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2027 Electric and Natural Gas Integrated Resource Plans

Technical Advisory Committee Meeting No. 15 Agenda

Wednesday, November 18, 2026

Virtual Meeting – 1:00 pm to 4:00 pm Pacific Time

Topic	State	Audience
• Introduction and Questions from TAC 14		
• Final Gas PRS	All	Gas
• Scenario Analysis	All	Gas
• Avoided Cost	All	Gas
• Idaho EE Analysis	ID	Gas
• 2027 Gas IRP Document Outline	All	Gas
• Action Items	All	Gas

Microsoft Teams meeting
Join: https://teams.microsoft.com/meet/240327933058469?p=ffvvXXEw61zULO3Cxm
Meeting ID: 240 327 933 058 469
Passcode: Ni7AH3Ed

Need help? | System reference
Dial in by phone
+1 509-931-1514,,328694578# United States, Spokane
Find a local number
Phone conference ID: 328 694 578#
For organizers: Meeting options | Reset dial-in PIN

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Introductions 2027 Electric & Gas Integrated Resource Planning

TAC 15 – November 18, 2026

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

TAC 15 Agenda

- Introduction and Questions from TAC 14
- Final Gas PRS
- Gas Scenario Analysis
- Gas Avoided Cost
- Idaho Gas Energy Efficiency Analysis
- 2027 Gas IRP Document Outline
- Action Items

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

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TAC 16 – If Needed Thursday, January 14, 2027 (1:00 – 4:00 pm PDT)		
Topic	**State**	**Audience**
TBD If Necessary	TBD	TBD

Other Key 2027 IRP Dates

- December 2, 2026 – Virtual Public Meeting
  - 7:30 am: https://us02web.zoom.us/meeting/register/sSMILx1XRG6xQQQraWJUEw#/registration
  - 12:00 pm: https://us02web.zoom.us/meeting/register/AbAOm4vFT8amfzyD-BtBNA#/registration
- 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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Natural Gas 2027 IRP Final Gas PRS

TAC 15 – November 18, 2026

Michael Brutocao, Natural Gas Planning Manager

2027 IRP Final Gas PRS

- Analysis will include information as found throughout the Scenario Analysis slides
- Information will be broken down into more granular detail than that of the Scenario Analysis slides
- Additional information beyond what is on the Scenario Analysis slides will be presented

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Natural Gas Scenario Analysis

TAC 15 – November 18, 2026

Michael Brutocao, Natural Gas Planning Manager

Demand-Influencing

Hybrid Heating
Gas customers electrify water heaters and add electric heat pumps to furnaces (80% by 2050)

Appliance Replacement
Gas appliances transition to electric upon failure, based on the Cadmus system load forecast

No New Customers After 2030
No new gas customers added in Idaho, Oregon, or Washington

Perfect Storm
High electrification, 95th percentile of Monte Carlo price draws for natural gas, *alternative fuels, and **compliance mechanisms

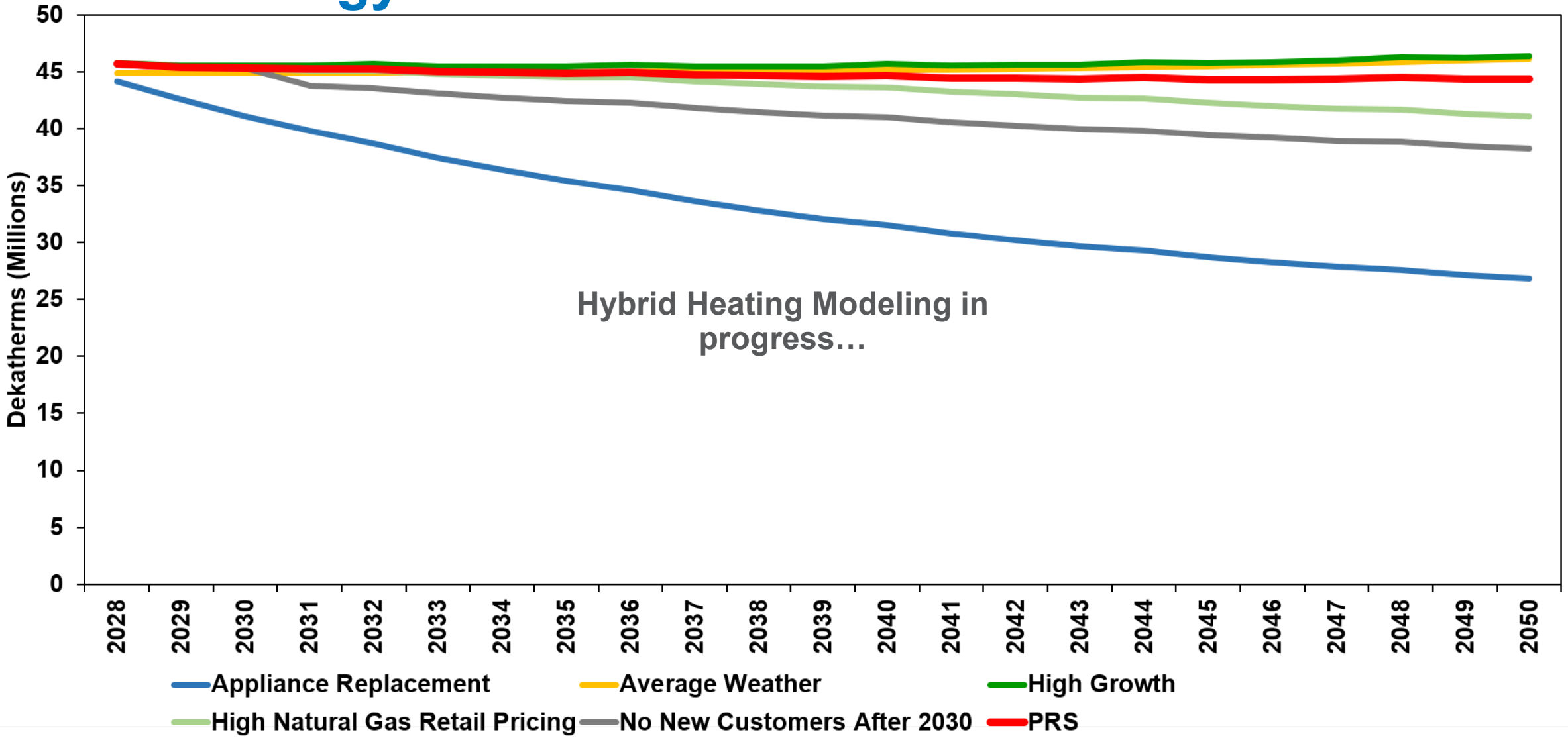
High Natural Gas Retail Pricing
High retail pricing accelerates gas usage reduction

High Growth
System loads grow at higher annual average growth rate

Average Weather
20-year average daily weather; no peak days

*High Renewable Resource Costs (50% higher CapEx by 2030)
**High CCA Pricing (Allowance prices trend to ceiling by 2035)

