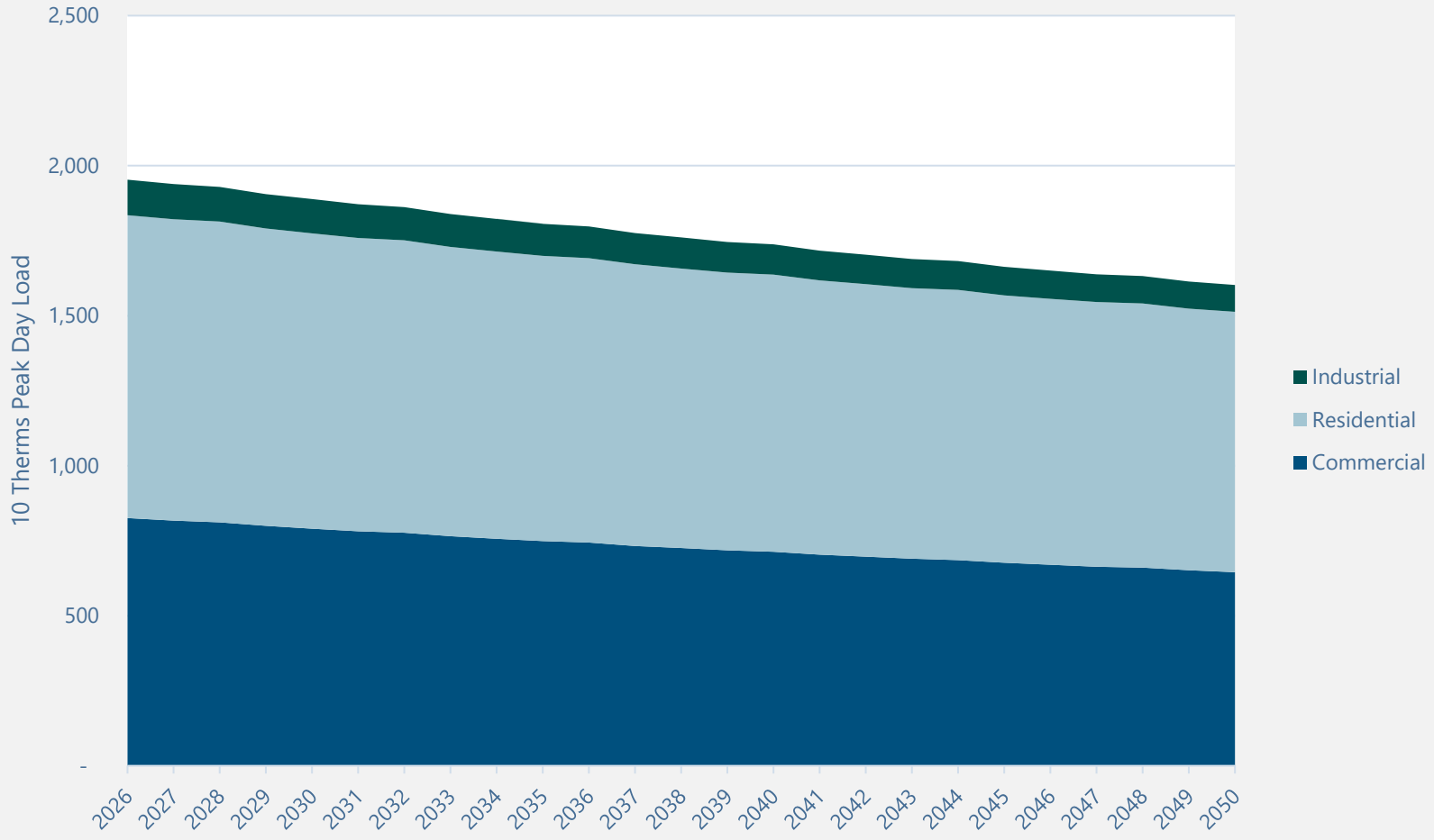
Washington Gas Winter Peak Load Forecast



Discussion / Findings

- Peak defined as top system hour within each mouth
- Top residential winter monthly peak, for space heat, decreased by 13% from 2026 to 2050
- Top commercial winter monthly peak, for space heat, decreased by 20% from 2026 to 2050
- Peak decreases driven primarily by electrification

Washington Winter Monthly Gas Peak Load Forecast



Discussion / Findings

- Commercial 2050 peak load decreased by 22% compared to 2026
- Residential 2050 peak load decreased by 14% compared to 2026
- Industrial 2050 load decreased by 24% compared to 2026
- Commercial and residential trends driven by electrification

