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

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

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

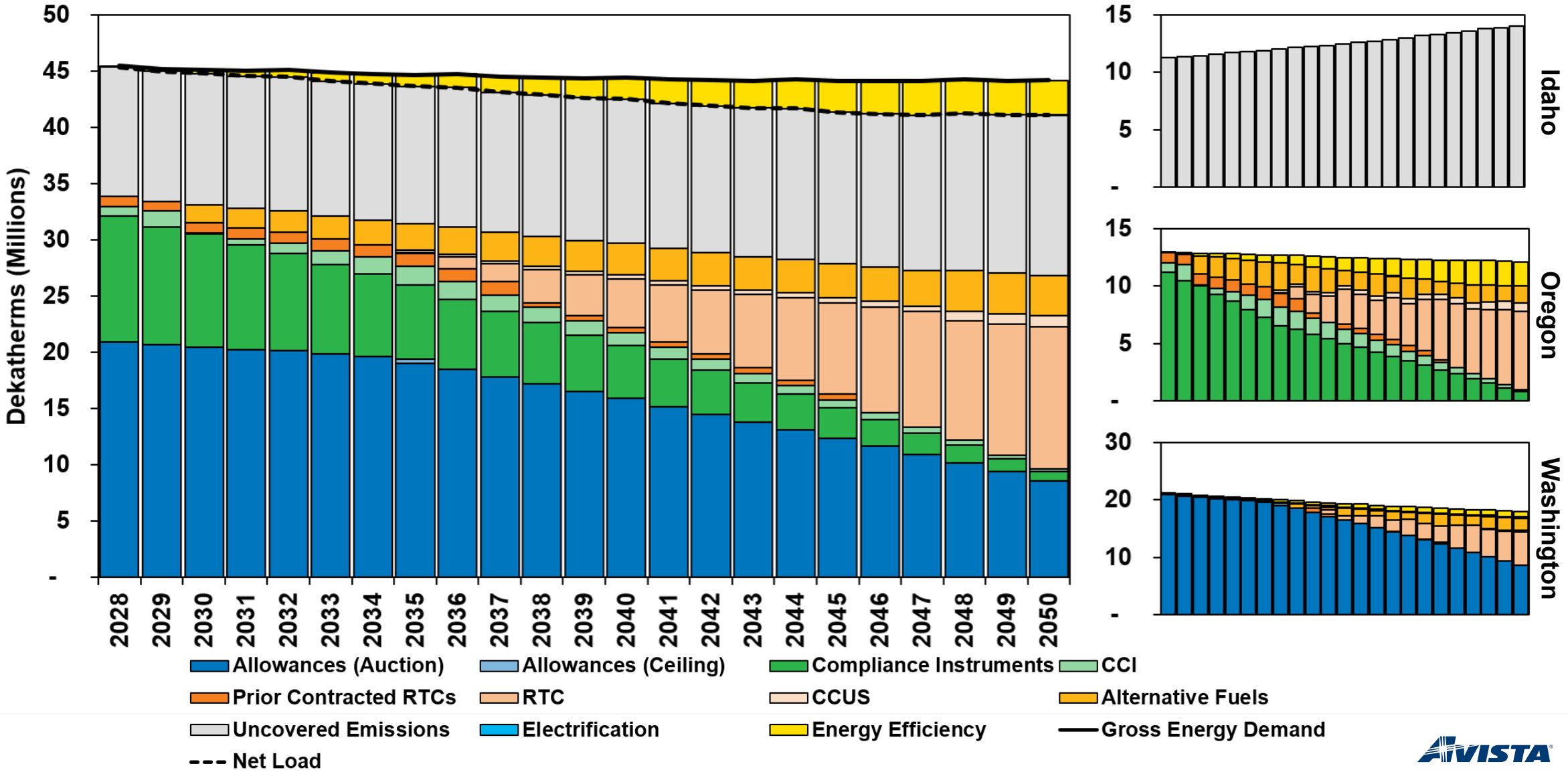
- December 2, 2026 – Virtual Public Meeting
  - 7:30 am: https://us02web.zoom.us/meeting/register/sSMILx1XRG6xQQQraWJUEw#/registration
  - 12:00 pm: https://us02web.zoom.us/meeting/register/AbAOm4vFT8amfzyD-BtBNA#/registration
- Jan 1, 2027 – Final Electric IRP Filed
- Feb 15, 2027 – Draft Gas IRP Released to TAC
- Apr 1, 2027 – Final Gas IRP Filed