Gross Energy Demand

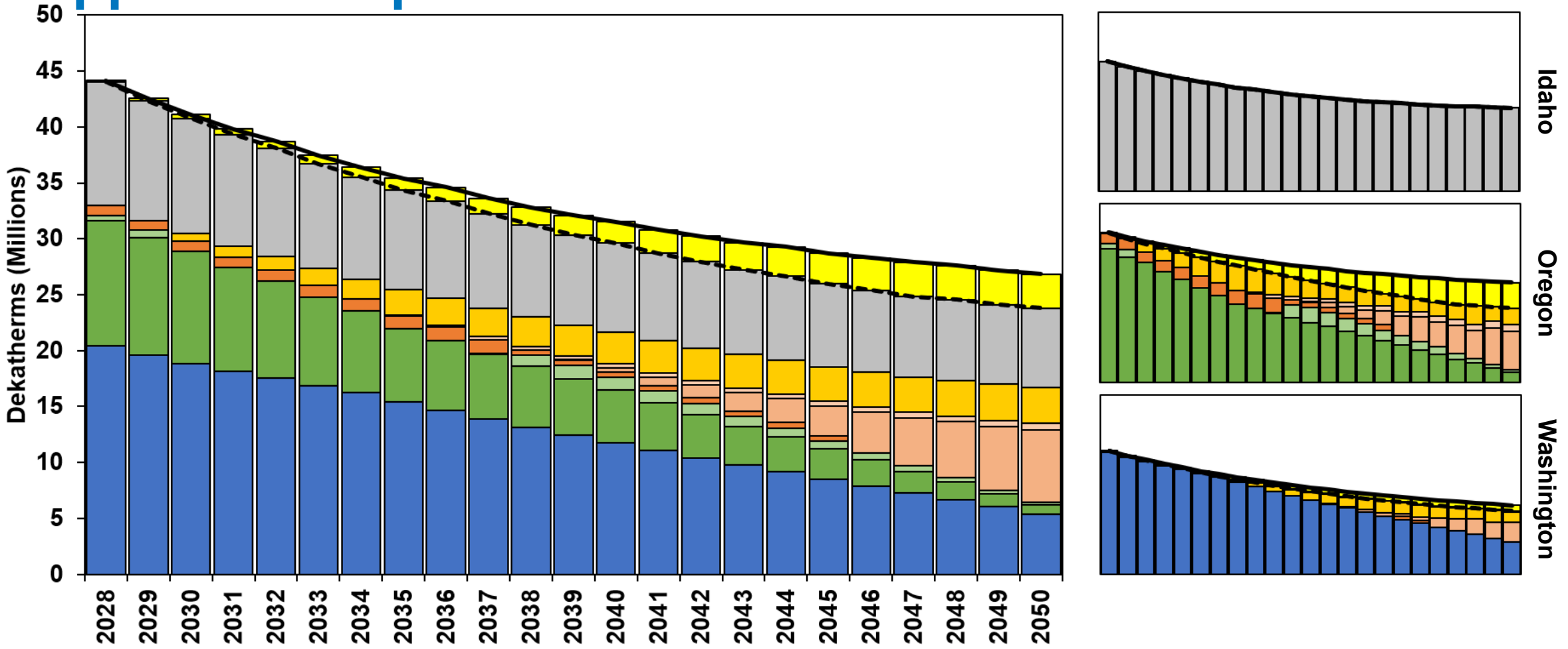


The Perfect Storm scenario utilizes the Appliance Replacement load forecast. All others not shown utilize the PRS.

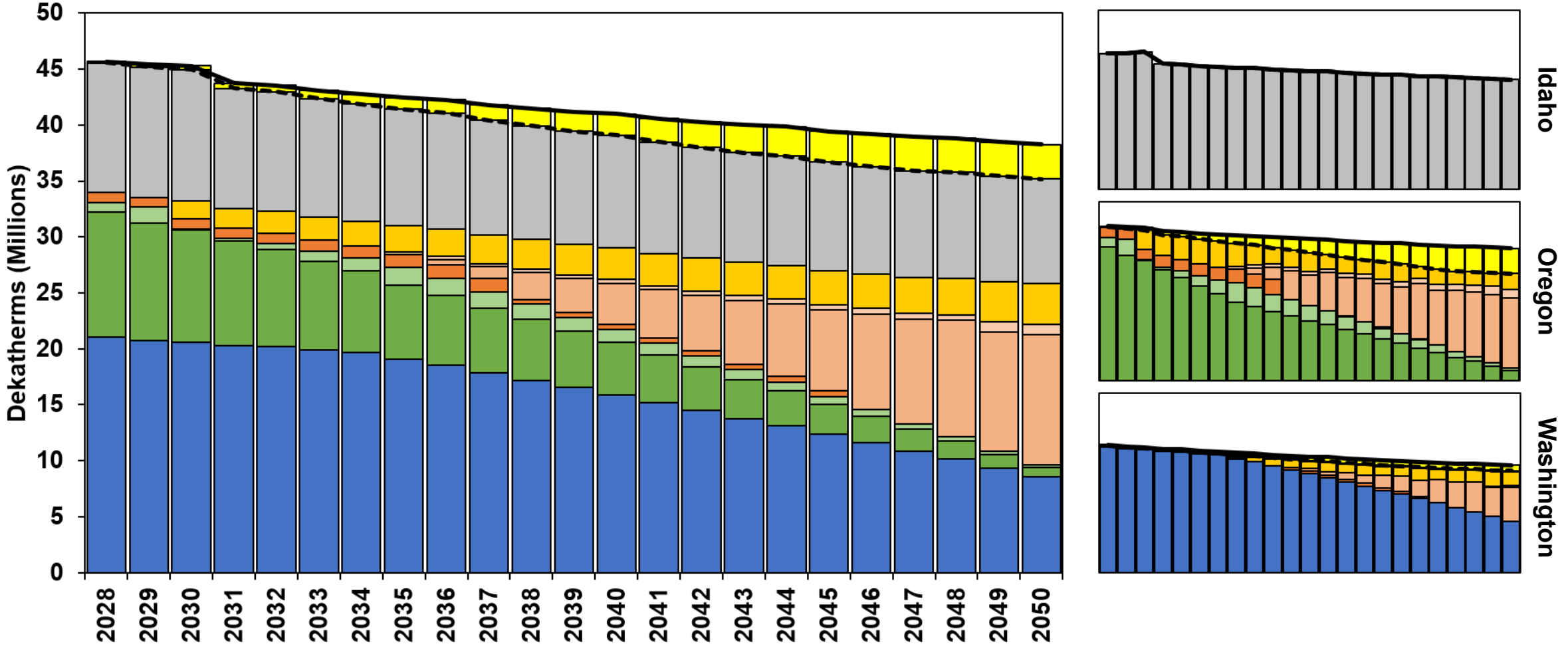
Hybrid Heating

Modeling in progress.