Thank You

Next Meeting: April 20

Draft Energy Efficiency Potential Estimates

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AVISTA

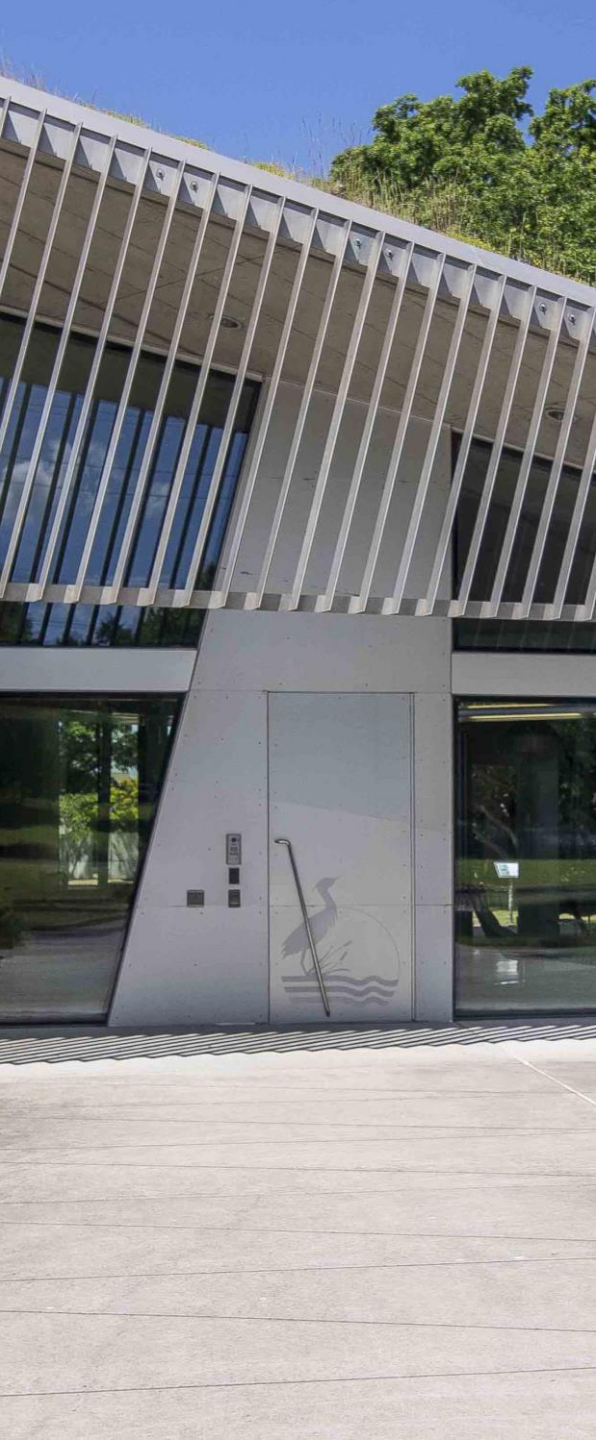
CADMUS

Avista Natural Gas Energy Efficiency Savings

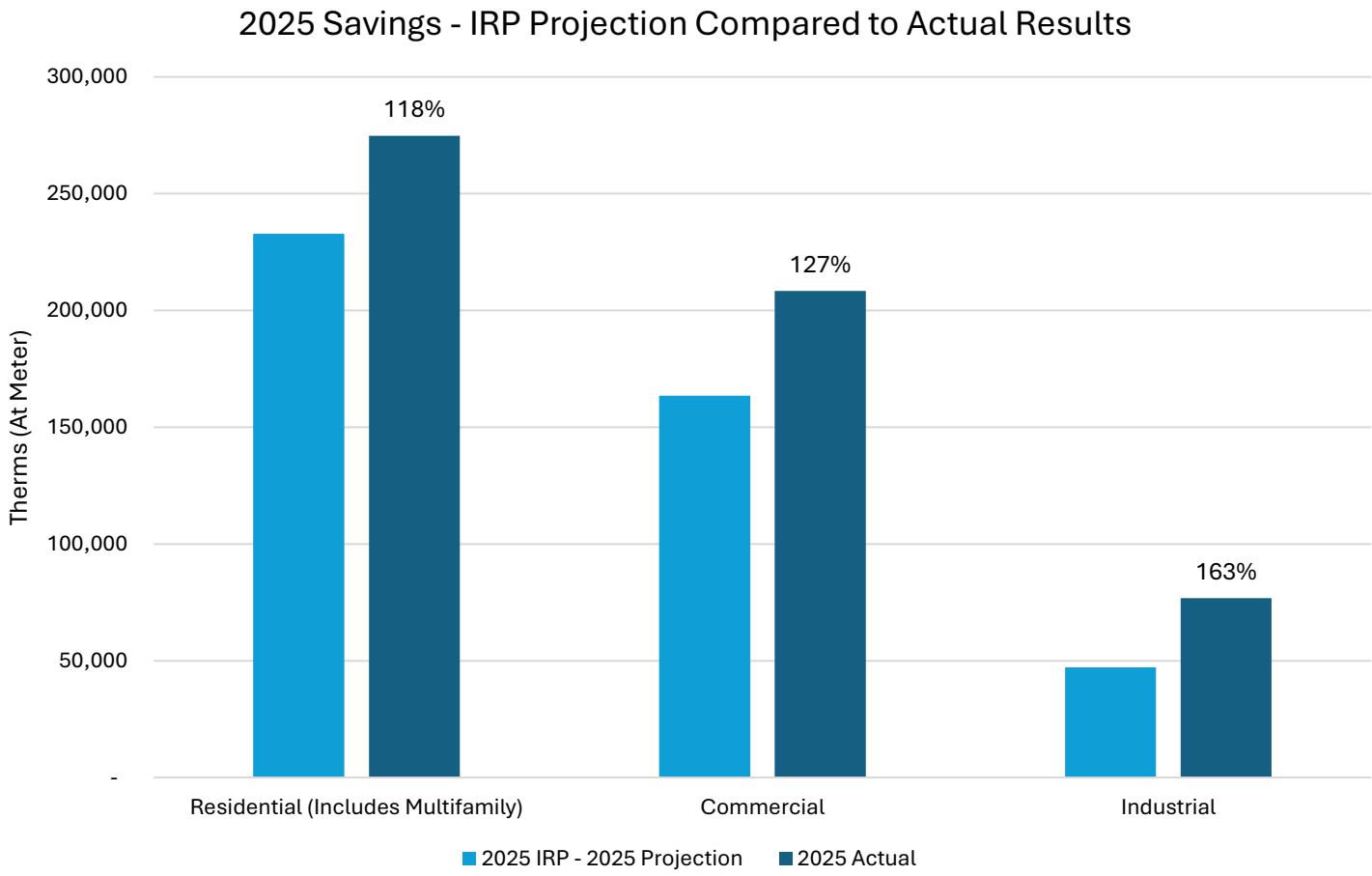
Since 2025 IRP

April 2026

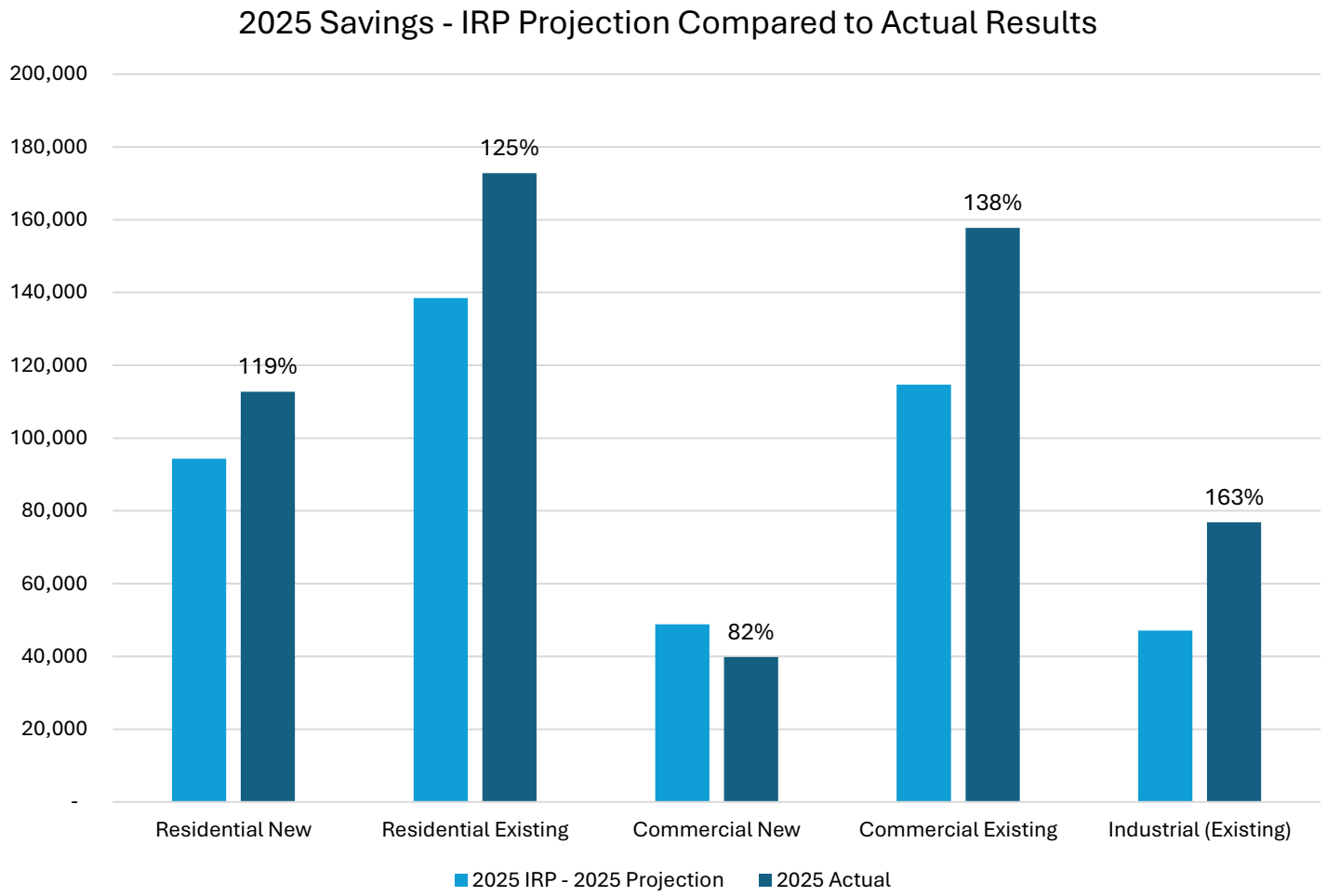
Energy Trust of Oregon



Savings by Sector



Savings by Sector & Building Type

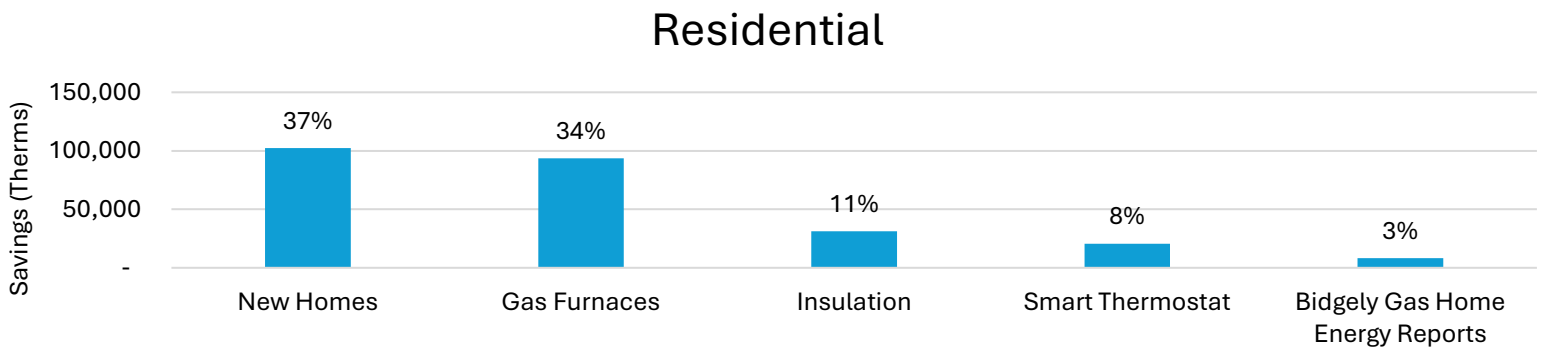


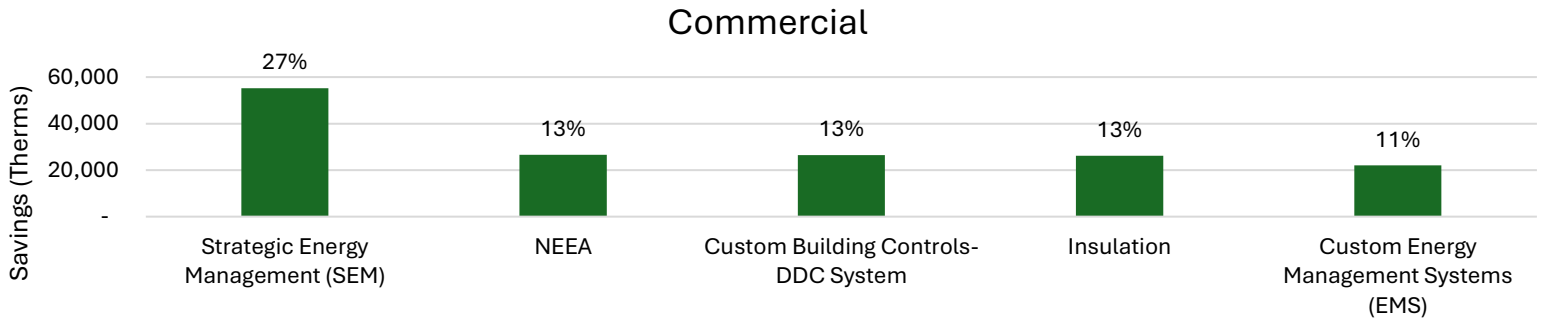
Savings by Program Track

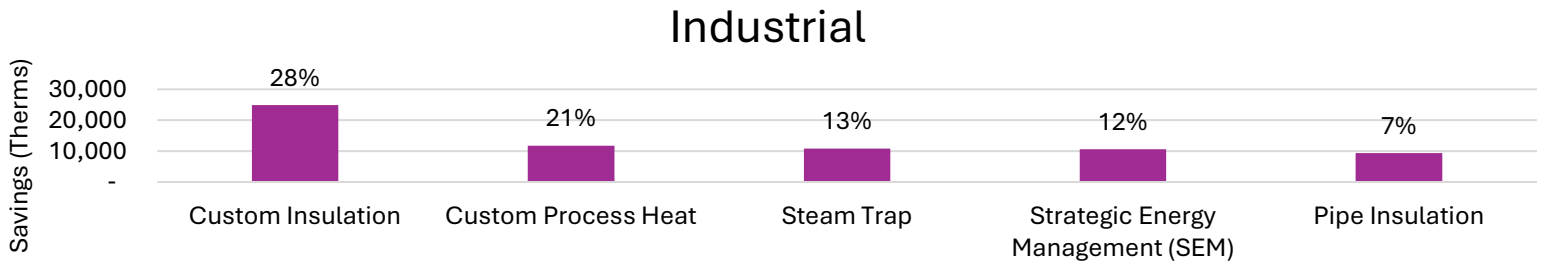
	Program Track	2025 – IRP Projection	2025 Actual	2025 Actual - % of IRP Projection
Residential New	New Manufactured Homes	1,838	7,459	406%
	New Single-Family Homes*	92,526	105,255	114%
Residential Existing	Smart Thermostats	11,836	20,014	169%
	Thermostat Optimization	933	1,310	140%
	Water Heating	2,844	3,914	138%
	Shell	65,087	32,239	50%
	Space Heat	50,421	95,439	189%
	Existing Multifamily	7,340	11,575	158%
	Home Energy Reports	-	8,332	-
Commercial New	New Buildings*	48,785	39,823	54%
Commercial Existing	Strategic Energy Management (SEM)	14,816	53,984	364%
	Non-SEM	99,840	103,759	104%
Industrial (Existing)	SEM	667	10,612	1592%
	Non-SEM	46,457	66,198	142%
	Total	**443,388**	**559,913**	**126%**