Natural Gas 2027 IRP
Final Gas PRS

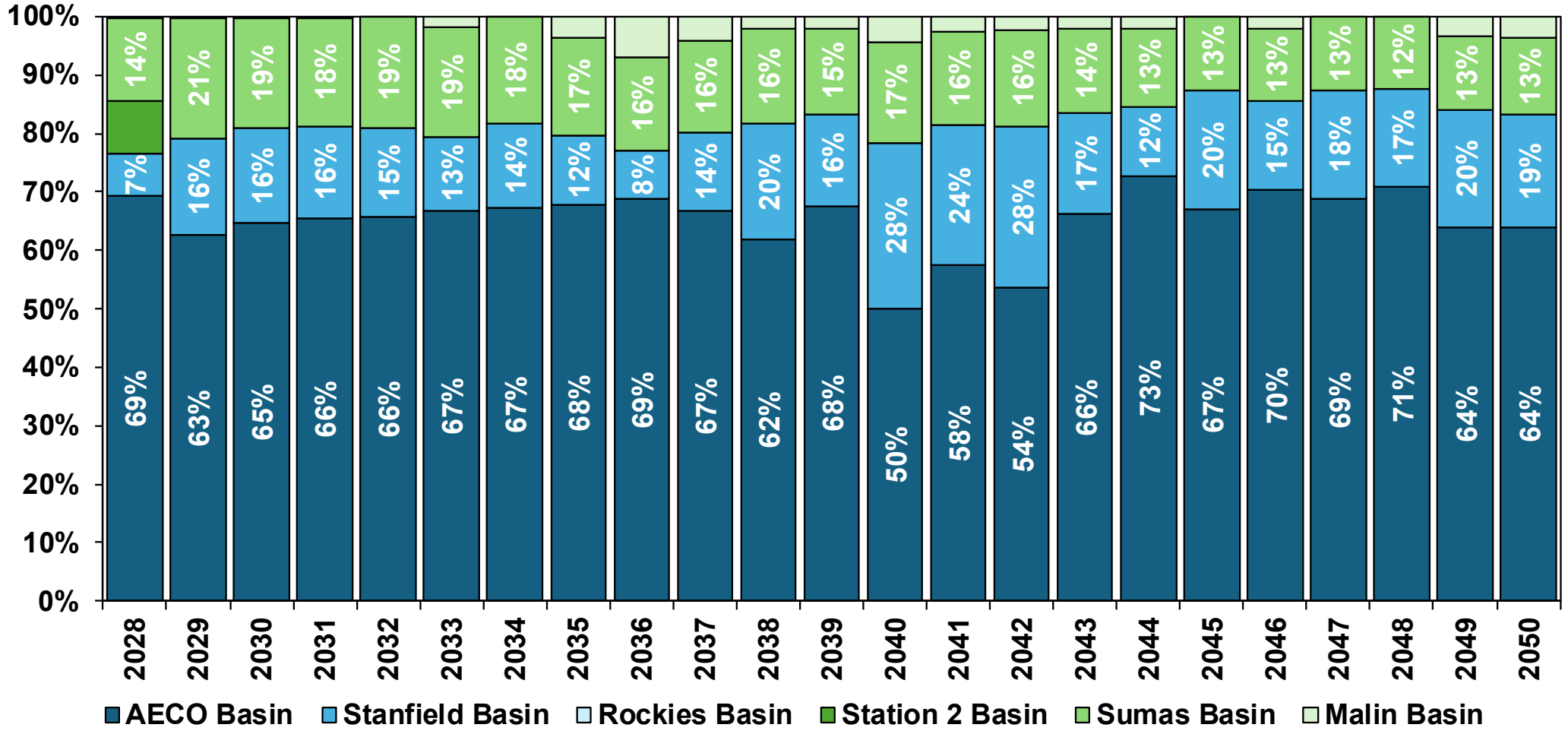
TAC 15 – November 18, 2026

Michael Brutocao, Natural Gas Planning Manager

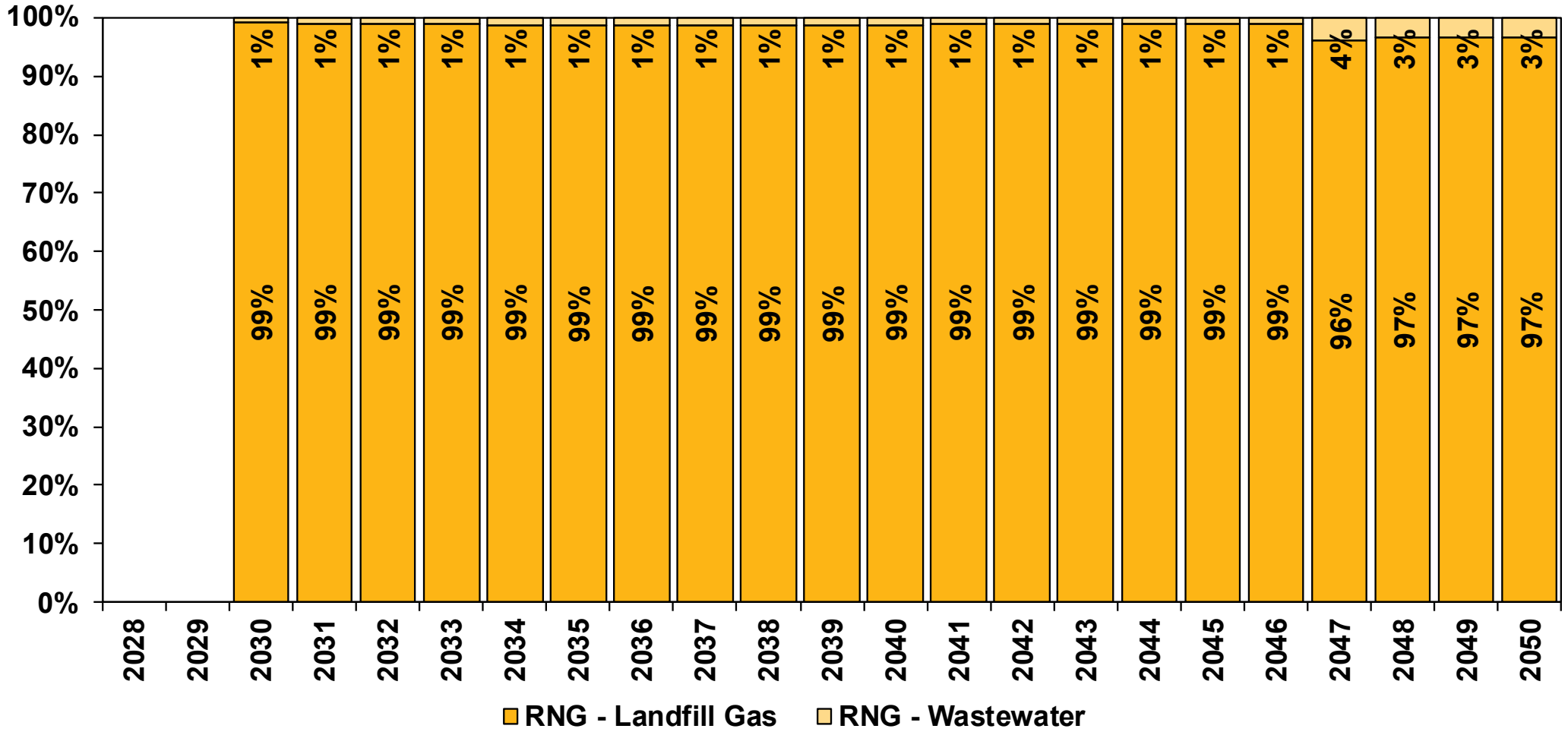
Resource Selection



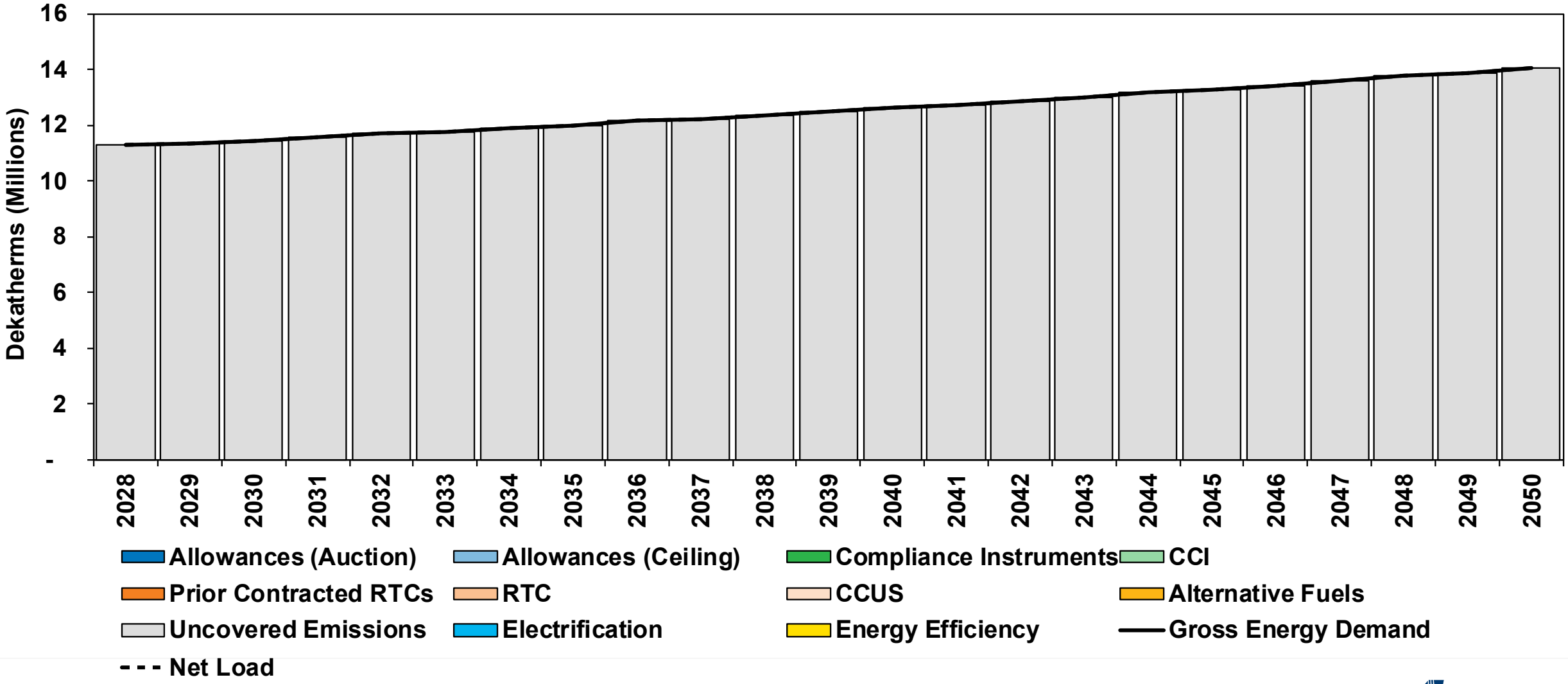
Natural Gas Basin Purchases



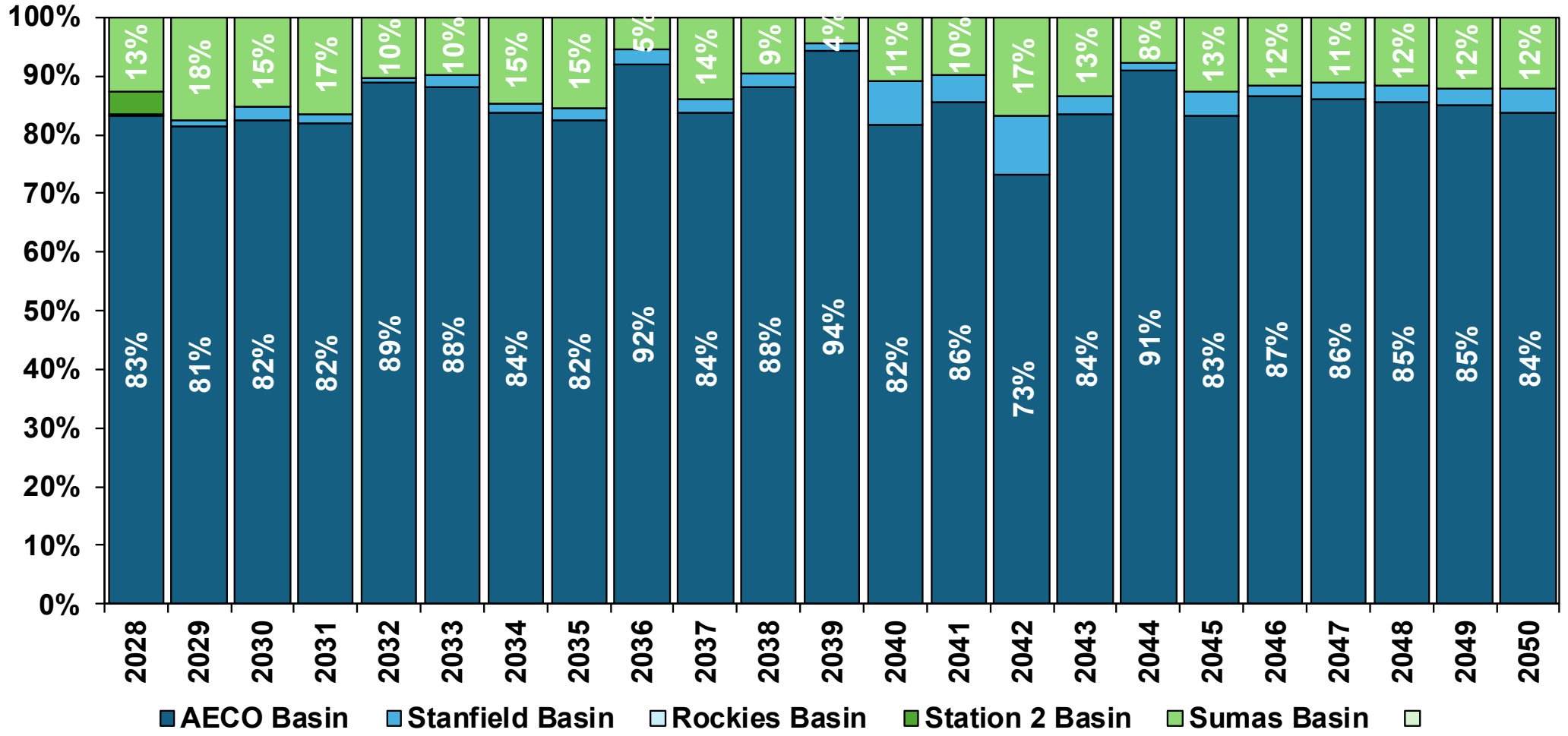
Alternative Fuel Purchases