Appliance Replacement



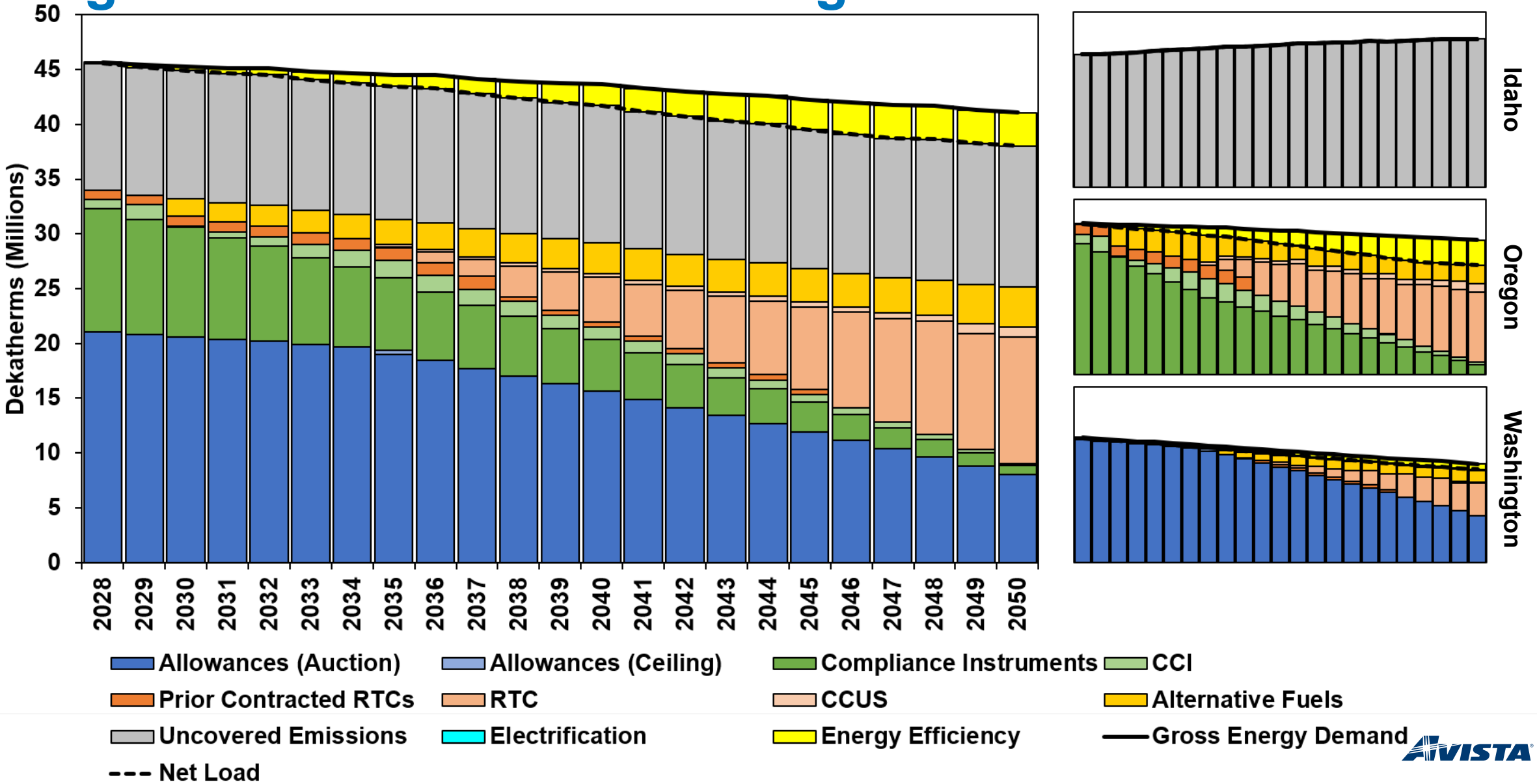
No New Customers After 2030



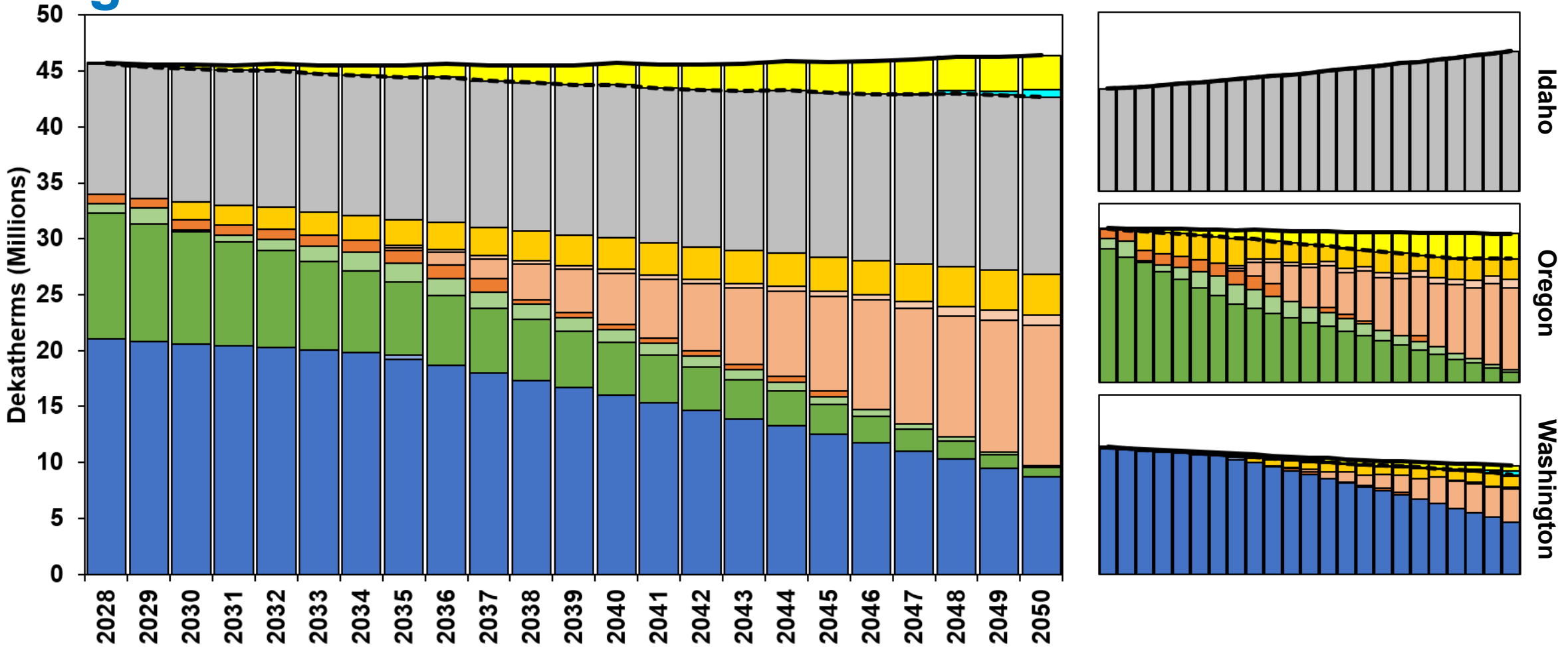
Perfect Storm

Modeling in progress...

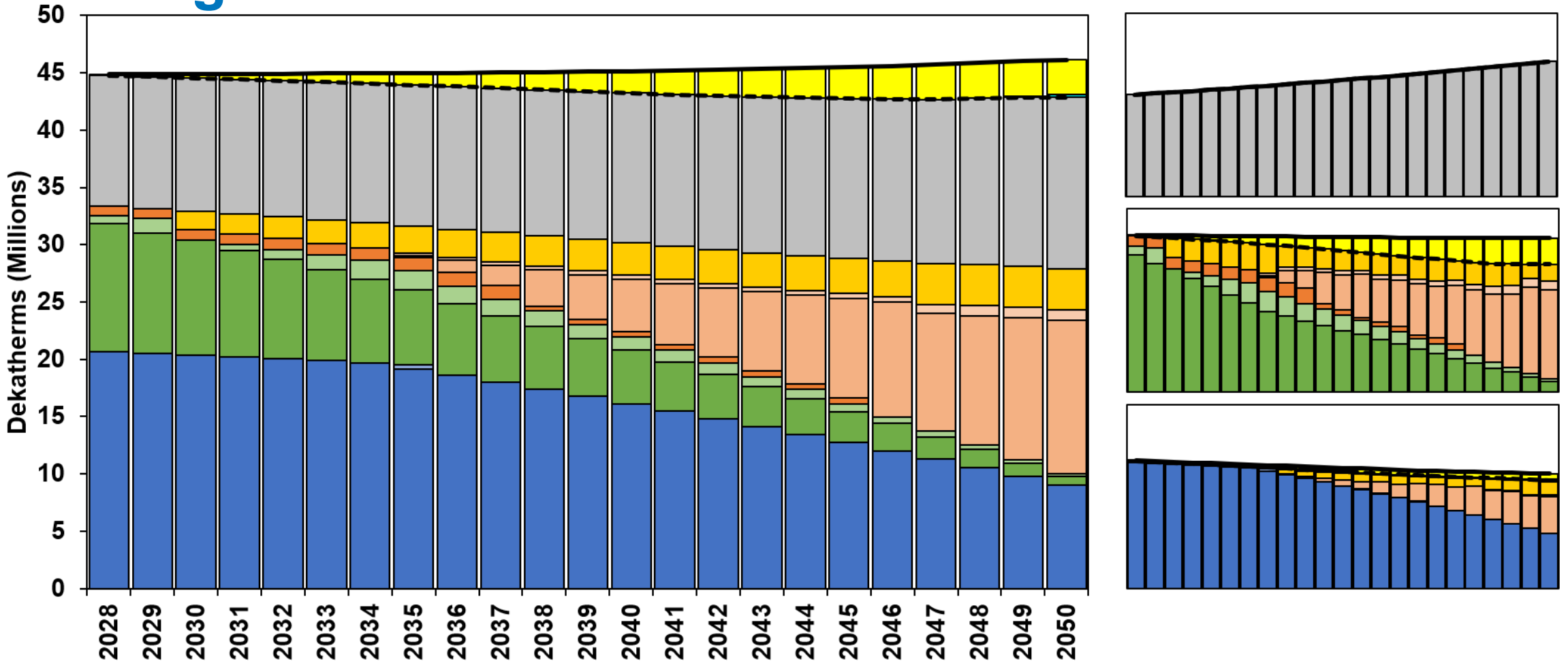
High Natural Gas Retail Pricing



High Growth


Dekatherms (Millions)
50
45
40
35
30
25
20
15
10
5
0
2028
2029
2030
2031
2032
2033
2034
2035
2036
2037
2038
2039
2040
2041
2042
2043
2044
2045
2046
2047
2048
2049
2050
Idaho
Oregon
Washington
Allowances (Auction)
Allowances (Ceiling)
Compliance Instruments
CCI
Prior Contracted RTCs
RTC
CCUS
Alternative Fuels
Uncovered Emissions
Electrification
Energy Efficiency
Gross Energy Demand
Net Load