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

Top Measures

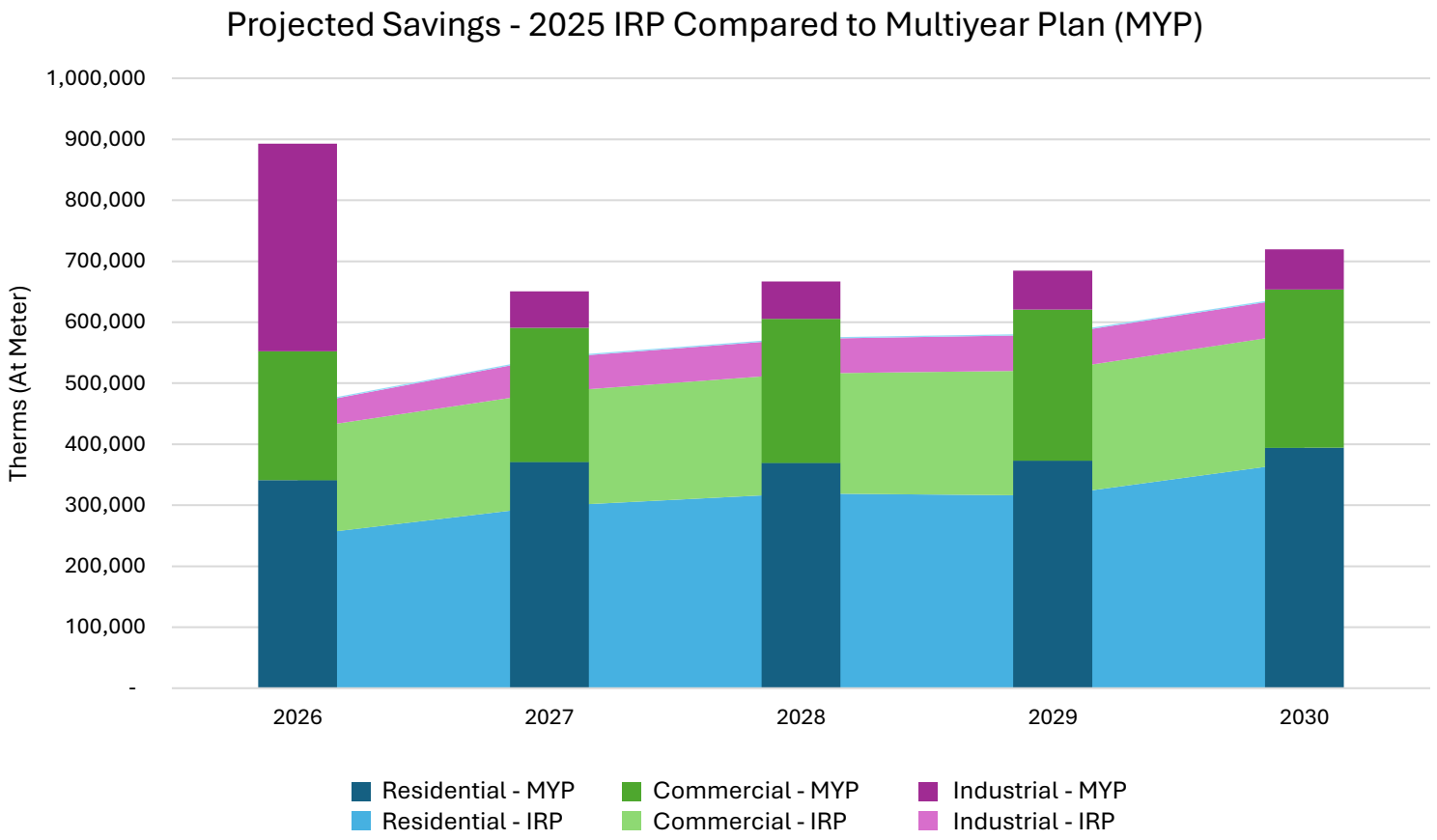




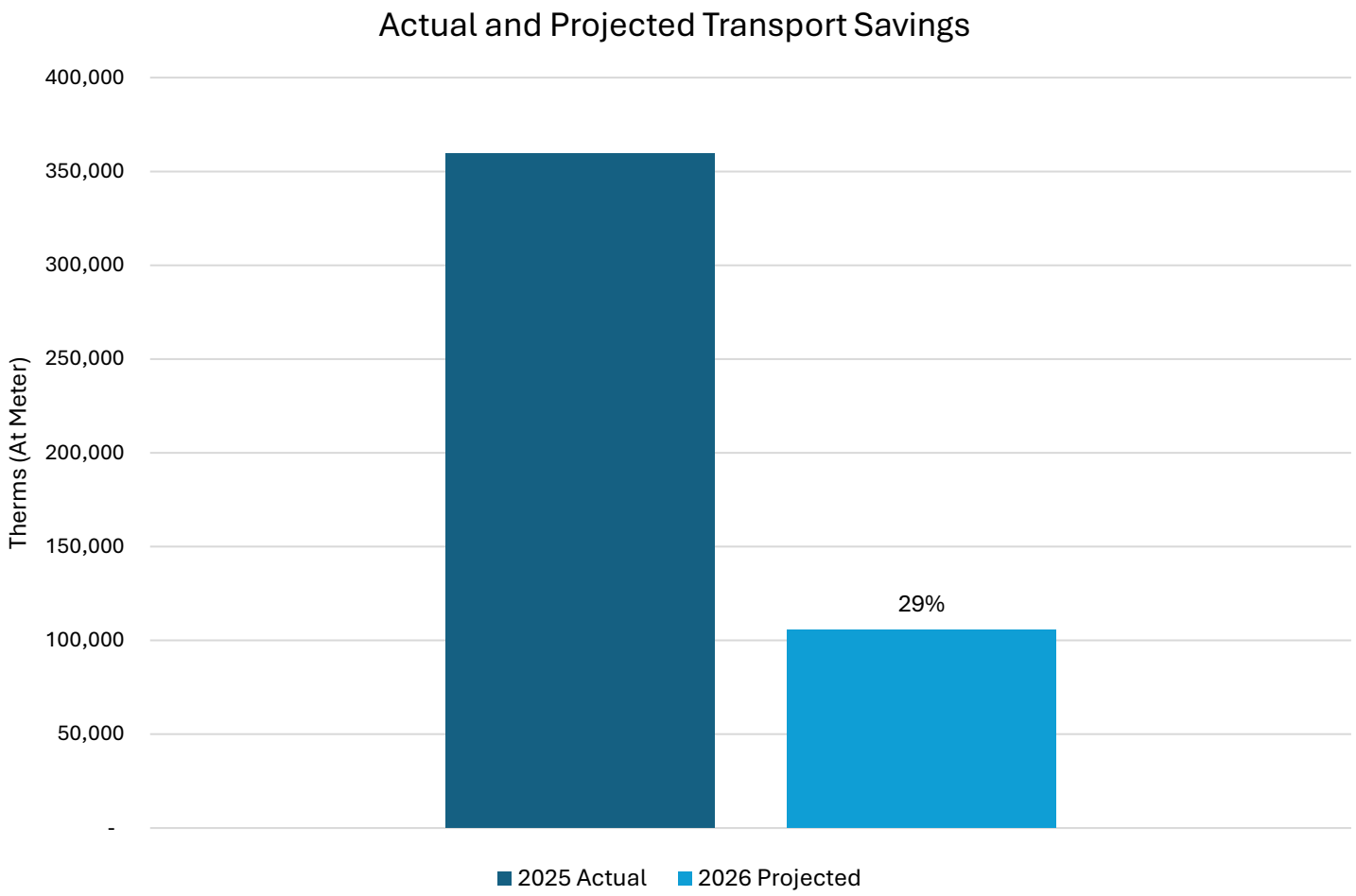