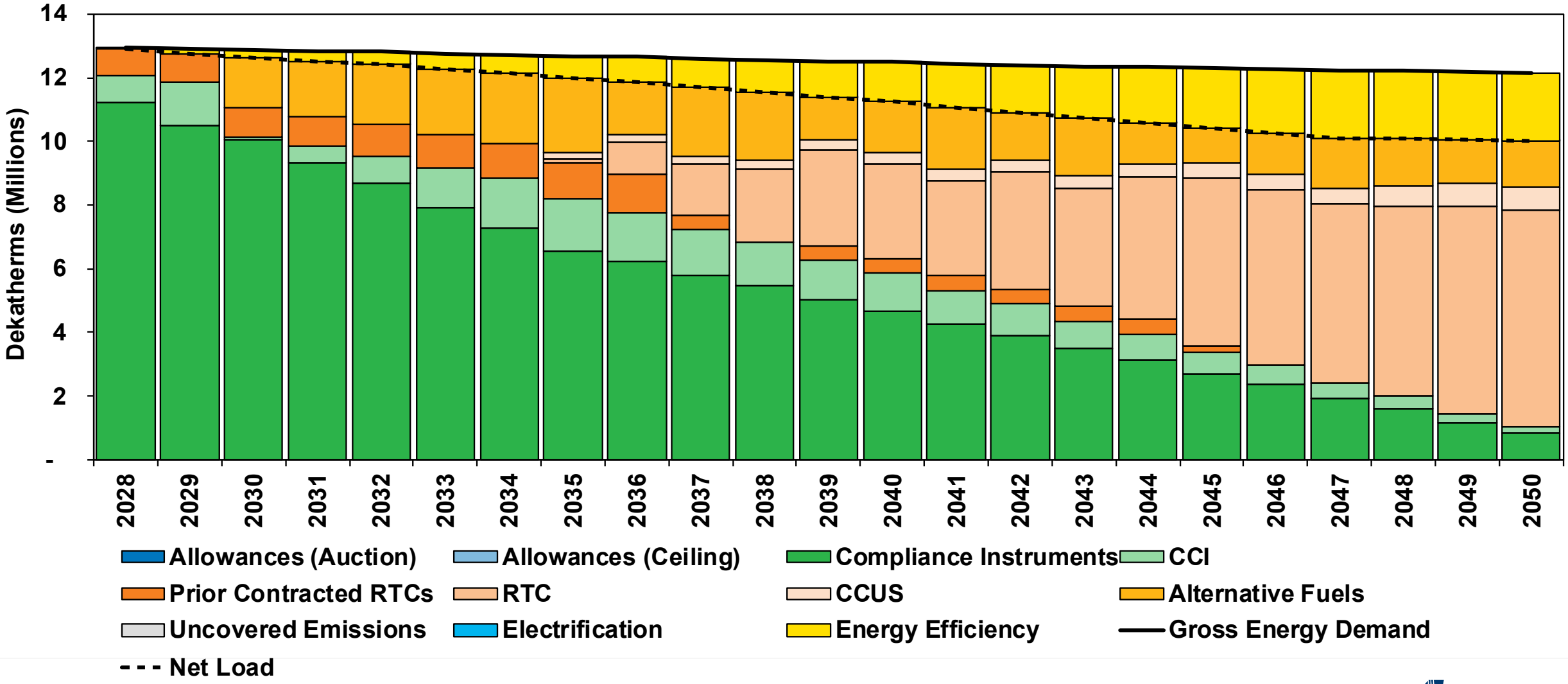
Resource Selection – Idaho



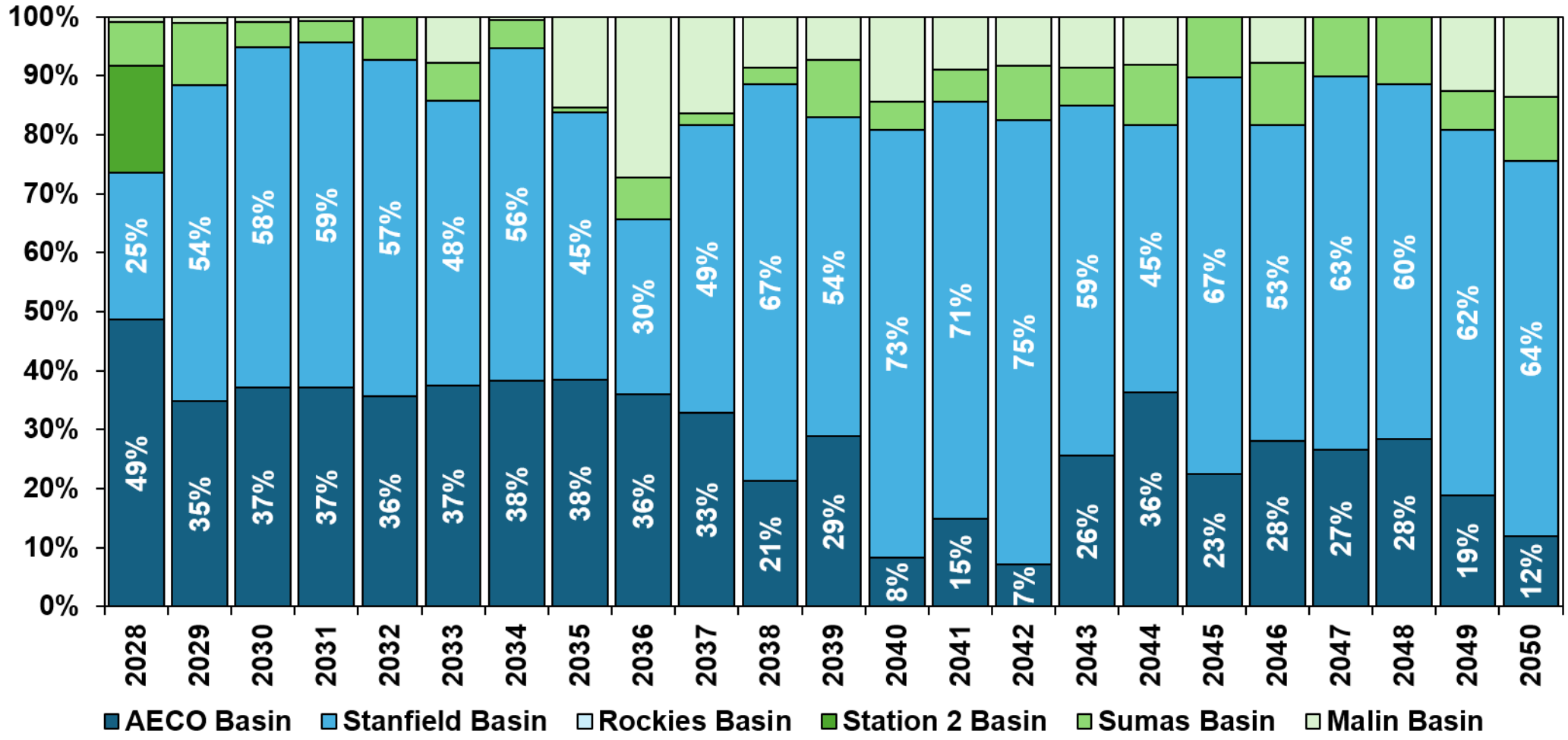
Natural Gas Basin Purchases – Idaho



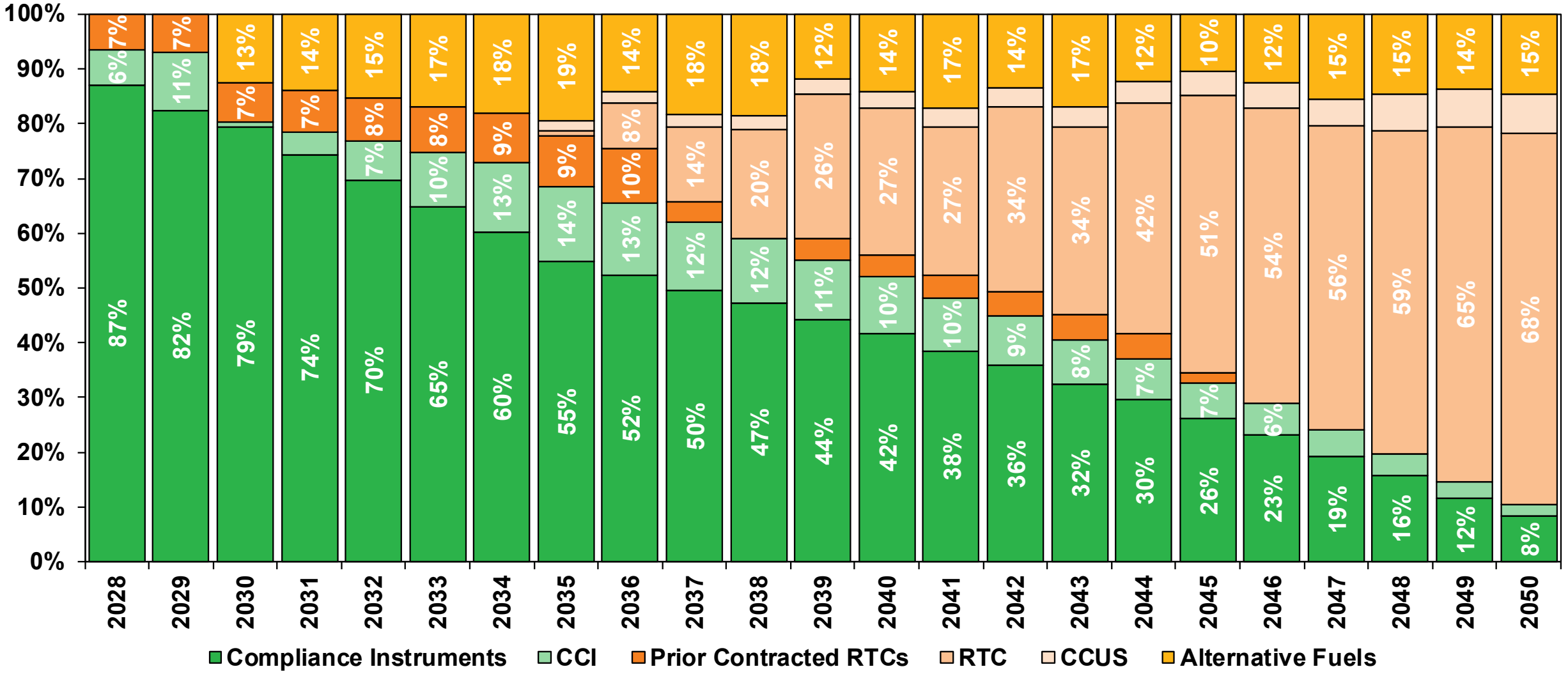
Resource Selection – Oregon



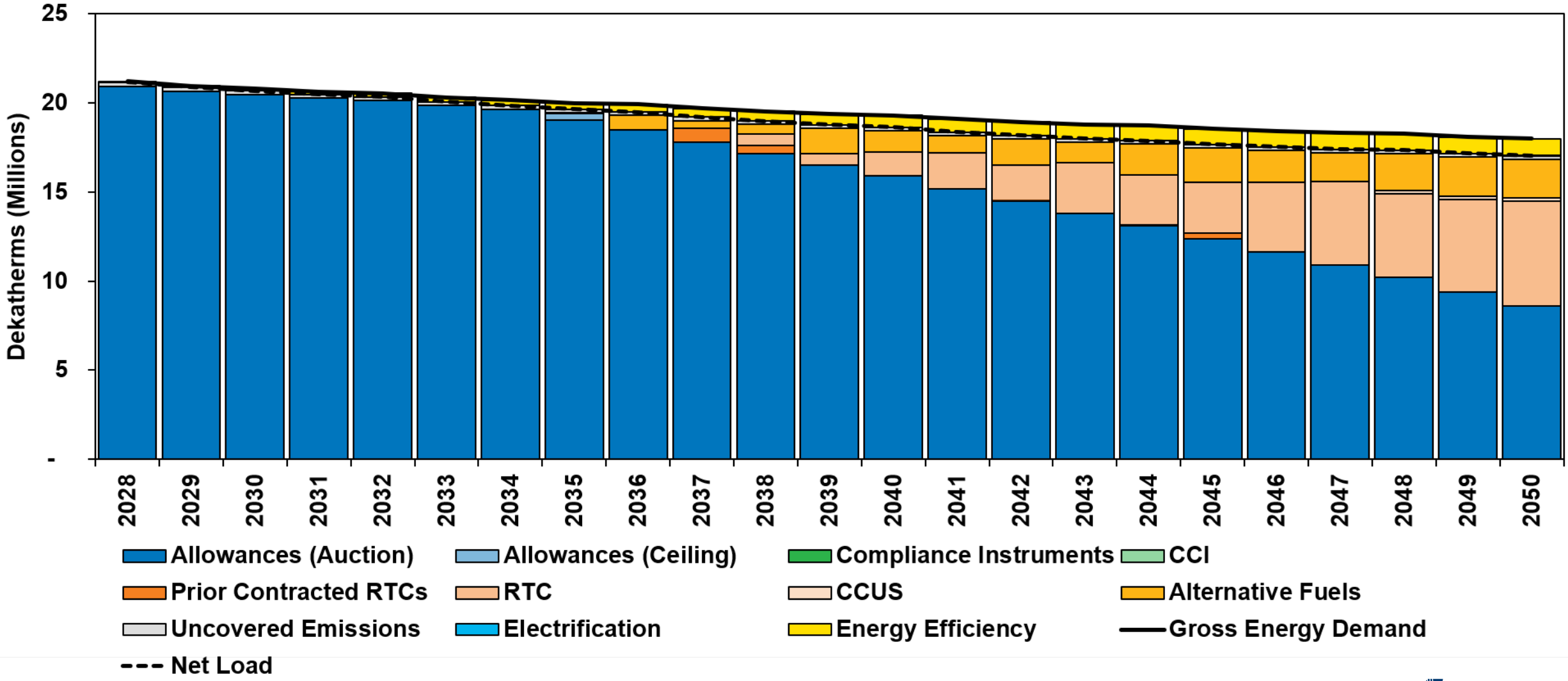
Natural Gas Basin Purchases – Oregon



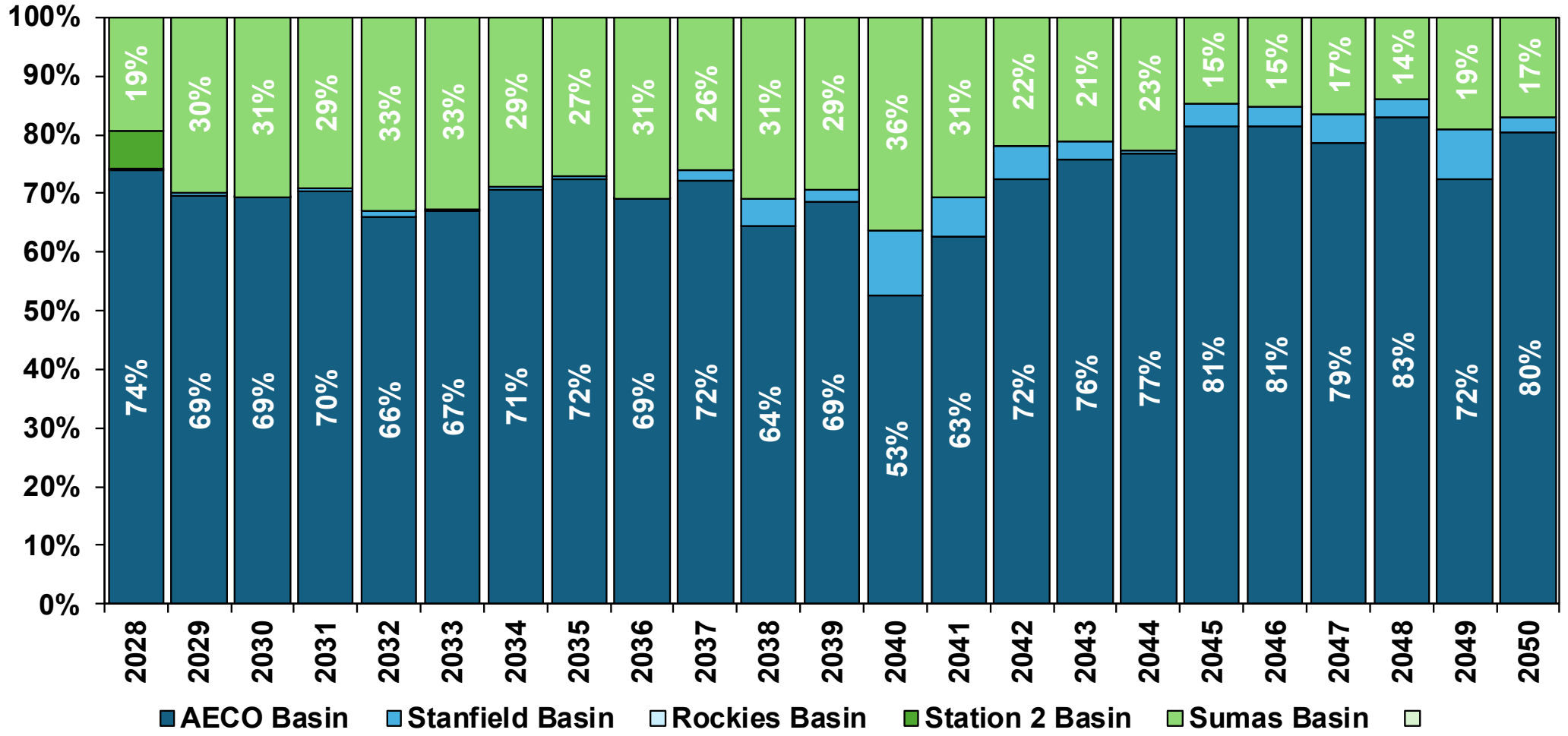
Resource Selection for Compliance with CPP