Average Weather

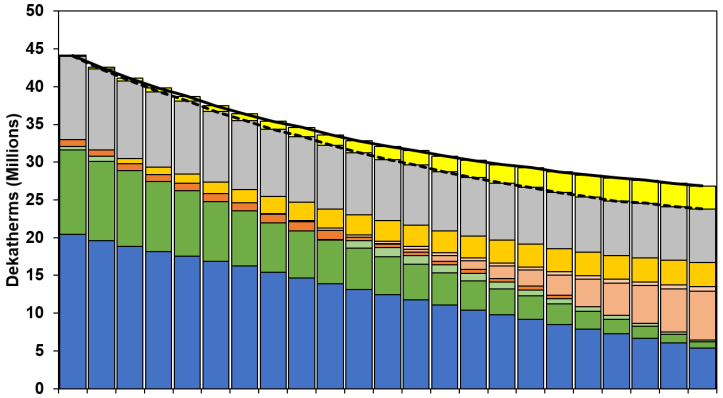


Demand-Influencing

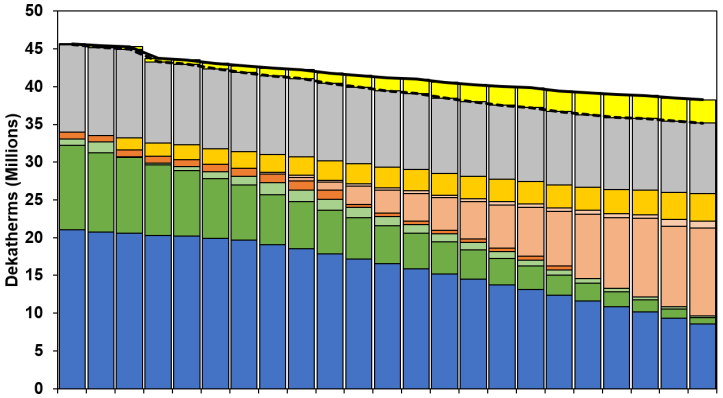
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Modeling in progress...

Hybrid Heating



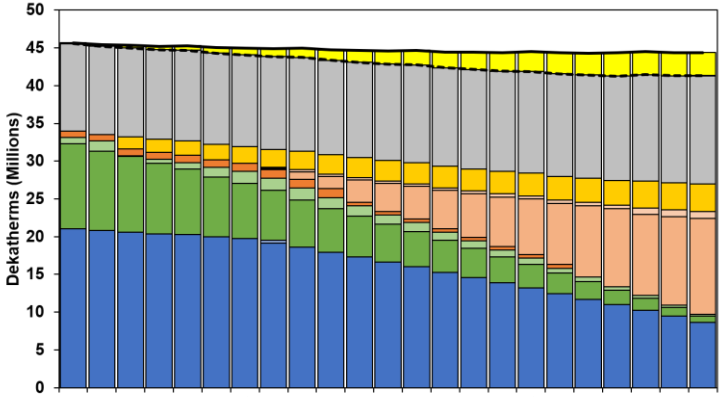
Appliance Replacement



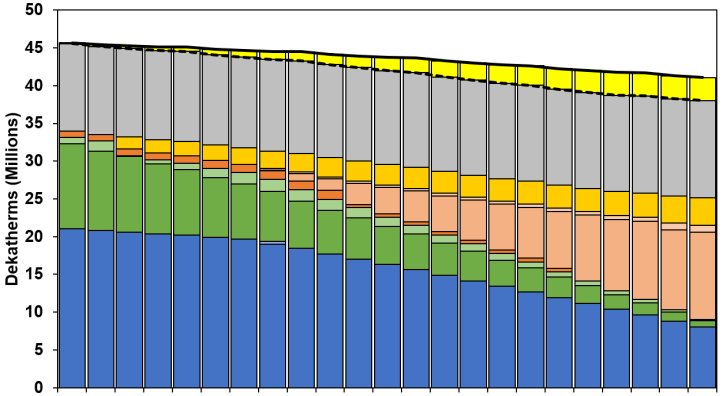
No New Customers After 2030

Modeling in progress...