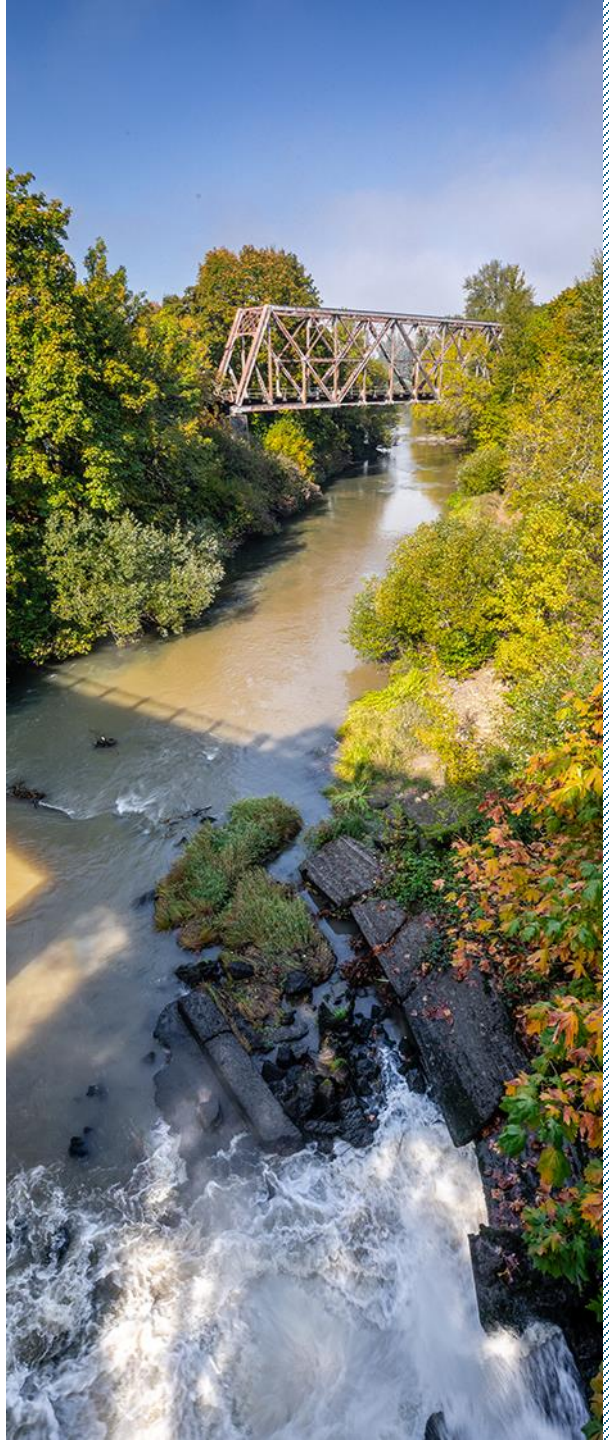
**Please note that each chart utilizes a different scale*

Projected Savings



Transport Savings





Questions?