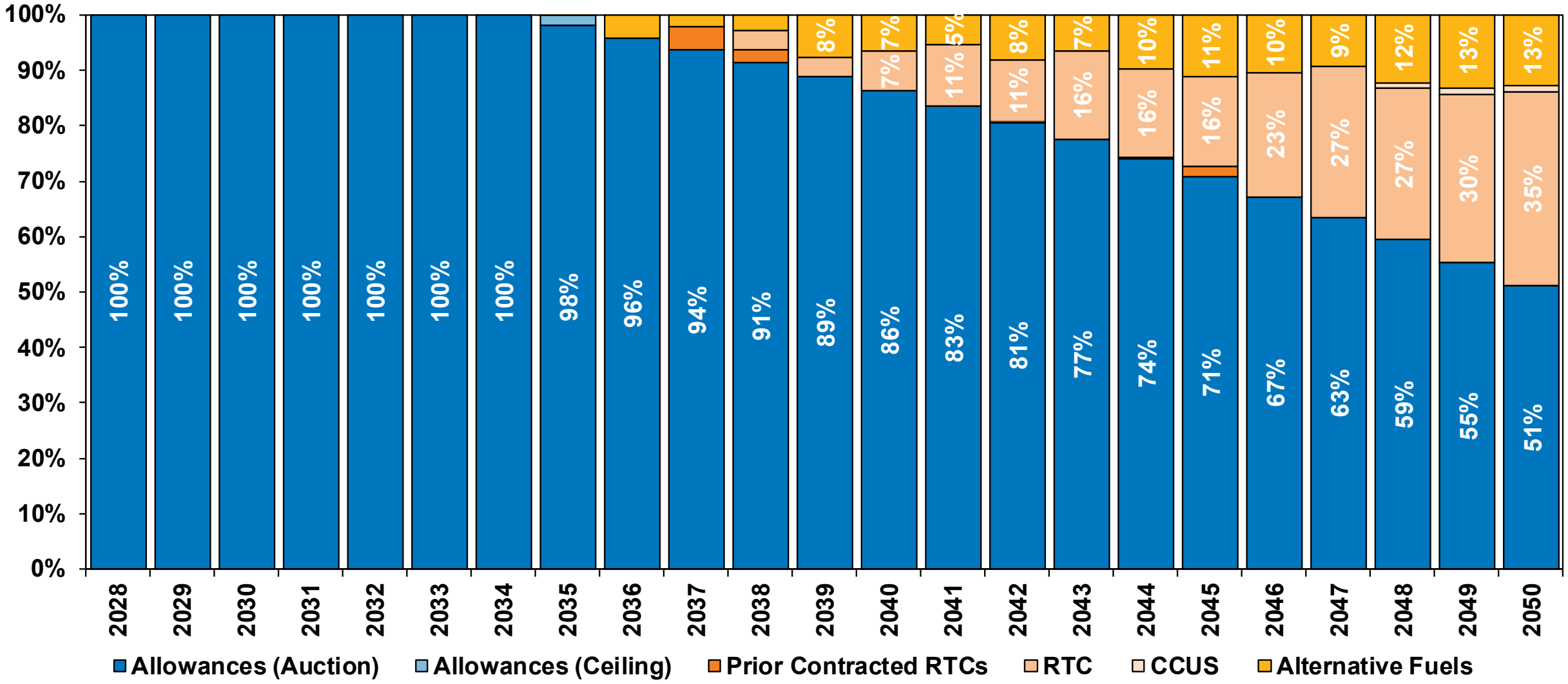
Resource Selection – Washington



Natural Gas Basin Purchases – Washington



Resource Selection for Compliance with CCA



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

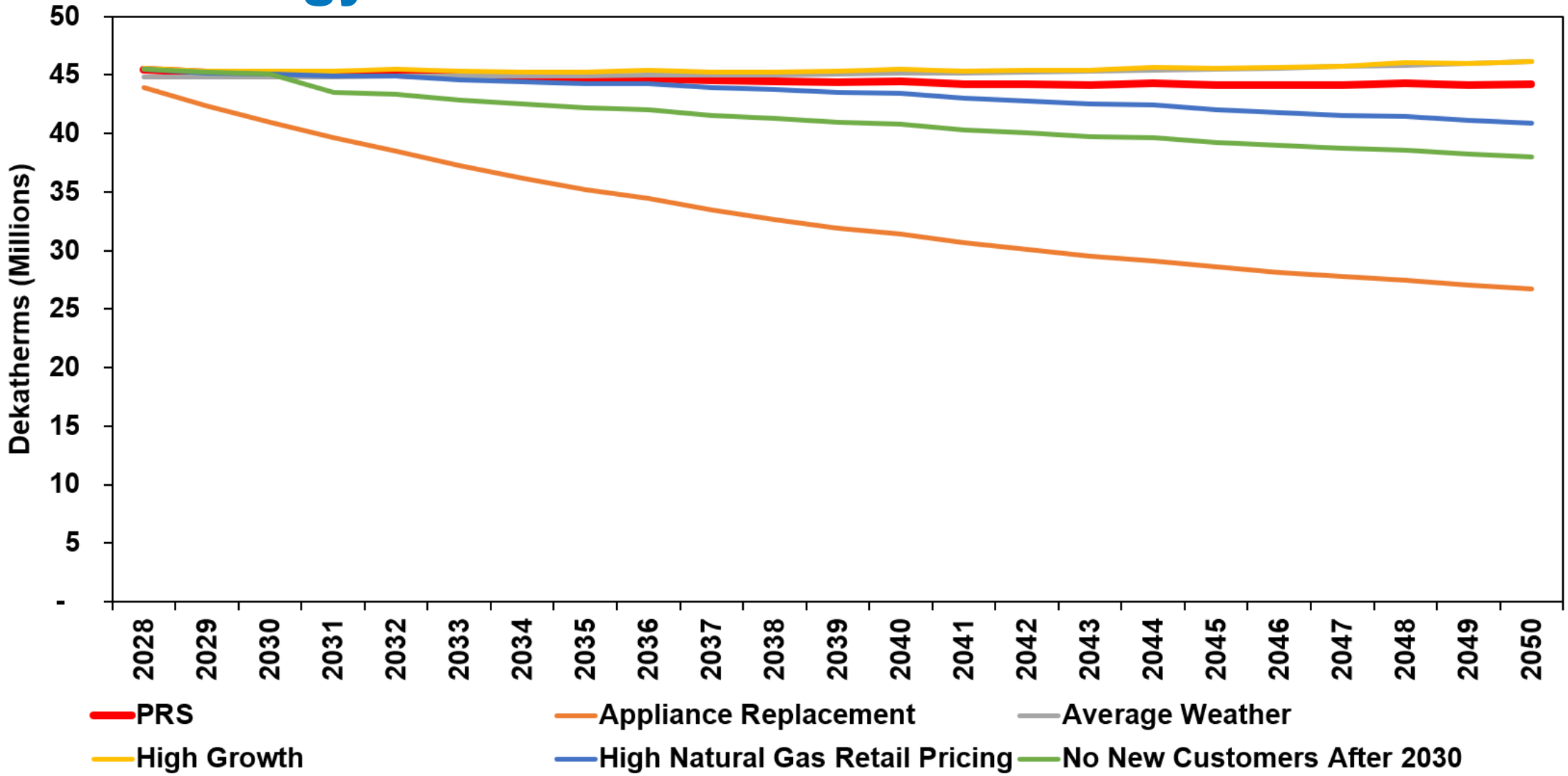
High Natural Gas Retail Pricing
High retail pricing accelerates gas usage reduction

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.
Results for Hybrid Heating not available at this time.

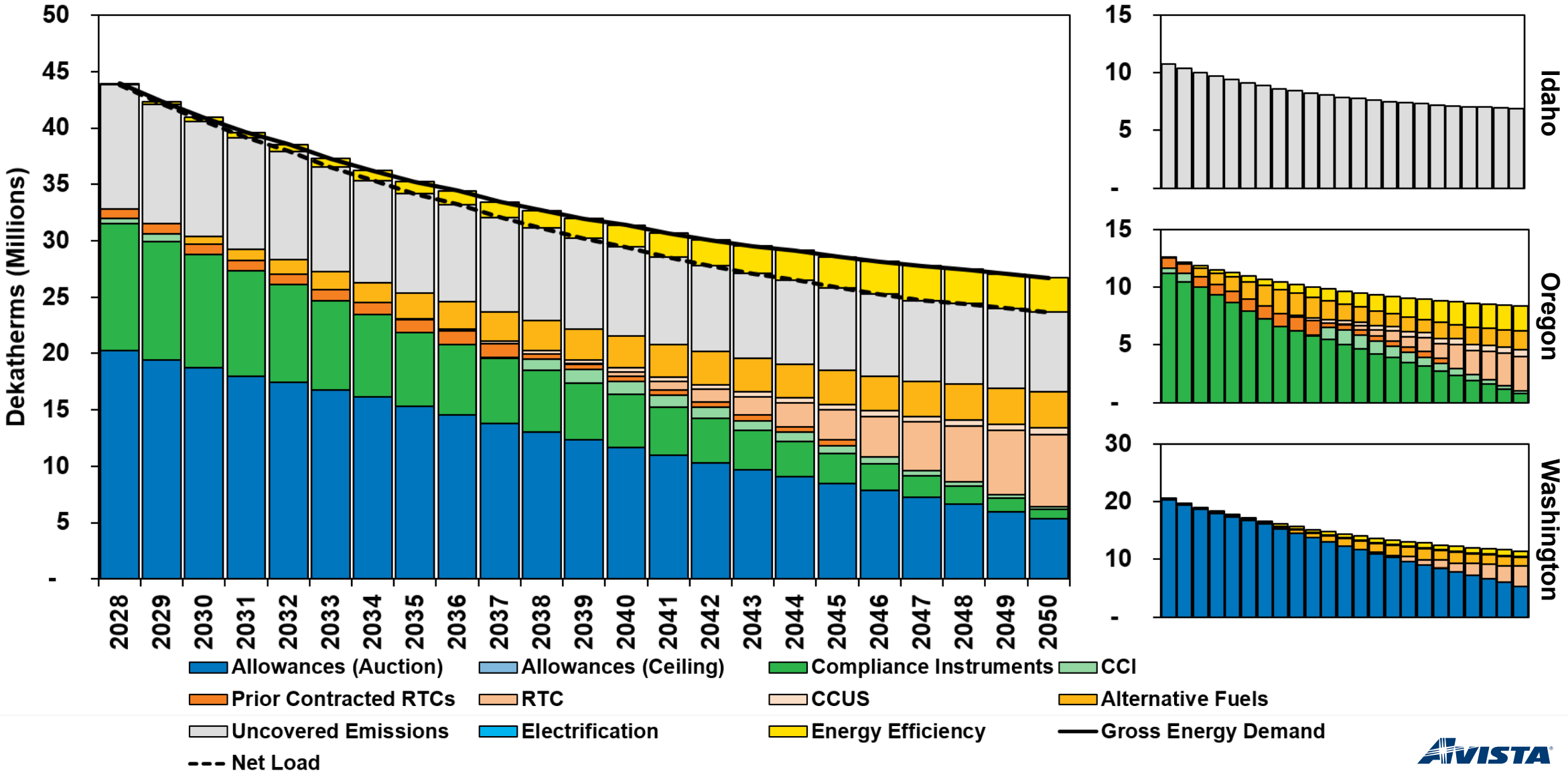
Hybrid Heating

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

Results for not available at this time.