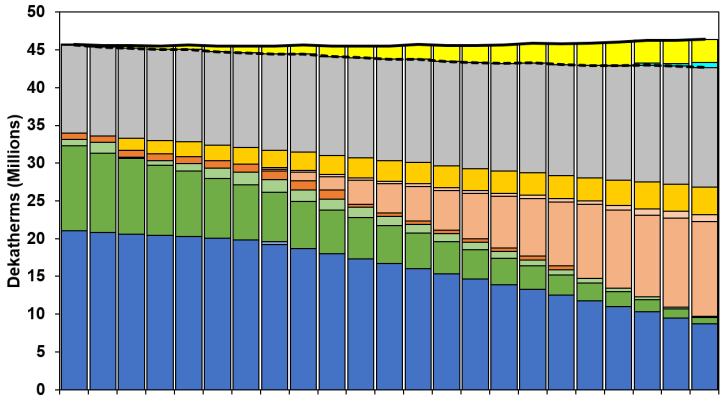
Perfect Storm



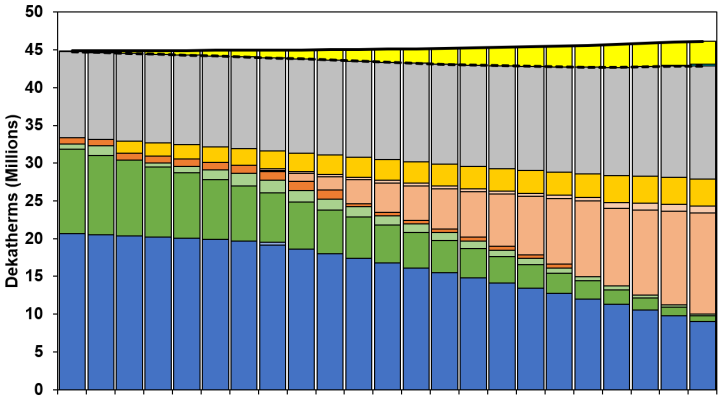
PRS



High Natural Gas Retail Pricing



High Growth



Average Weather

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Non-Demand-Influencing

5% Incremental Cost Cap
Limit annual portfolio cost increases to 5%

No Climate Programs
Counter factual study of if the CCA and CPP end

Zero GHG by 2050
Trend emissions to zero by 2050

Low Renewable Resource Costs
50% lower CapEx by 2030

High Renewable Resource Costs
50% higher CapEx by 2030

IRA Returns in 2030
Renewable energy tax credits return in 2030

High CCA Pricing
Allowance prices trend to ceiling by 2035

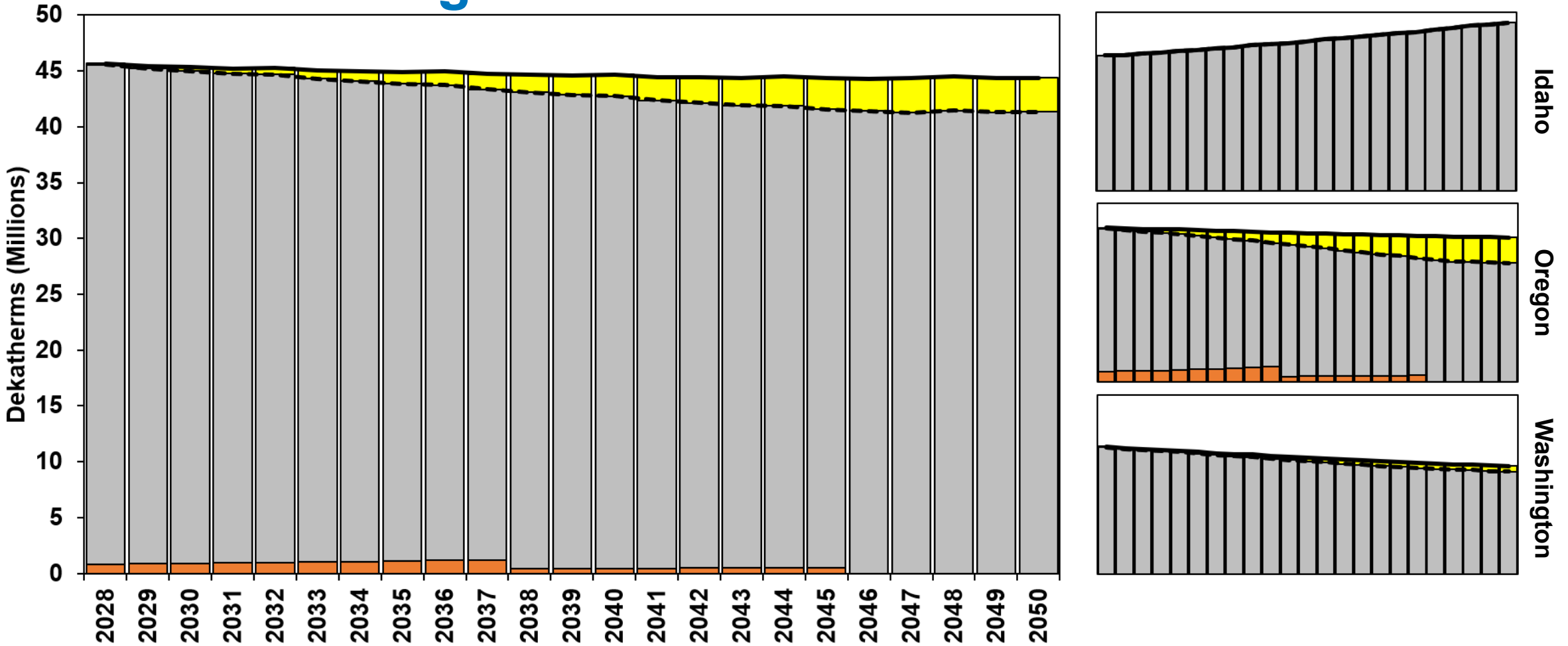
High Natural Gas Prices
95th percentile of Monte Carlo price draws

Social Cost of Greenhouse Gas
SCGHG applied to CO_2 emitting resources in Washington and Oregon

Resiliency
Storage (Jackson Prairie) and pipeline transport capacities experience partial or zero availability for up to one week

No CO_2 Sequestration
CCUS technology is not available

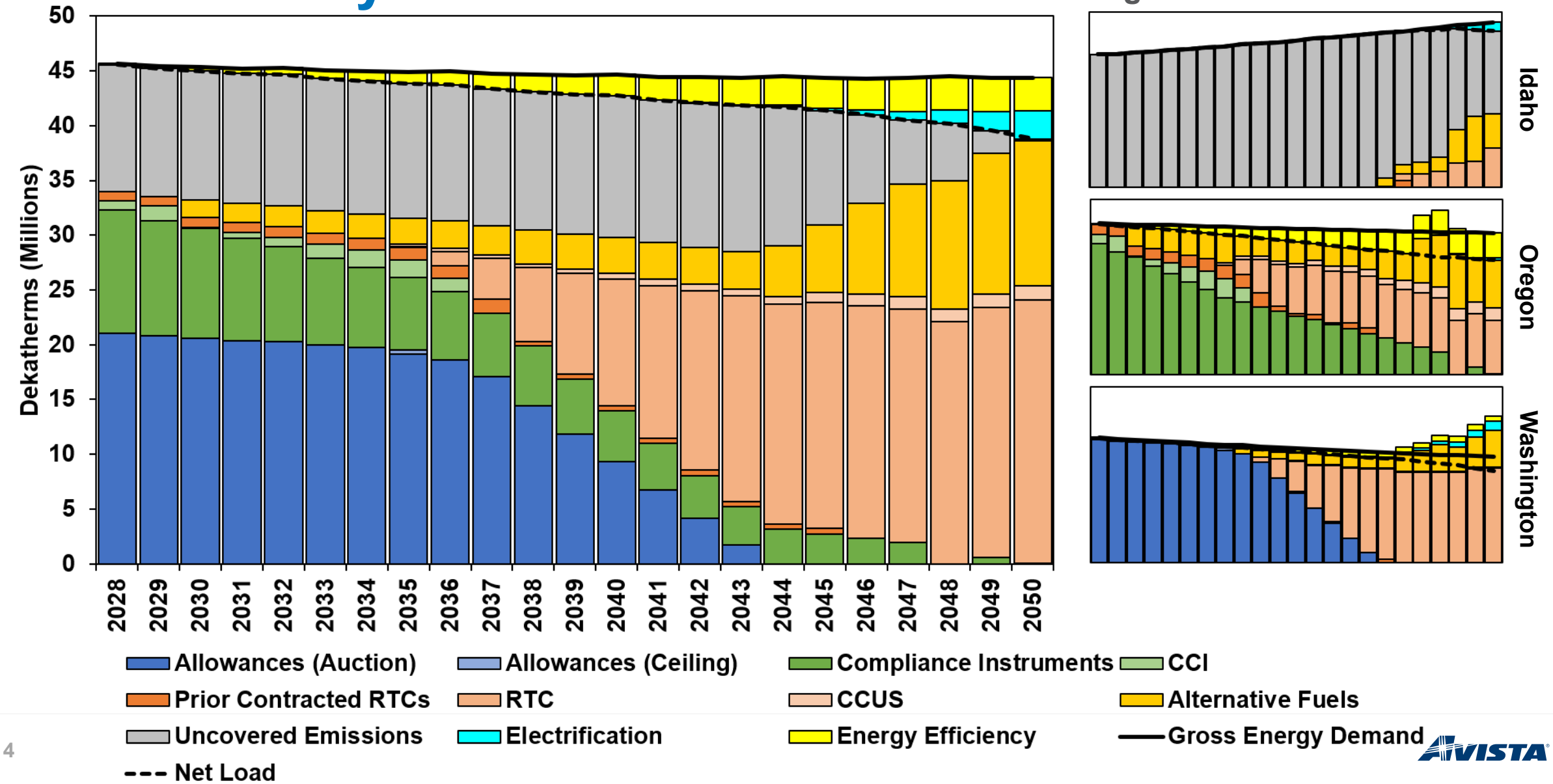
No Climate Programs



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Double counting resources for Oregon and Washington graphs will be fixed for the TAC meeting…

Zero GHG by 2050



Low Renewable Resource Costs

Modeling in progress...