Willa Perlman, Planning Analyst

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Energy Trust of Oregon

Energy Trust Dual-Fuel Heat Pump Pilot Update

Implementation & Evaluation

April 2026

Energy Trust of Oregon

Definition of Dual Fuel HVAC

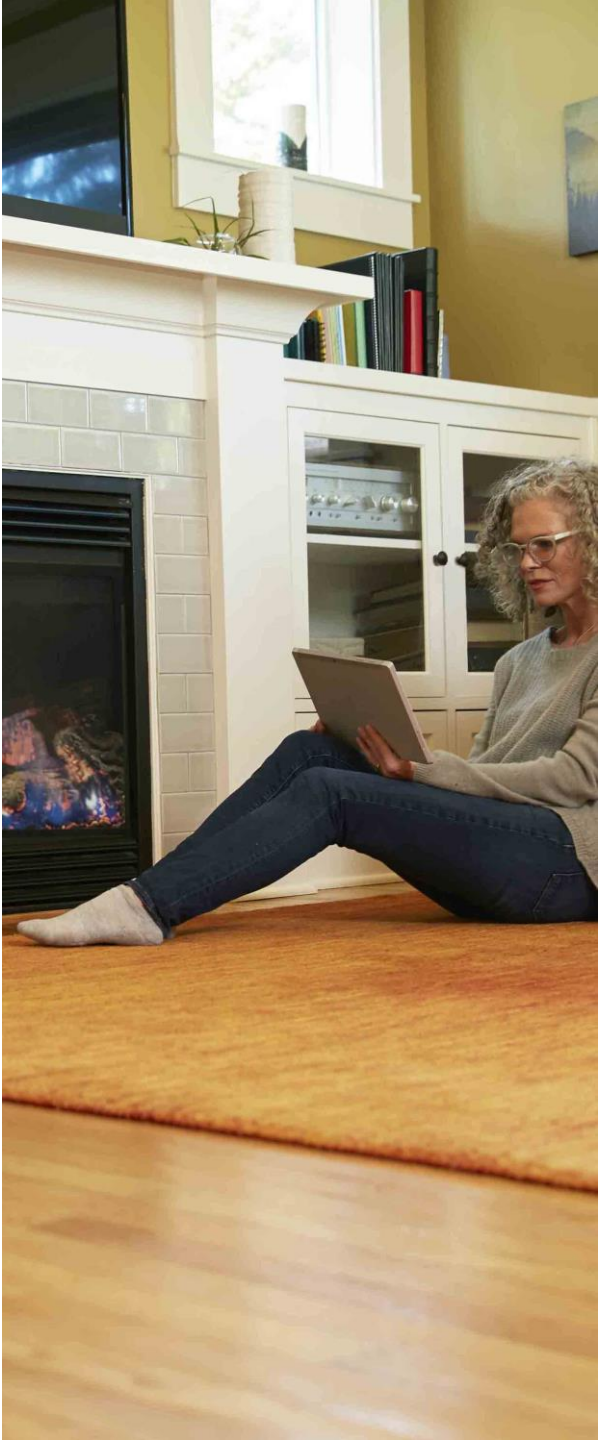
- For this pilot, a dual fuel HVAC system is a ducted heat pump and programmable thermostat added to an existing gas furnace.
- The pilot application is single-family homes without (working) air conditioning and with gas furnaces that are 1-10 years old on average.
  - Homes have been previously weatherized
  - Homes do not have deferred maintenance that would prohibit successful installation or operation of HVAC system
  - Homes do not need major duct repair
  - Homes do not need major electrical service upgrades such as a new panel or braker box

Pilot Description

- Energy Trust to pay full cost of installs, up to $12,000
- Installation contractors selected through RFQ projects awarded on a rolling basis
- Pilot participant solicitation and house triage conducted by Energy Trust
- If home qualifies, installation contractor provides bid, if bid is approved, installation occurs
- Post install QA provided by Energy Trust in every home
- Customer education provided by Energy Trust

Participant Tracker

	NWN	CNG	AVI	Total
Marketing Emails Sent	2474	518	4710	7321
Marketing Mailers Sent	681	393	3396	4470
Applications	135	77	101	313
Did Not Qualify from Application	36	45	60	141
Phone Screens	99	32	41	171
Did Not Qualify from Phone Screen	45	10	30	85
Site Visits	54	22	11	87
Did Not Qualify from Site Visit	16	3	6	25
Submitted To Contractor	40	19	5	64
Not Installed After Contractor Visit	2	0	0	2
Installed	38	19	5	62



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

Customer Findings

Customer Value Perspective (n=28)

Most frequently mentioned benefits:

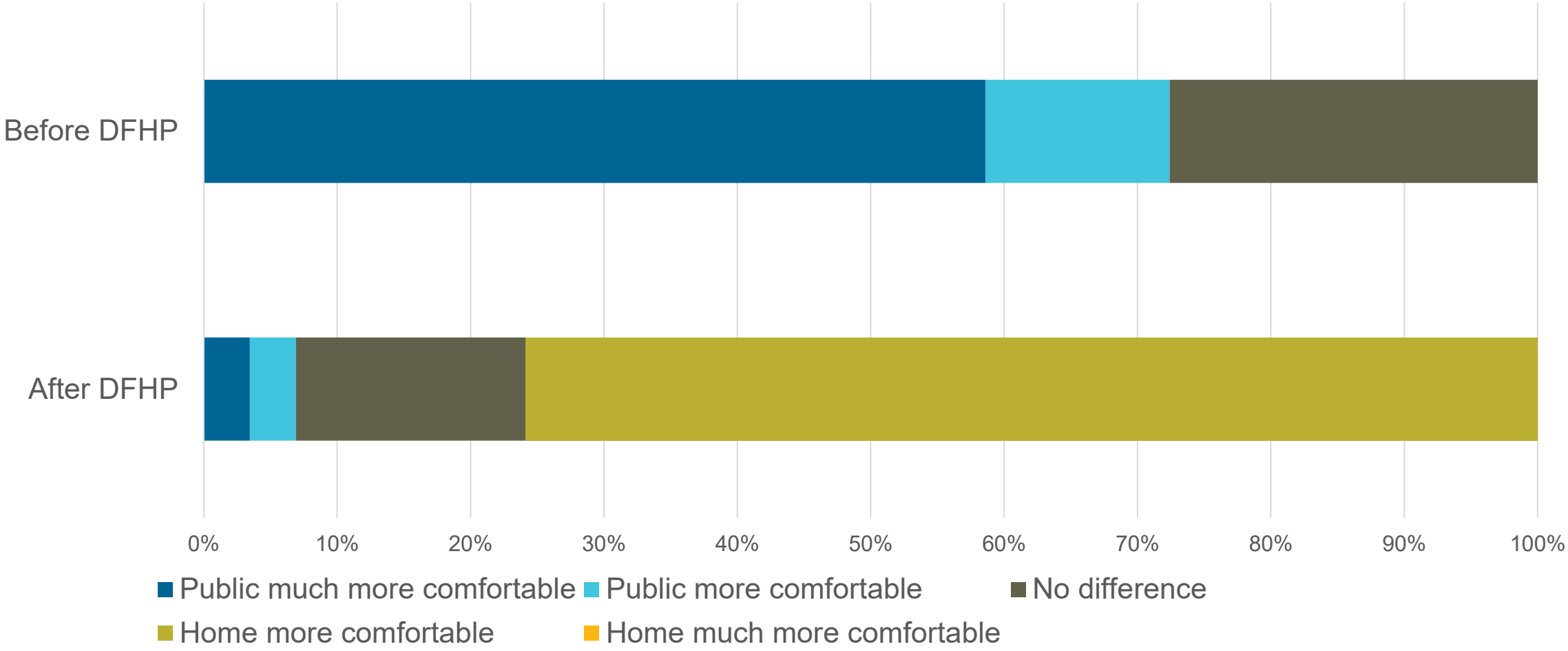
- Central cooling (92%)
- Improved health (60%)
- Lower bills (28%)