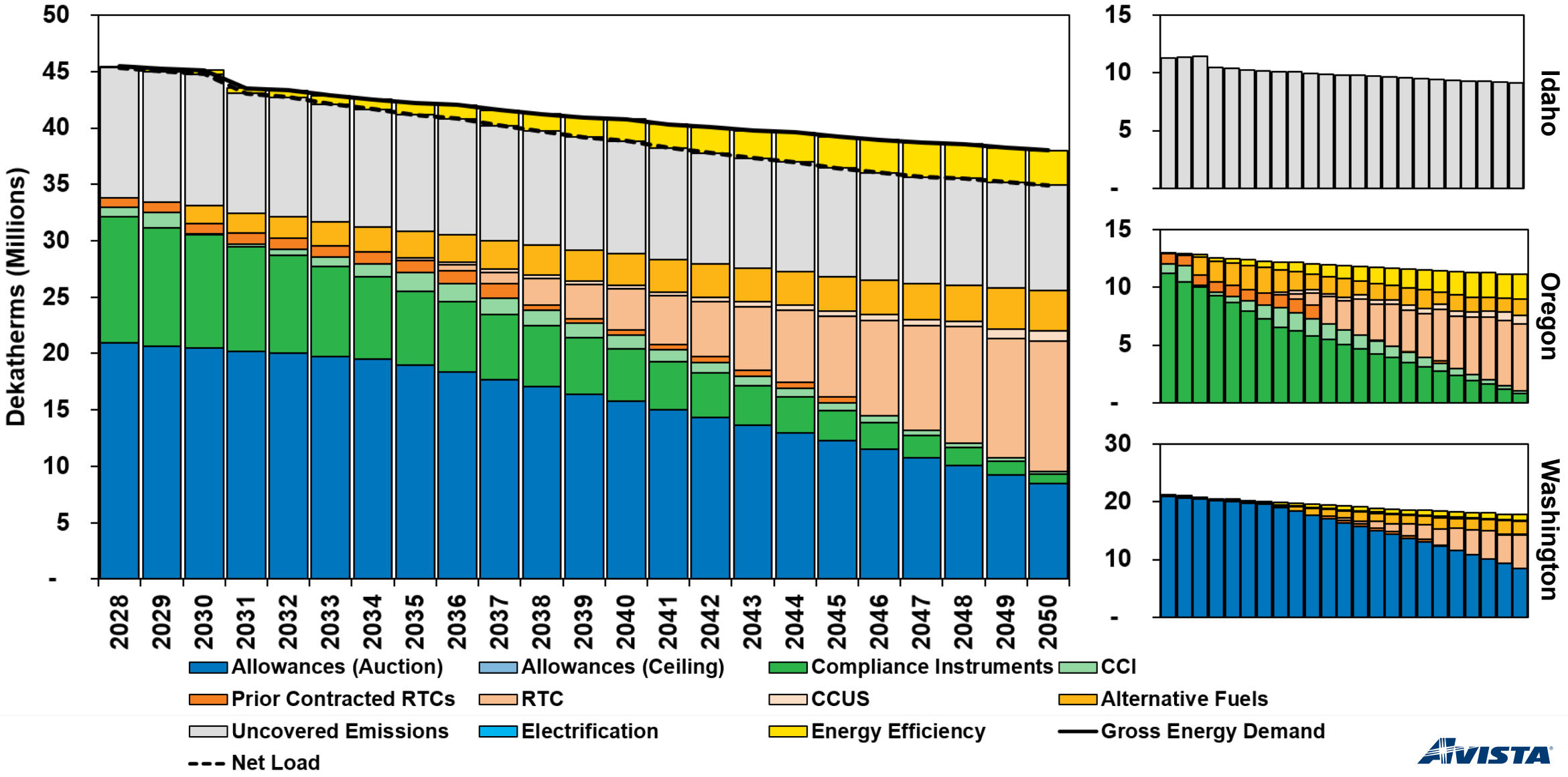
Appliance Replacement

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



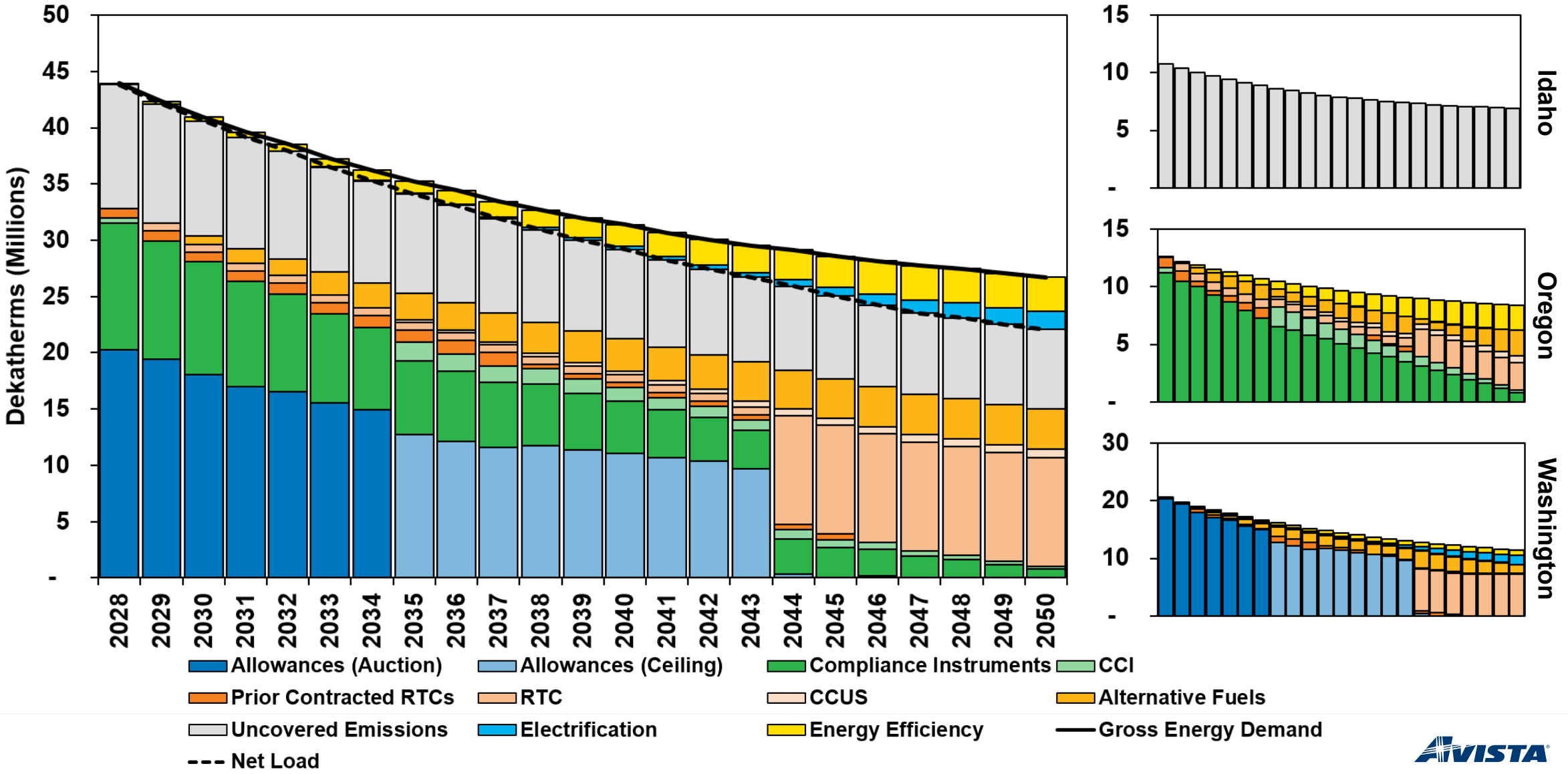
No New Customers After 2030

No new gas customers added in Idaho, Oregon, or Washington



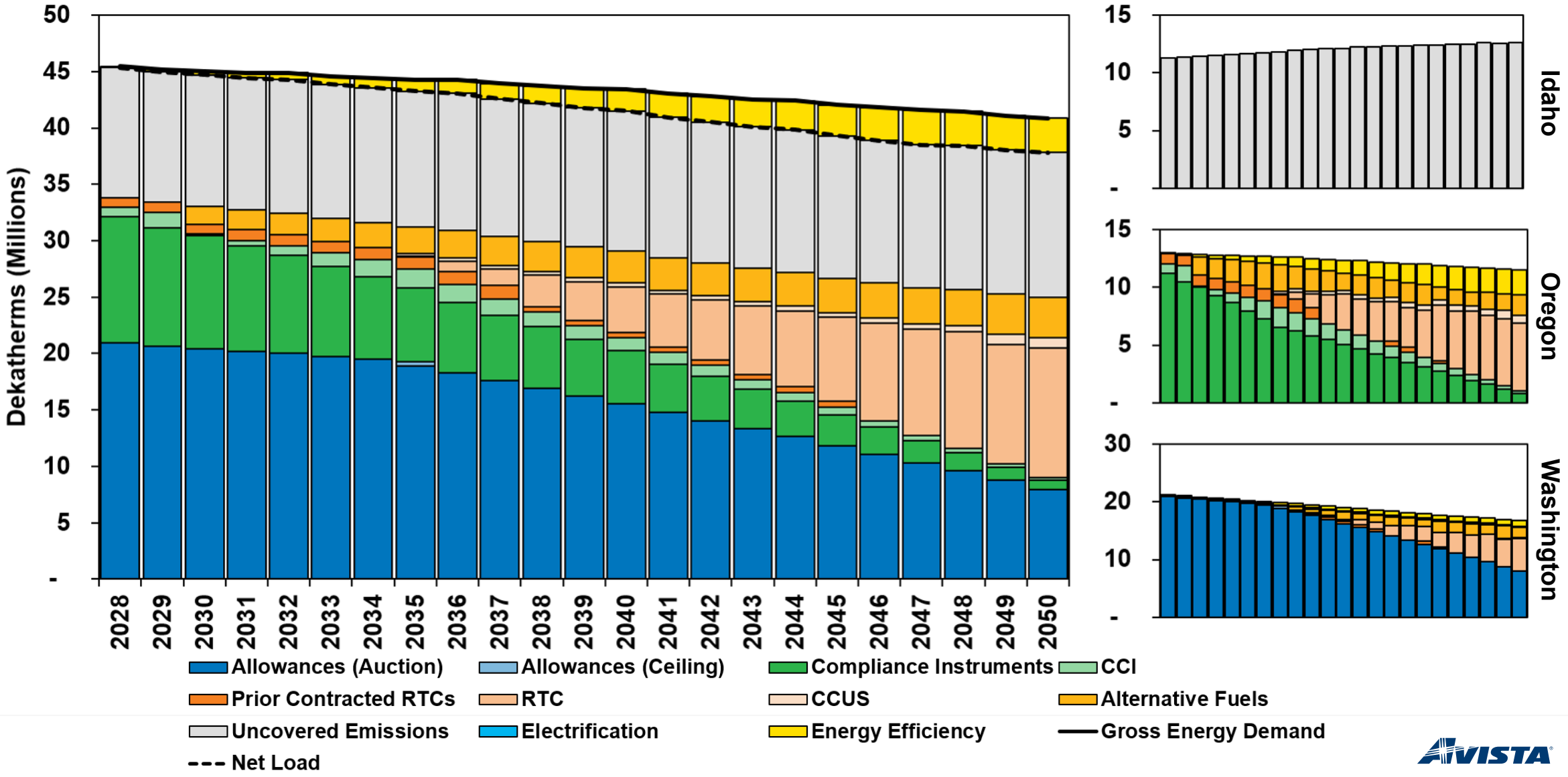
Perfect Storm

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



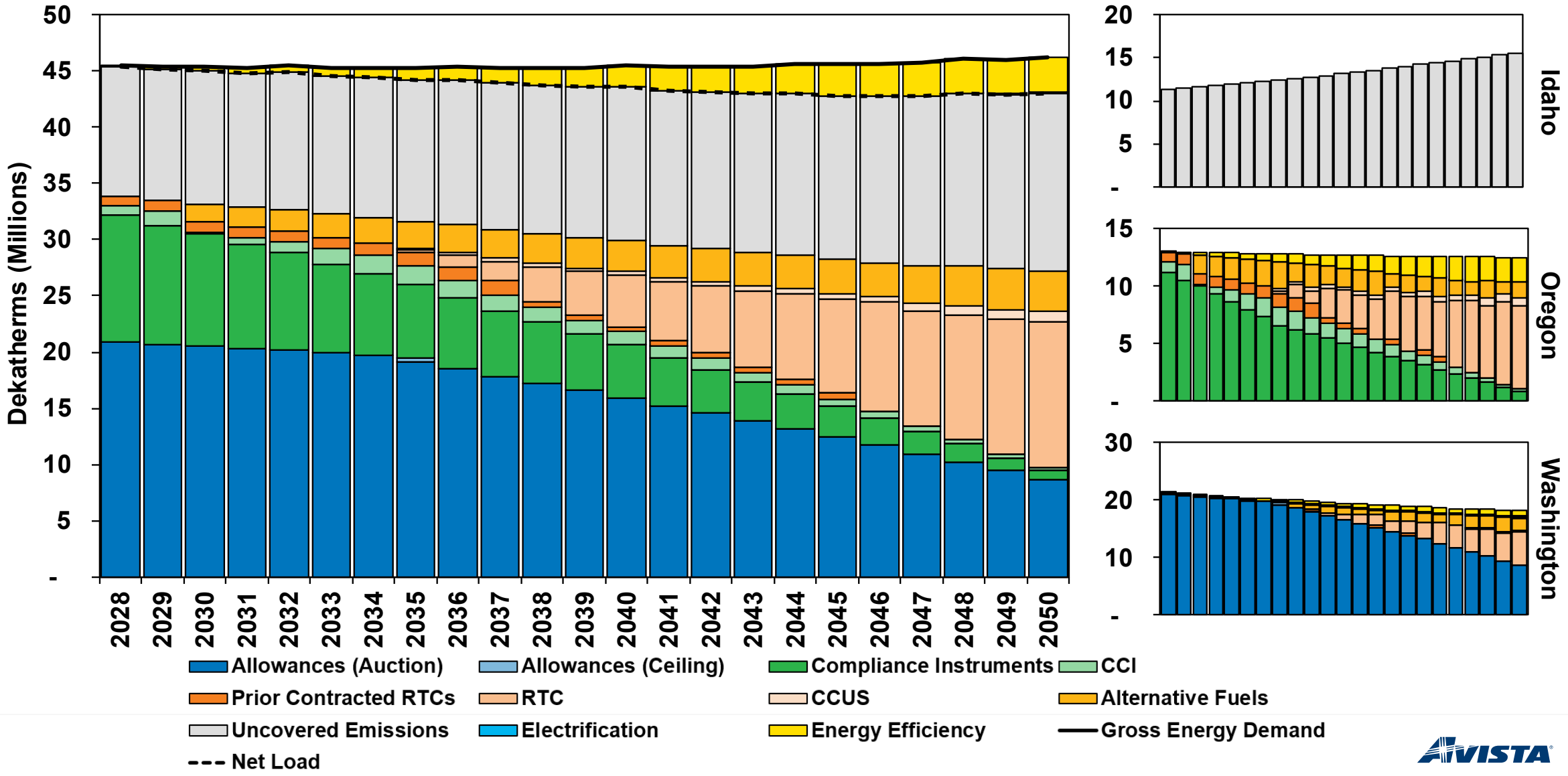
High Natural Gas Retail Pricing

High retail pricing accelerates gas usage reduction



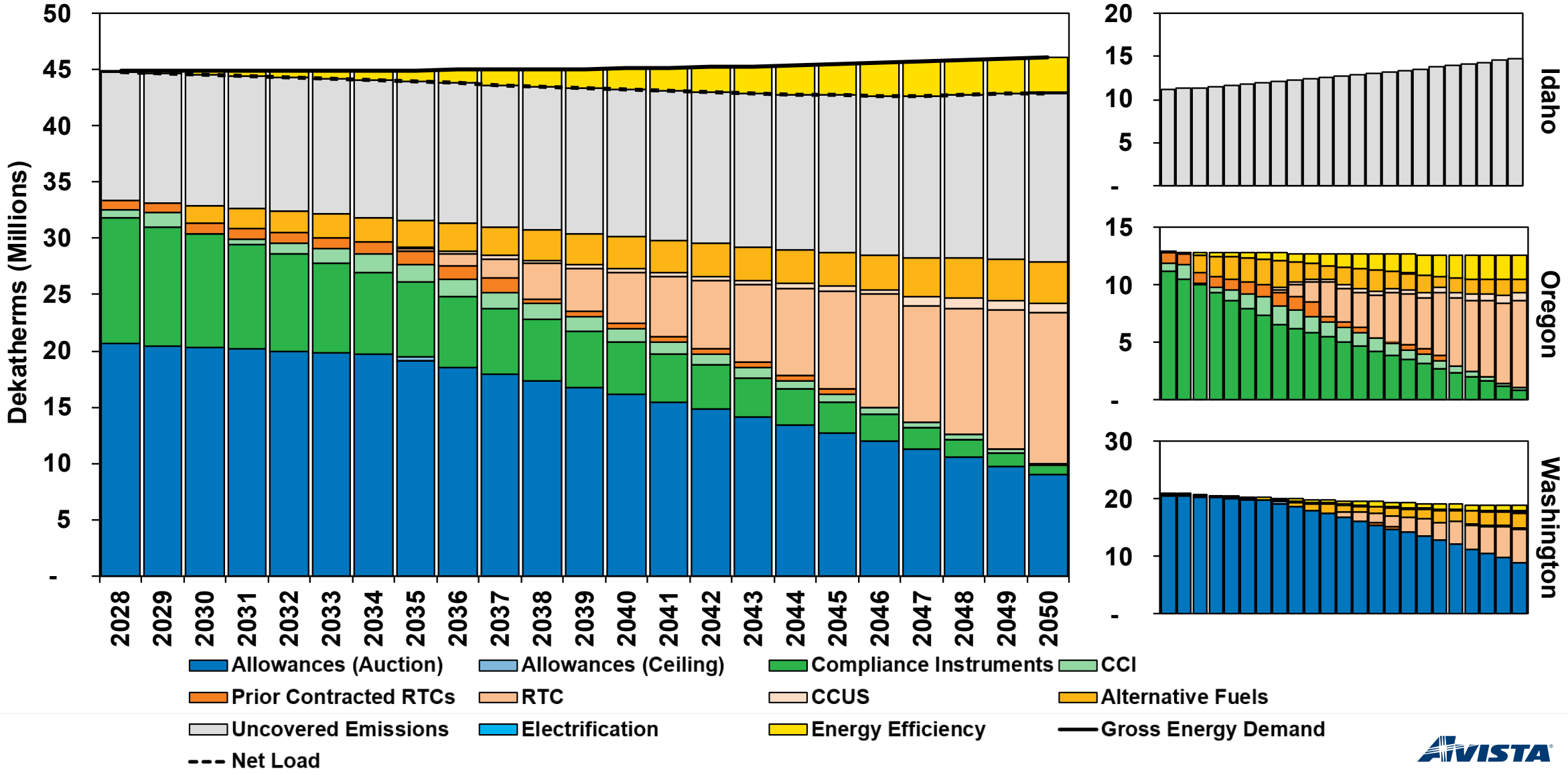
High Growth

System loads grow at higher annual average growth rate



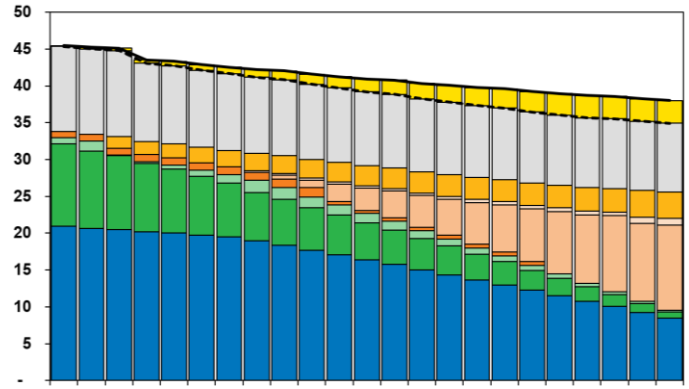
Average Weather

20-year average daily weather; no peak days



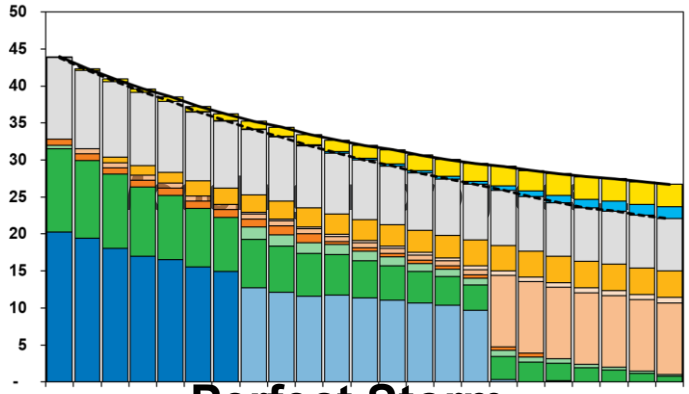