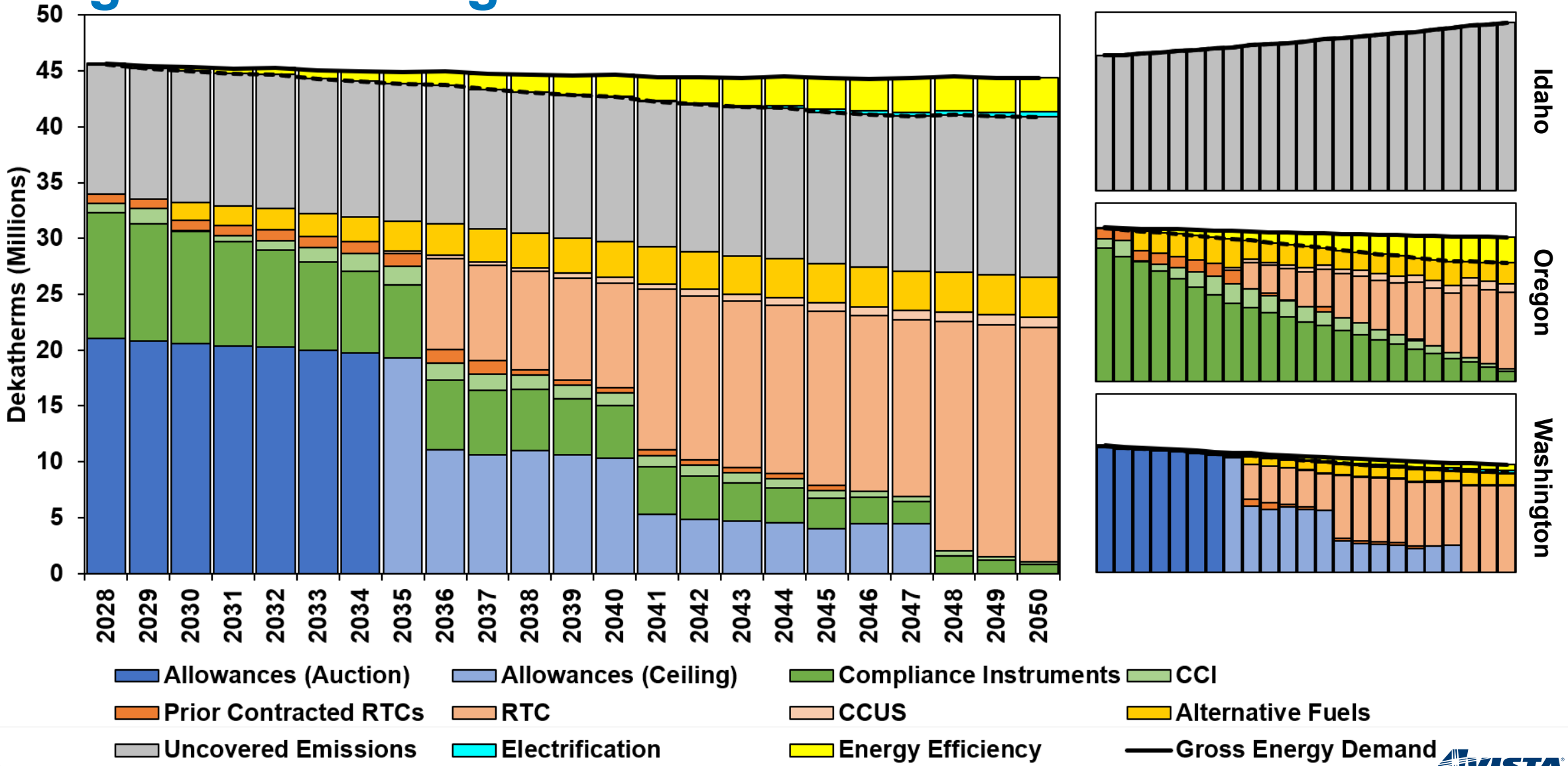
High Renewable Resource Costs

Modeling in progress...

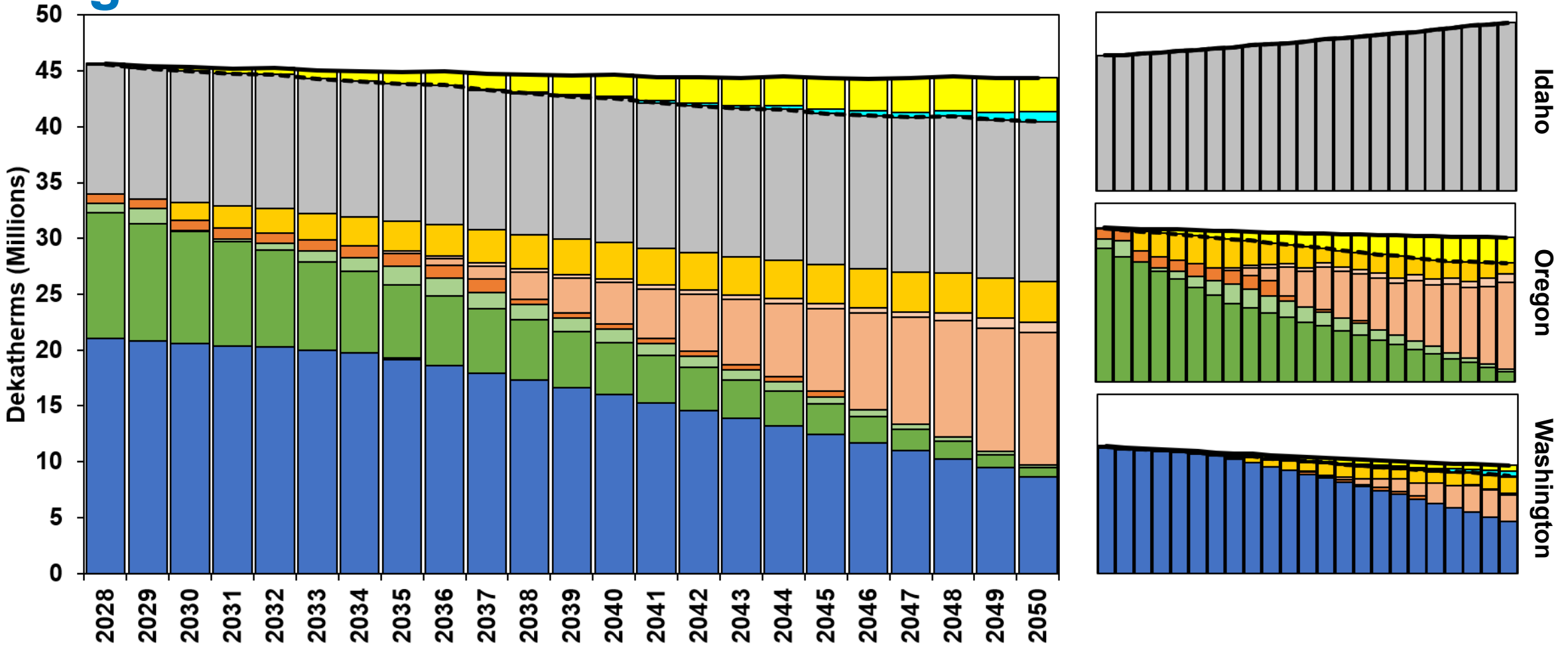
IRA Returns in 2030

Modeling in progress...