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

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

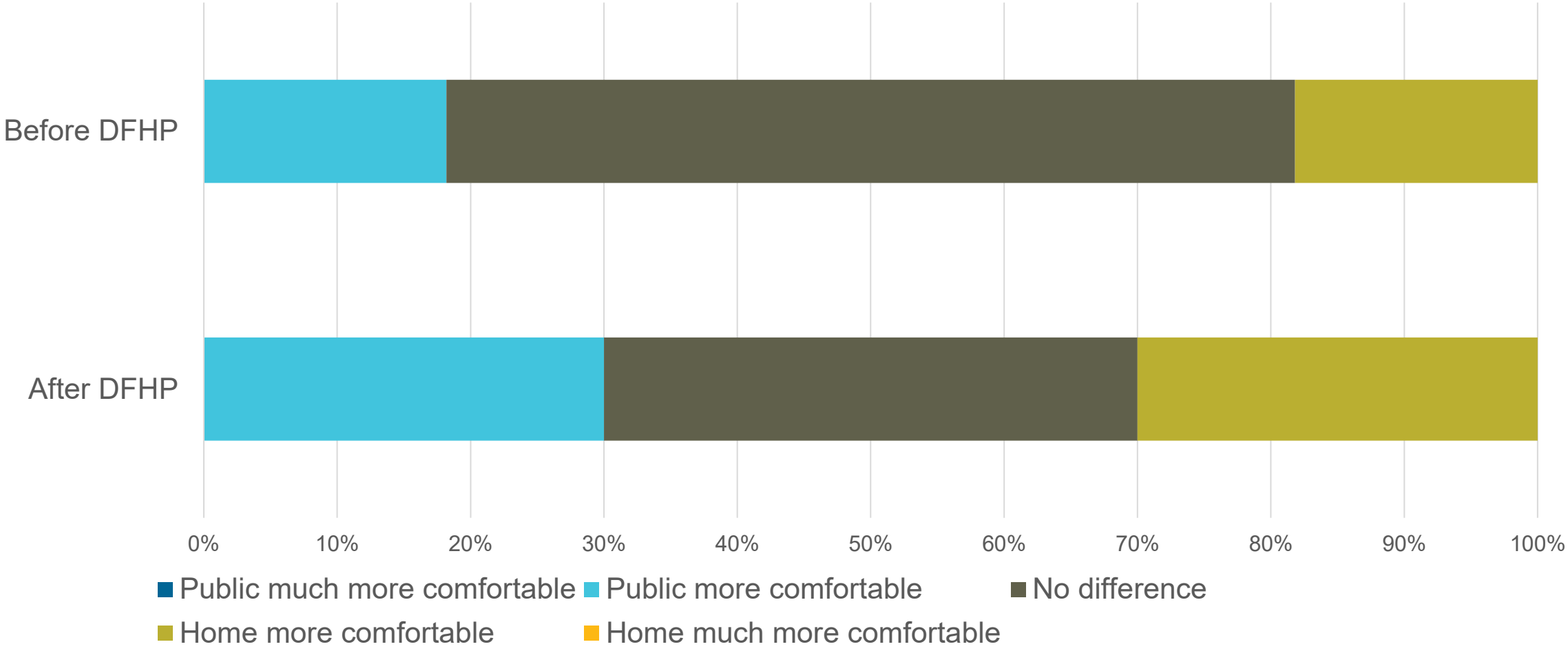
Customer Summer Comfort Levels (n=29)

Compared comfort of their home to an accessible public space



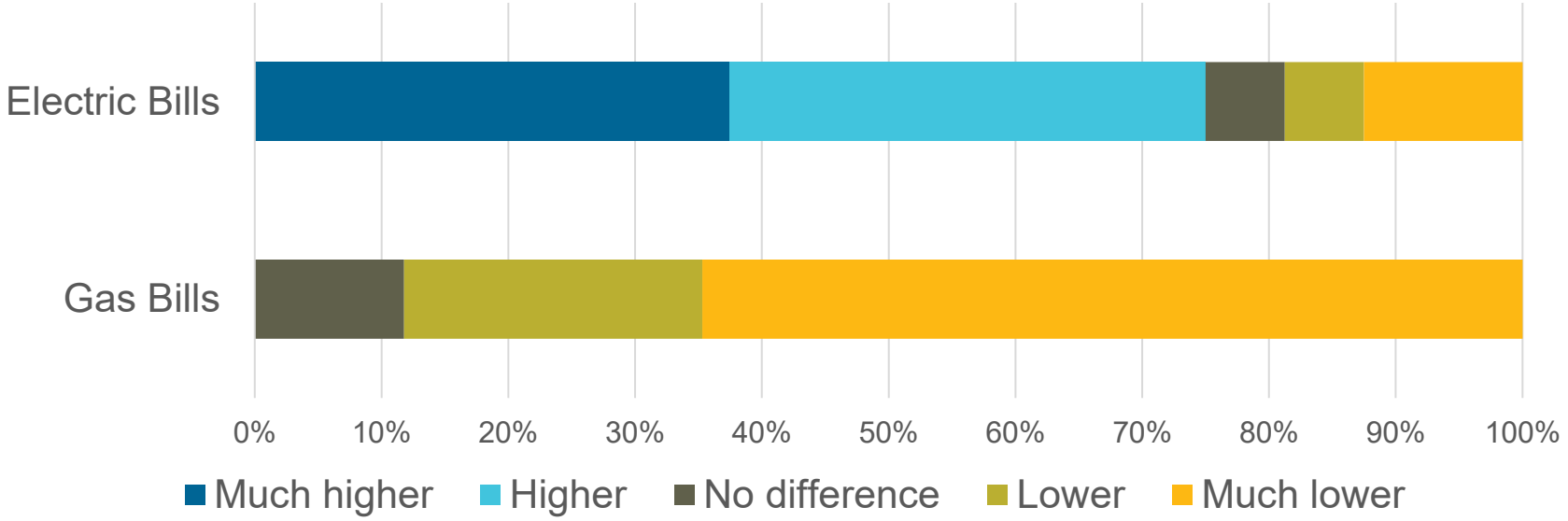
Customer Winter Comfort Levels (n=11)