Resource Selection for Demand-Varying Models

Results not available at this time.

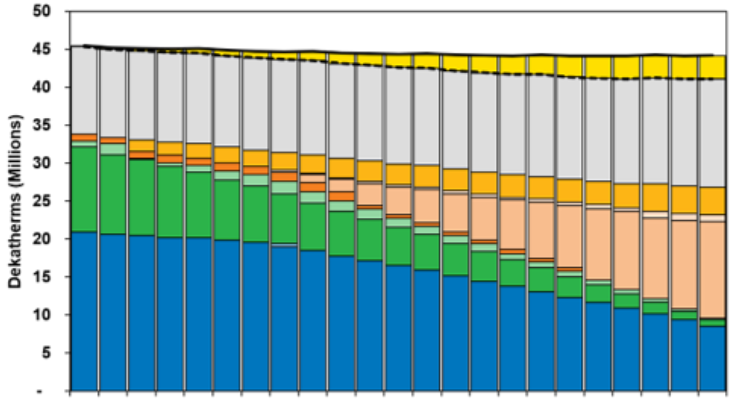


No New Customers After 2030

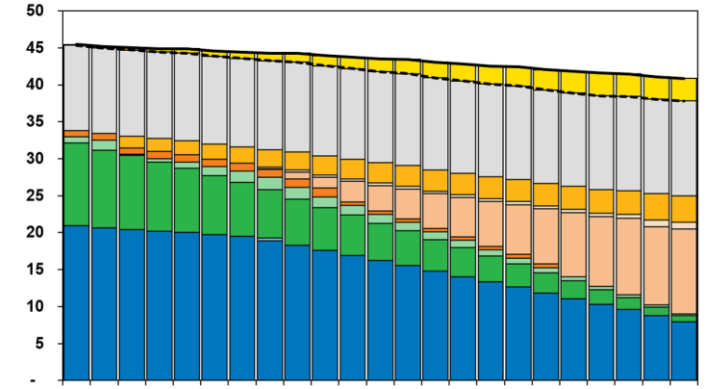
Hybrid Heating



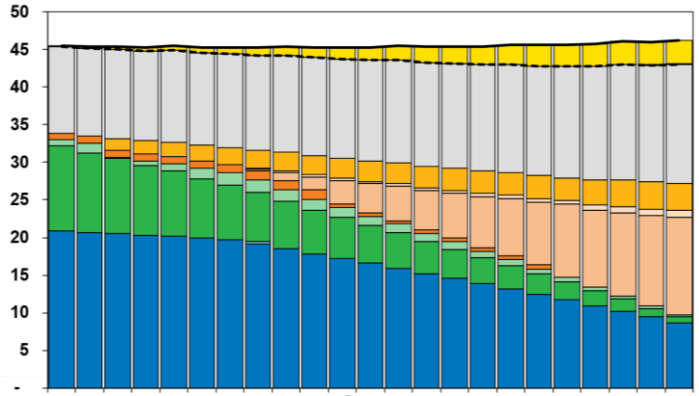
Perfect Storm



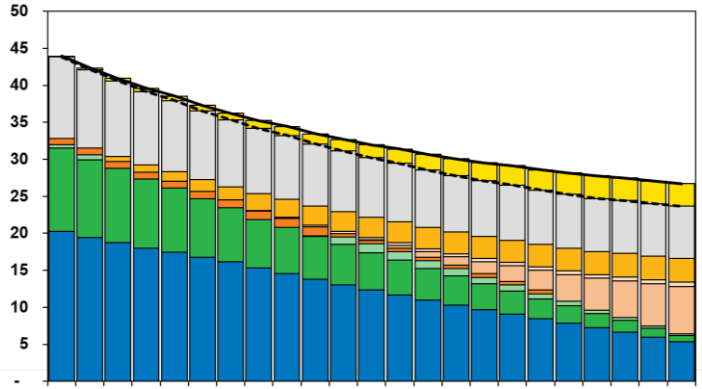
PRS



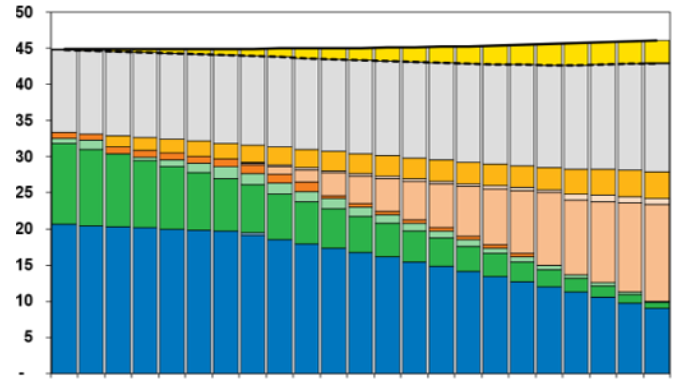
High Natural Gas Retail Pricing



High Growth



Appliance Replacement



Average Weather

Non-Demand-Influencing

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

No Climate Programs
Counterfactual 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

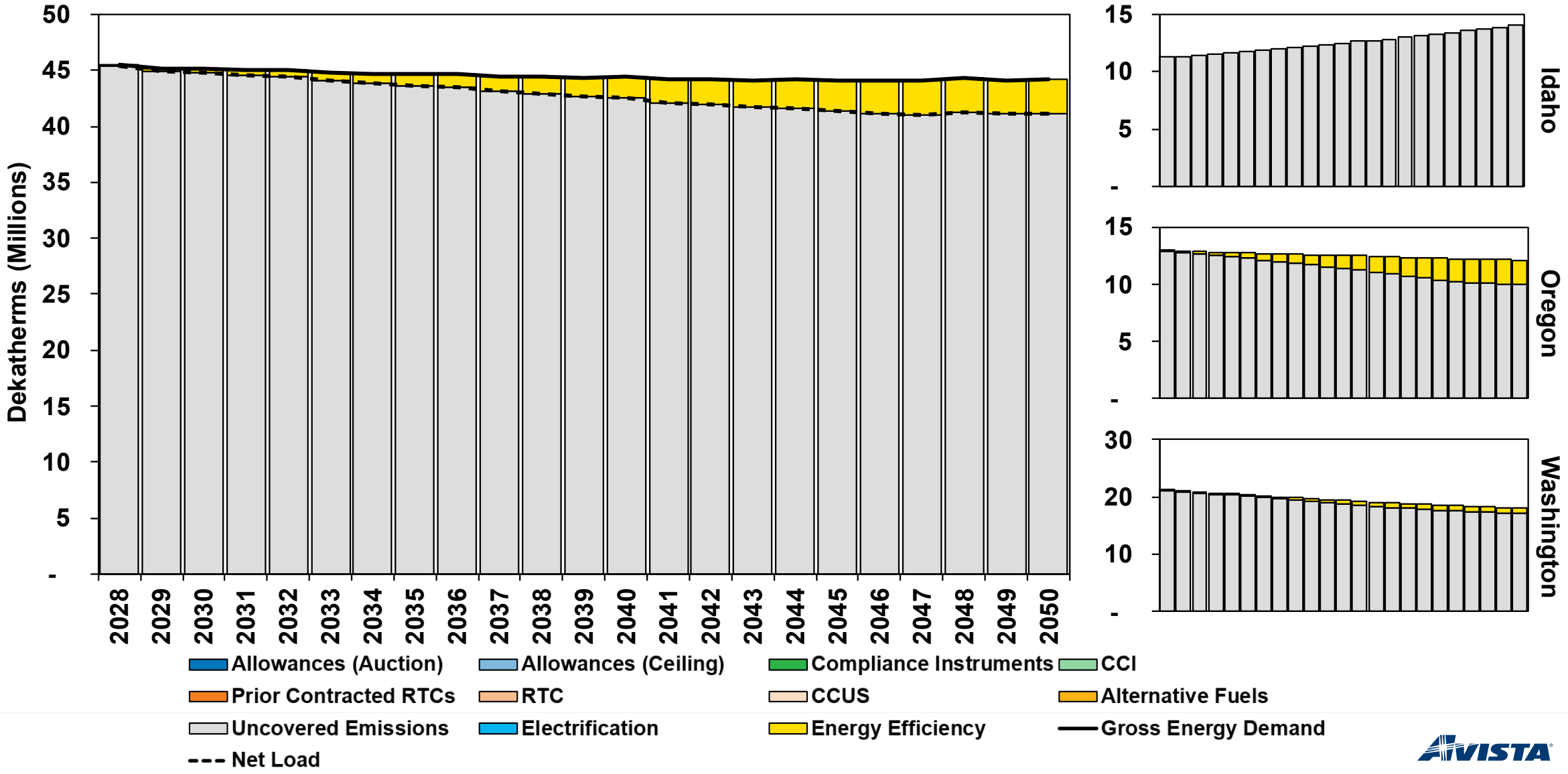
Social Cost of Greenhouse Gas
SCGHG applied to CO_2 emitting resources in Washington and Oregon