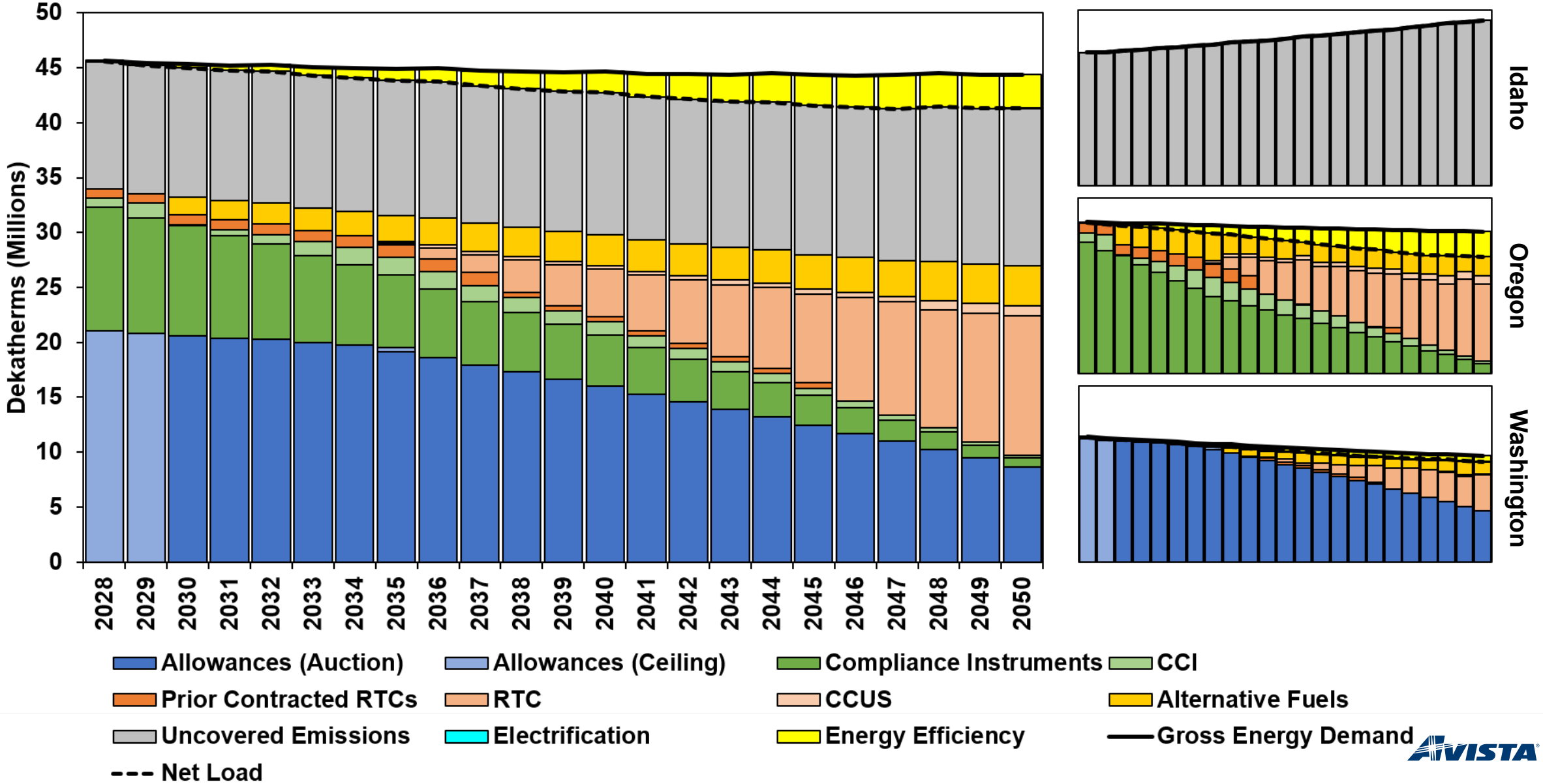
High CCA Pricing



High Natural Gas Prices



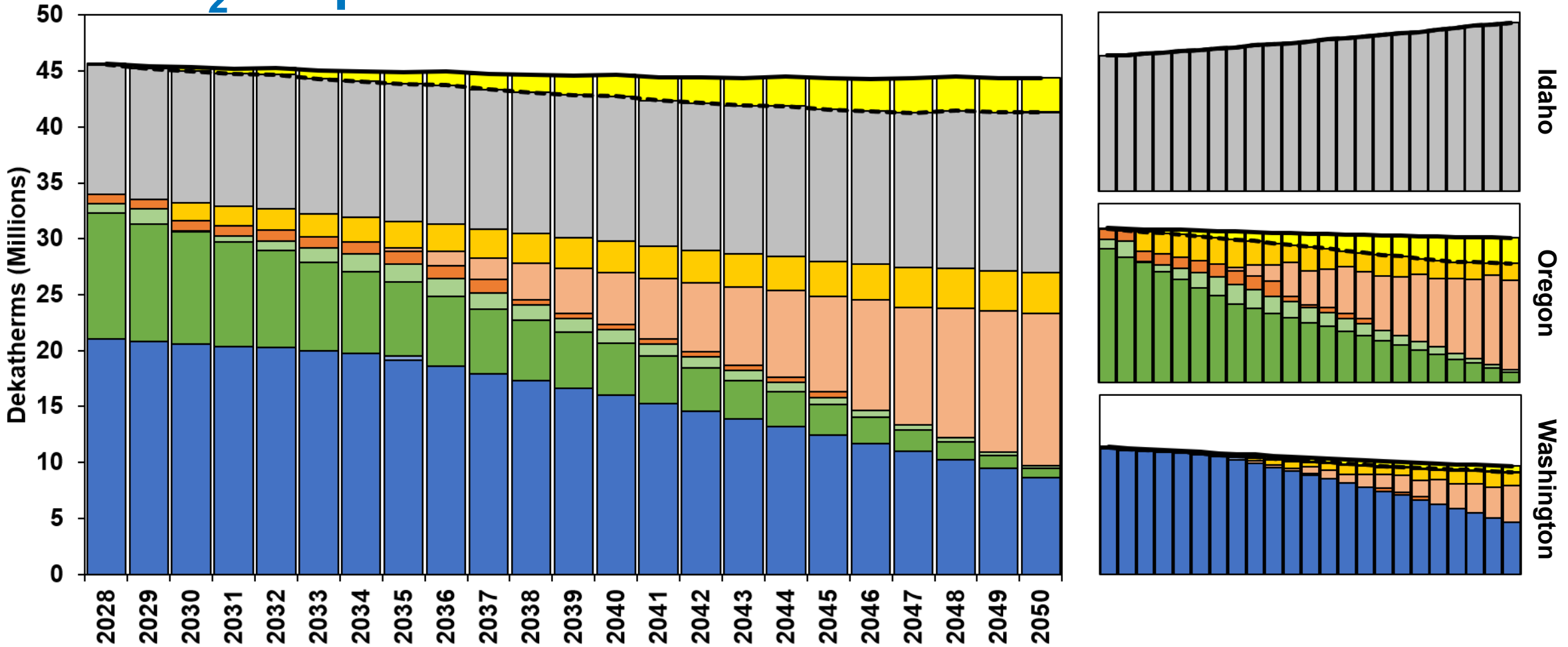
Social Cost of Greenhouse Gas



Resiliency

Modeling in progress...

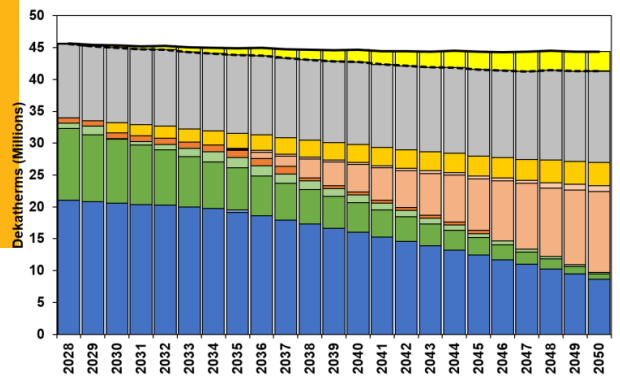
No CO_2 Sequestration



5% Incremental Cost Cap

Modeling in progress...

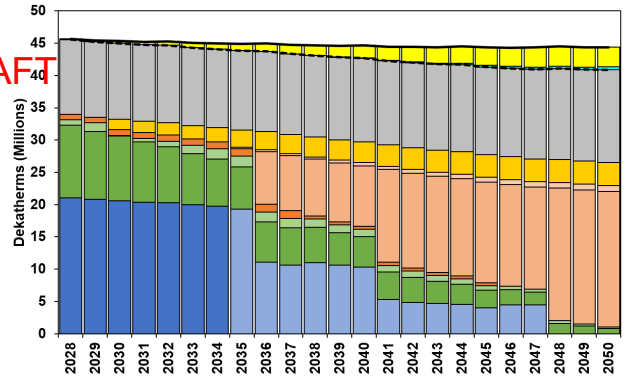
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PRS

Modeling in progress...

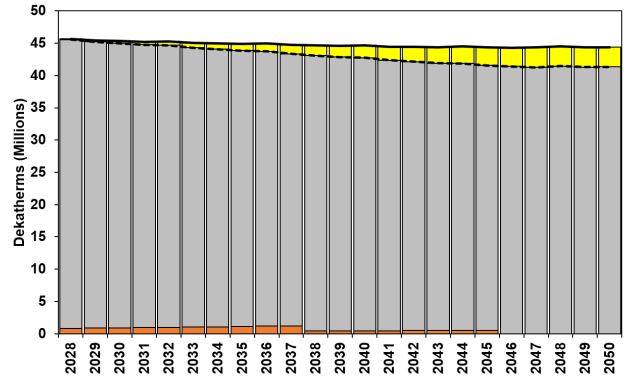
Low Renewable Resource Costs



High CCA Pricing

Modeling in progress...

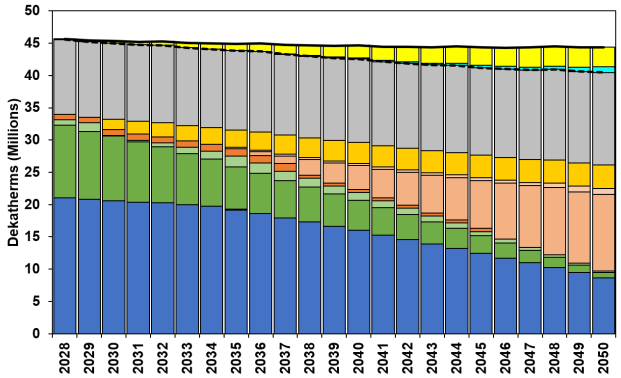
Resiliency



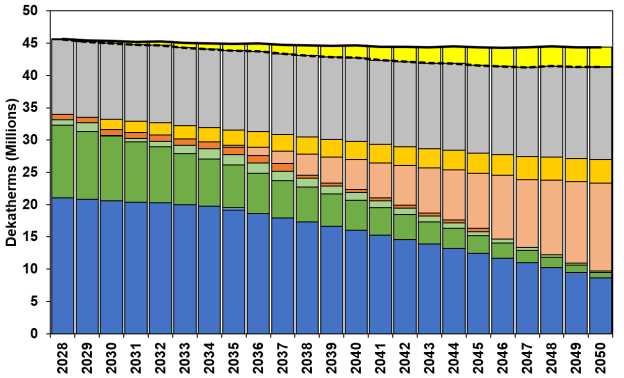
No Climate Programs

Modeling in progress...