Compared comfort of their home to an accessible public space

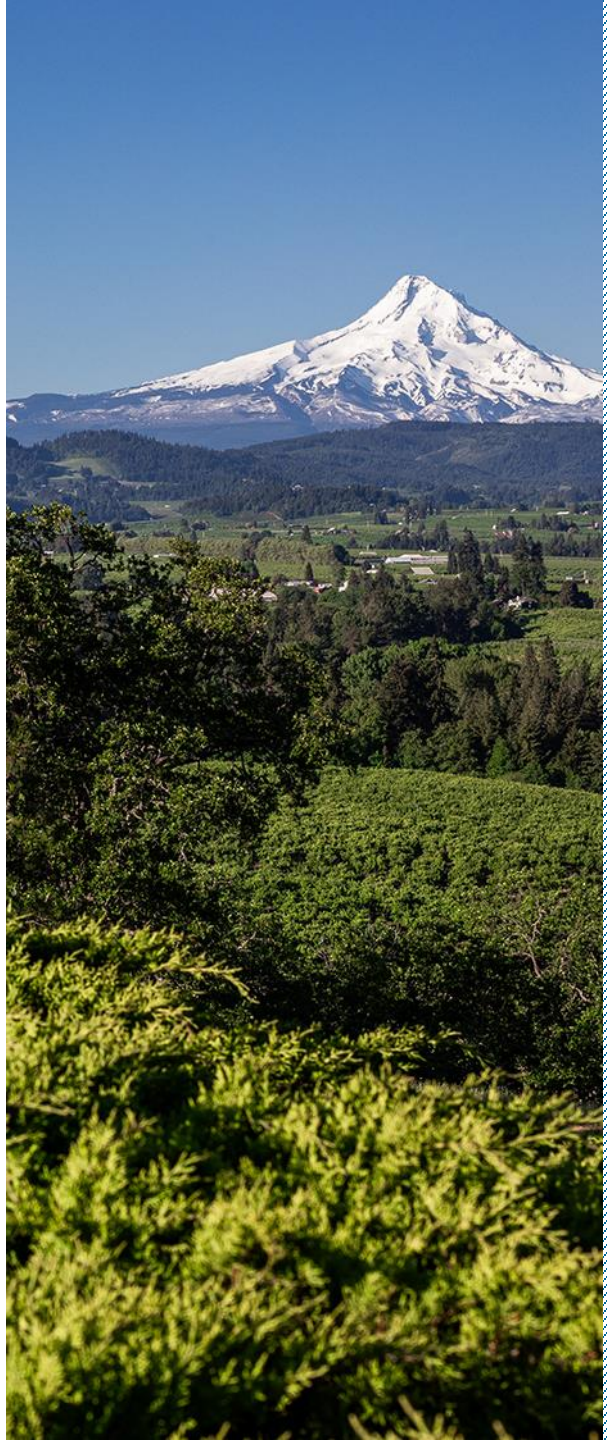


Customer Cost Perspectives (n=17)

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

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

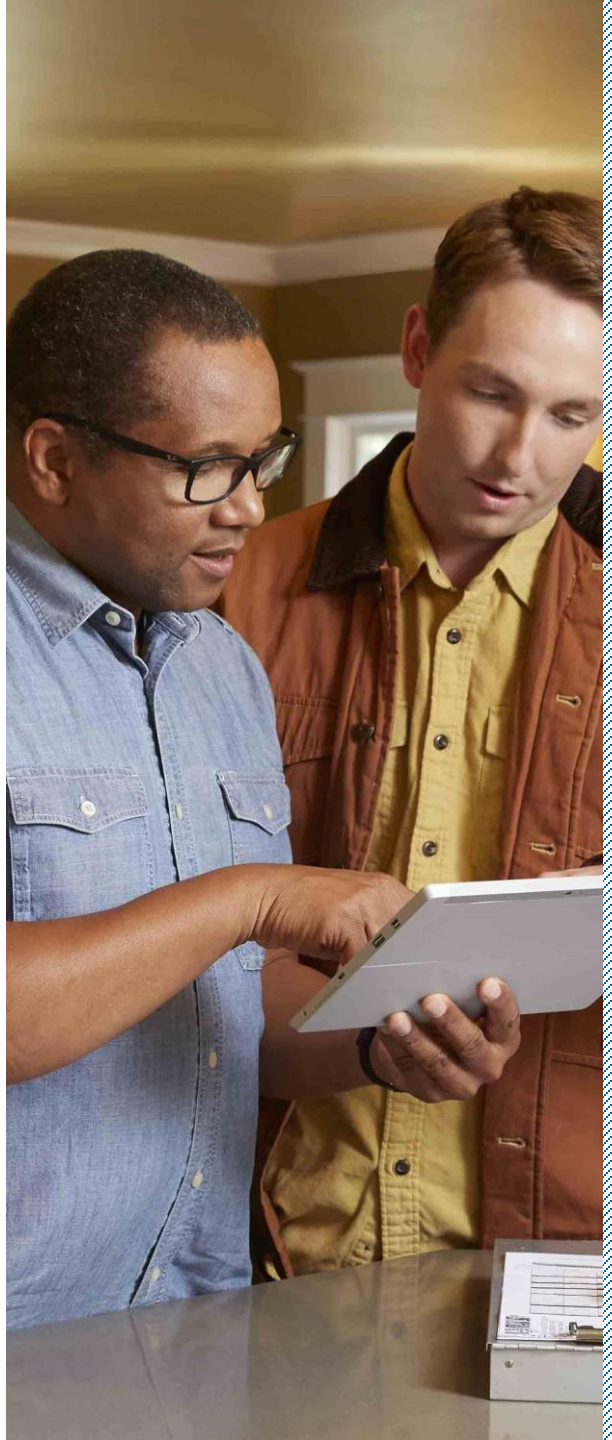
- Estimate that DFHPs are typically $1.5k more expensive than a traditional air conditioning system

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

DFHPs offer a heat pump solution while retaining the backup combustion fuel

- More viable option for delivered fuel customers
- More practical for low-temperature winter weather
- More customizable configuration to maximize bill savings

Questions?

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Energy Trust of Oregon