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

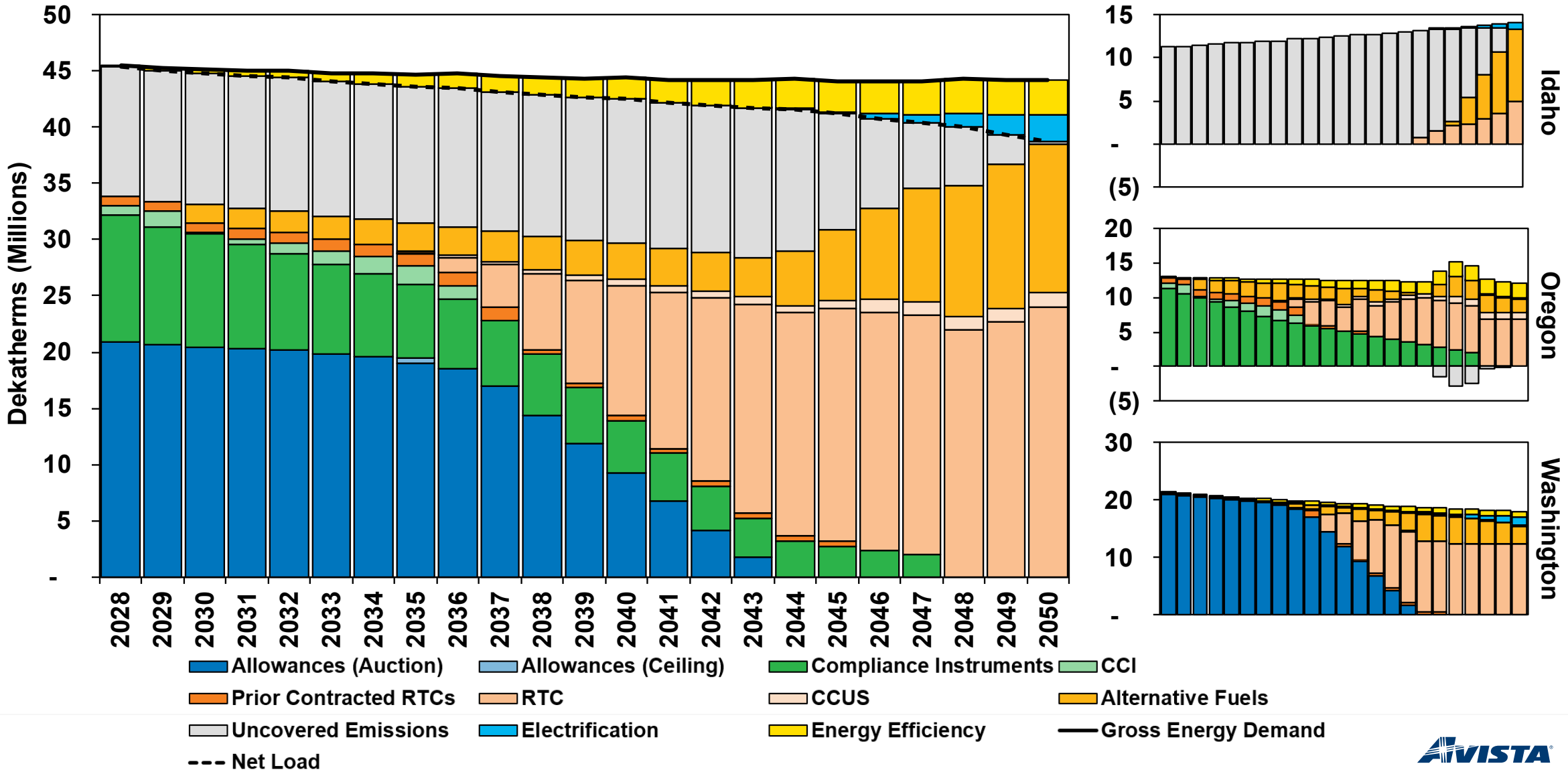
No Climate Programs

Counterfactual study of if the CCA and CPP end



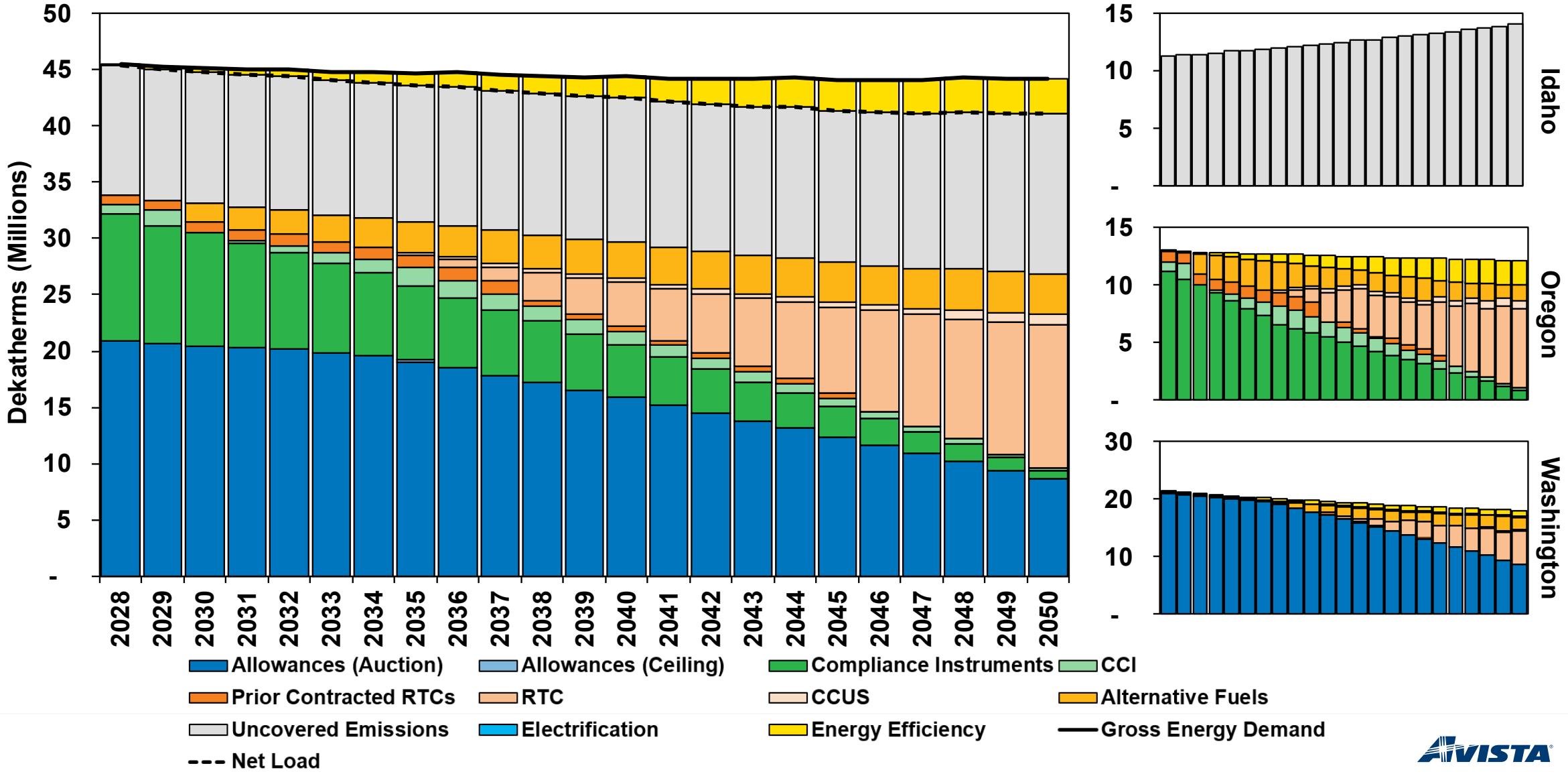
Zero GHG by 2050

Trend emissions to zero by 2050



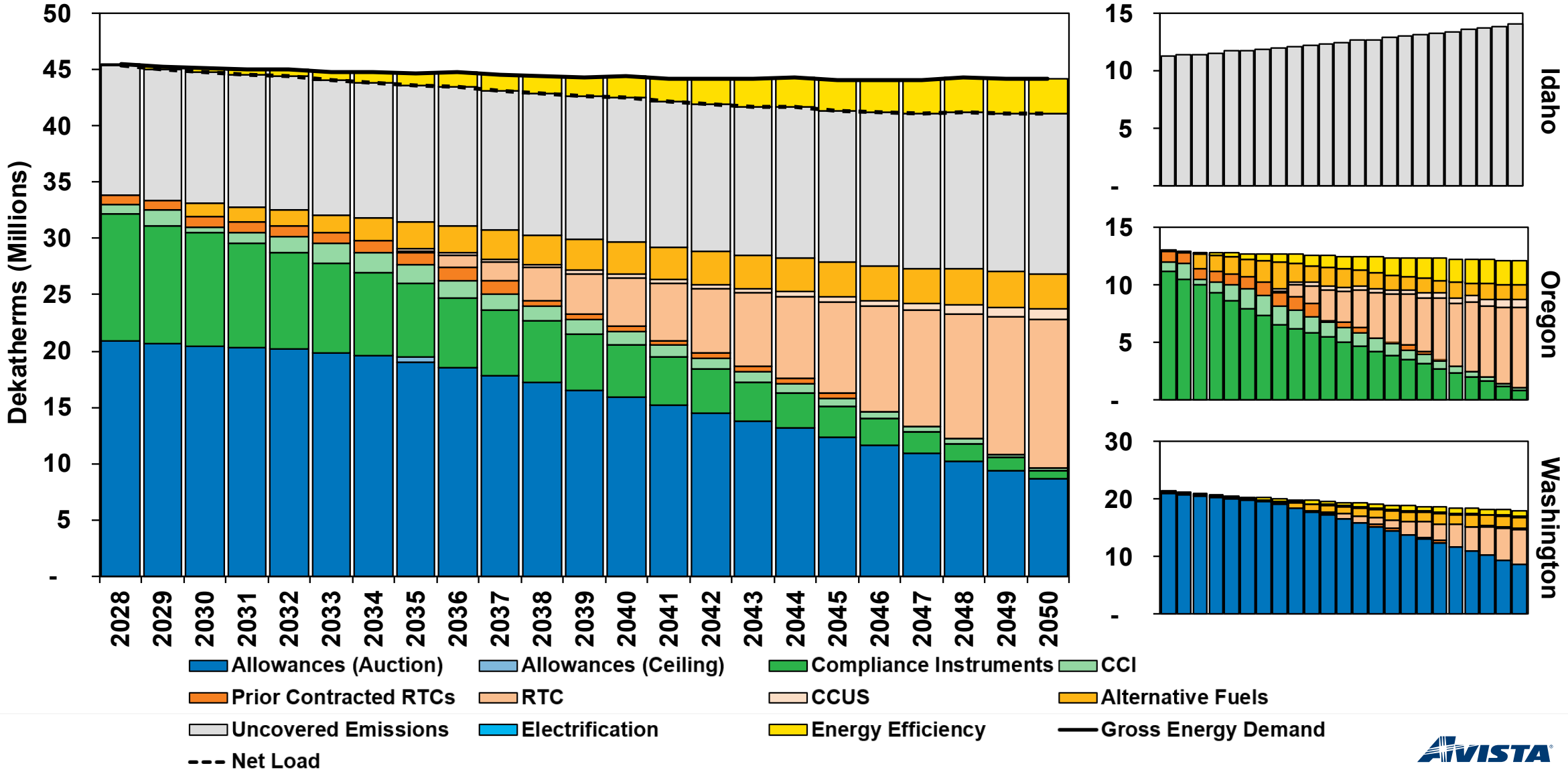
Low Renewable Resource Costs

50% lower CapEx by 2030



High Renewable Resource Costs

50% higher CapEx by 2030



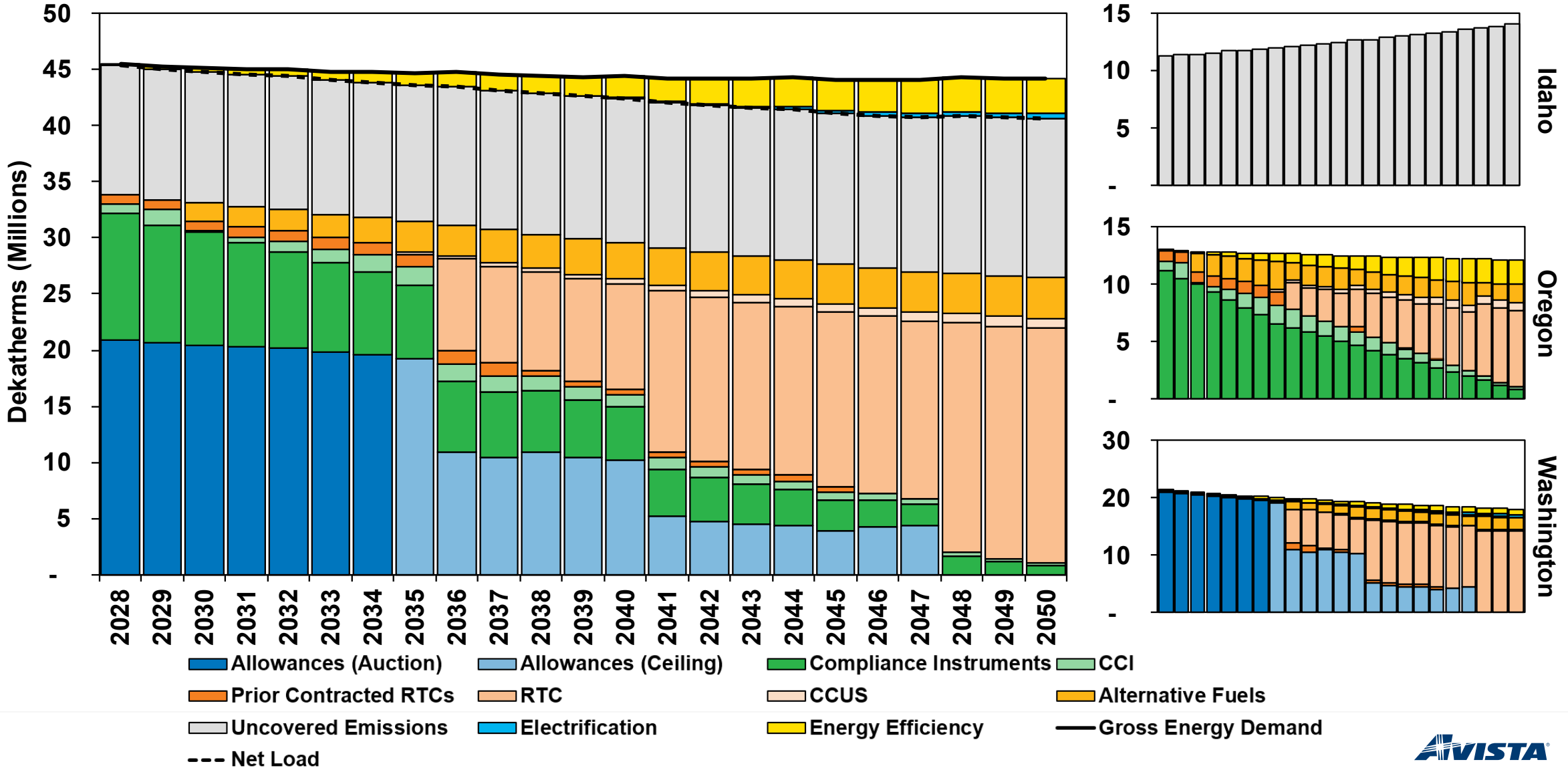
IRA Returns in 2030

Renewable energy tax credits return in 2030

Results for not available at this time.