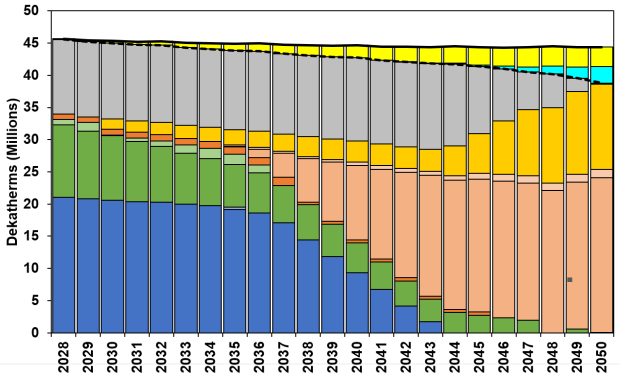
High Renewable Resource Costs



High Natural Gas Prices



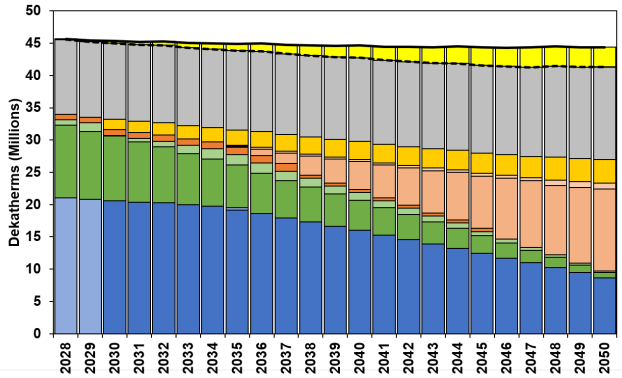
No CO2 Sequestration



Zero GHG by 2050

Modeling in progress...

IRA Returns in 2030



SCGHG

Modeling in progress...

5% Cost Cap

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		Demand-Varying											
		Appliance Replacement	No New Customers After 2030	High Natural Gas Retail Pricing	High Growth	Average Weather	PRS	No CO2 Sequestration	Zero GHG by 2050	High CCA Pricing	High Natural Gas Prices	Social Cost of Greenhouse Gas	No Climate Programs
Idaho	Prior Contracted RTCs								2045				
	RTC								2044				
	Alternative Fuels								2044				
	Electrification								2045				
Oregon	CCI	2028	2028	2028	2028	2028	2028	2028	2028	2028	2028	2028	
	Compliance Instruments	2028	2028	2028	2028	2028	2028	2028	2028	2028	2028	2028	
	Prior Contracted RTCs	2028	2028	2028	2028	2028	2028	2028	2028	2028	2028	2028	2028
	RTC	2039	2036	2035	2035	2035	2035	2035	2035	2036	2036	2035	
	CCUS	2035	2035	2035	2035	2035	2035		2035	2035	2035	2035	
	Alternative Fuels	2030	2030	2030	2030	2030	2030	2030	2030	2030	2030	2030	
	Electrification								2046		2049		
Washington	Allowances (Auction)	2028	2028	2028	2028	2028	2028	2028	2028	2028	2028	2030	
	Allowances (Ceiling)		2035	2035	2035	2035	2035	2035	2035	2035	2035	2028	
	Prior Contracted RTCs	2044	2038	2037	2037	2040	2045	2039	2039	2036	2038	2037	
	RTC	2040	2039	2039	2036	2036	2036	2036	2037	2036	2039	2038	
	CCUS		2048	2048	2047	2047	2048		2039	2039	2048	2048	
	Alternative Fuels	2030	2030	2030	2030	2035	2030	2030	2030	2030	2030	2030	
	Electrification				2046	2048	2050	2050	2041	2039	2036	2050	
System	Allowances (Auction)	2028	2028	2028	2028	2028	2028	2028	2028	2028	2028	2030	
	Allowances (Ceiling)		2035	2035	2035	2035	2035	2035	2035	2035	2035	2028	
	CCI	2028	2028	2028	2028	2028	2028	2028	2028	2028	2028	2028	
	Compliance Instruments	2028	2028	2028	2028	2028	2028	2028	2028	2028	2028	2028	
	Prior Contracted RTCs	2028	2028	2028	2028	2028	2028	2028	2028	2028	2028	2028	2028
	RTC	2039	2036	2035	2035	2035	2035	2035	2035	2036	2036	2035	
	CCUS	2035	2035	2035	2035	2035	2035		2035	2035	2035	2035	
	Alternative Fuels	2030	2030	2030	2030	2030	2030	2030	2030	2030	2030	2030	
	Electrification				2046	2048	2050	2050	2041	2039	2036	2050	
	Non-Compliance												

Table will be updated with models not currently shown

Values indicate the first year a resource option was selected. A resource option is not selected where there is no corresponding value shown.

Portfolio Costs

Gross Energy Demand Varies From PRS

Scenario	Net Present Value	23-Year Levelized Cost	Cost Relative to PRS	Cost Relative to No Climate Programs
High Natural Gas Prices	$5,239,305	$455,591	126%	195%
High CCA Pricing	$5,100,336	$443,506	122%	190%
Zero GHG by 2050	$5,026,143	$437,055	121%	187%
Social Cost of Greenhouse Gas	$4,706,722	$409,279	113%	175%
High Growth	$4,250,026	$369,567	102%	158%
Average Weather	$4,228,575	$367,701	101%	157%
No CO2 Sequestration	$4,174,923	$363,036	100%	155%
PRS	$4,168,472	$362,475	100%	155%
High Natural Gas Retail Pricing	$4,042,400	$351,512	97%	150%
No New Customers After 2030	$3,893,422	$338,558	93%	145%
Appliance Replacement	$2,978,969	$259,040	71%	111%
No Climate Programs	$2,689,624	$233,880	65%	100%
Hybrid Heating	Modelling in progress…			
Perfect Storm	Modelling in progress…			
Low Renewable Resource Costs	Modelling in progress…			
High Renewable Resource Costs	Modelling in progress…			
IRA Returns in 2030	Modelling in progress…			
Resiliency	Modelling in progress…			
5% Incremental Cost Cap	Modelling in progress…			

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Natural Gas Avoided Cost

TAC 15 – November 18, 2026

Michael Brutocao, Natural Gas Planning Manager

2027 IRP Gas Avoided Cost

- Modeling in progress…
- Analysis to include avoided cost for Washington, Idaho, Oregon.

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Natural Gas 2027 IRP
Idaho Energy Efficiceny Analysis

TAC 15 – November 18, 2026

Michael Brutocao, Natural Gas Planning Manager

Idaho Gas Energy Efficiency Analysis

- Modeling in progress.
- Analysis to include Idaho Energy Efficiency supply curves and modeling results

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Natural Gas
2027 Gas IRP Document Outline

TAC 15 – November 18, 2026

Michael Brutocao, Natural Gas Planning Manager

2027 Gas IRP Outline

- 2027 Natural Gas IRP is being reorganized from its prior versions following a similar structure as presented for the 2027 Electric IRP in TAC 13.

- Details to follow…

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Natural Gas IRP Action Items

TAC 15 – November 18, 2026

Michael Brutocao, Natural Gas Planning Manager

2027 IRP Action Items – Company Actions

- Release a Request for Proposals (RFP) in 2027 to investigate options of acquiring the necessary amount of RNG or RTC chosen in the PRS in 2030.
- Purchase Allowances or offsets as needed for compliance with the Climate Commitment Act in Washington for years 2028 and 2029 to comply with emissions reduction targets.
- Acquire all potential energy efficiency savings for Washington.
- Perform an NPA study for any qualifying pipeline reinforcement projects in Oregon and Washington.

2027 IRP Action Items – Planning Actions

- Develop a load forecast methodology where long-term changes in end uses can be considered and be useful for needs across the Company.
- Enhance resource cost analysis to include stochastic resource costs and include these results in the capacity expansion modeling process.
- Investigate alternative climate studies for 2029 IRP for future temperature forecasts.
- Work with ETO and market consultant to improve NPA studies and explore alternative methodologies to more effectively identify ideal pipeline reinforcement project candidates for NPA studies.
- Investigate cost-effectiveness of natural gas energy efficiency programs in Idaho