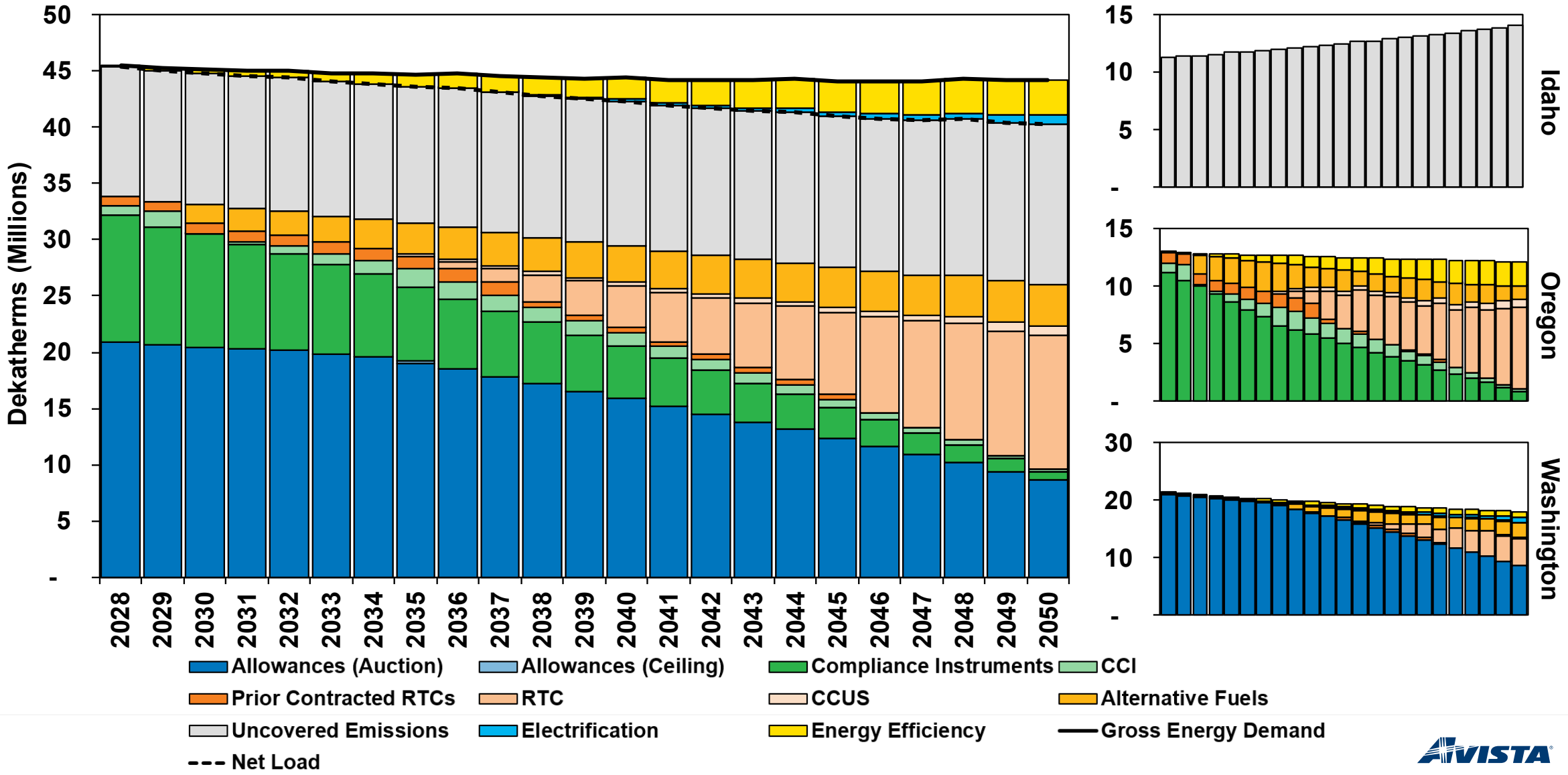
High CCA Pricing

Allowance prices trend to ceiling by 2035



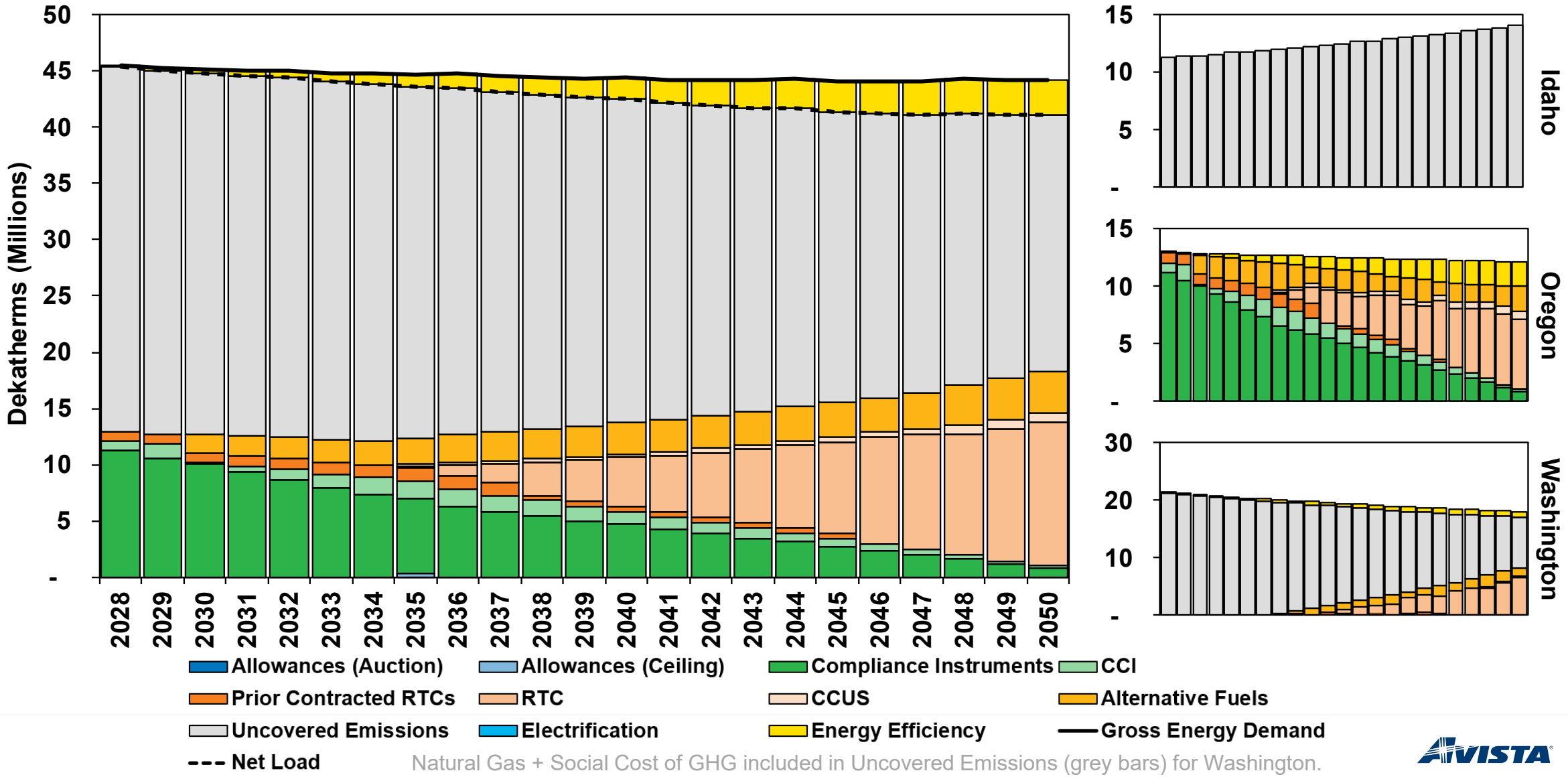
High Natural Gas Prices

95th percentile of Monte Carlo price draws



Social Cost of Greenhouse Gas

SCGHG applied to CO_2 emitting resources in Washington and Oregon



Natural Gas + Social Cost of GHG included in Uncovered Emissions (grey bars) for Washington.

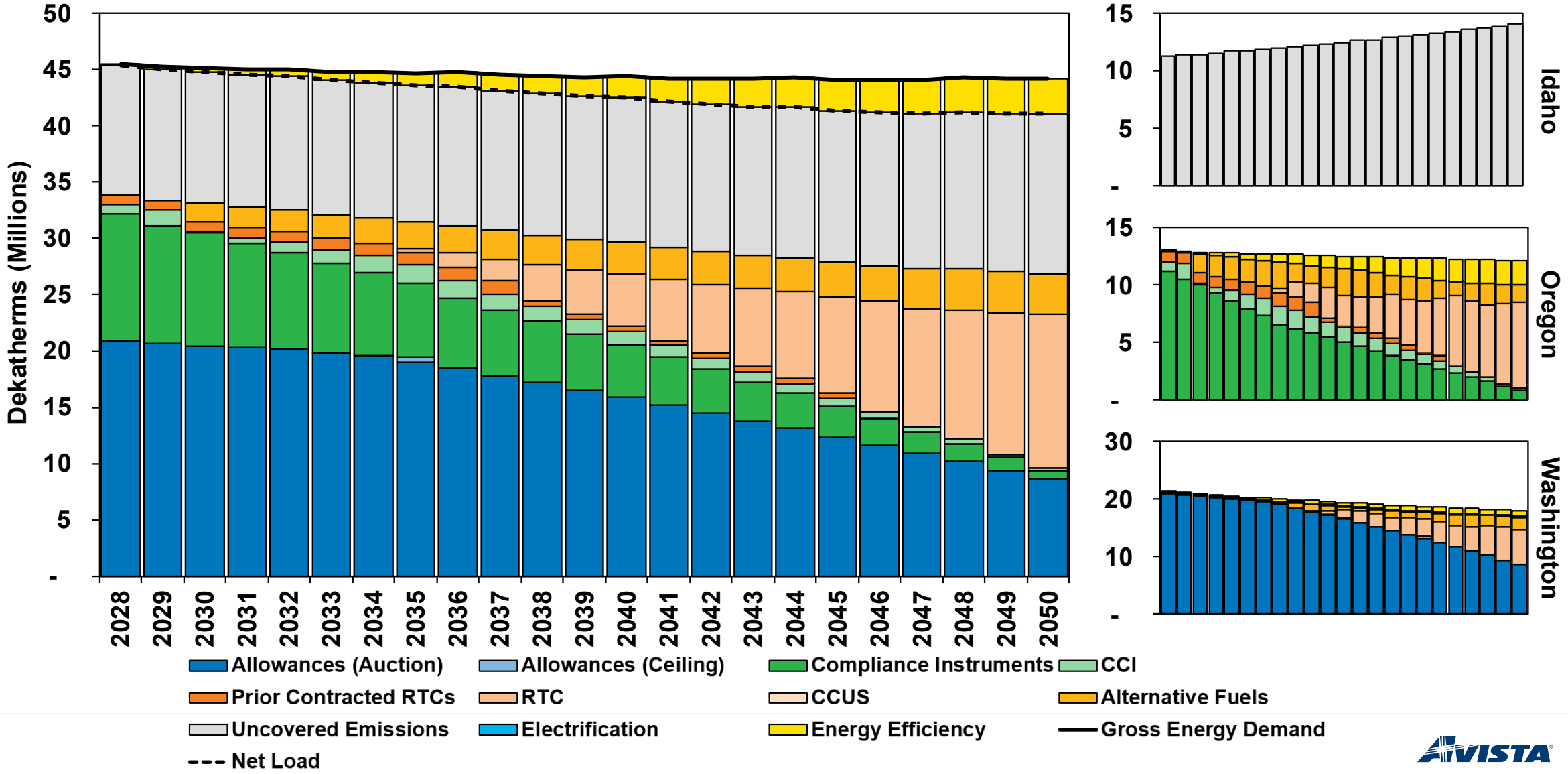
Resiliency

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

Results not depicted due to nature of model analysis.

No CO_2 Sequestration

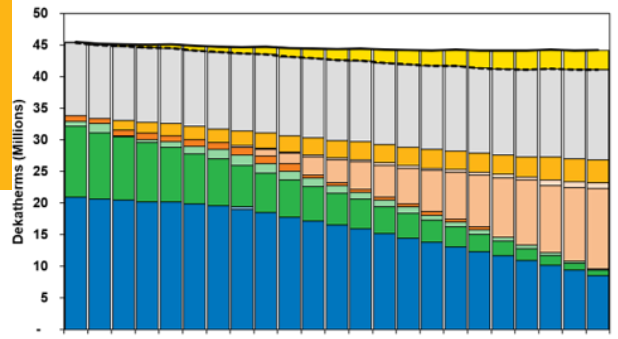
CCUS technology is not available



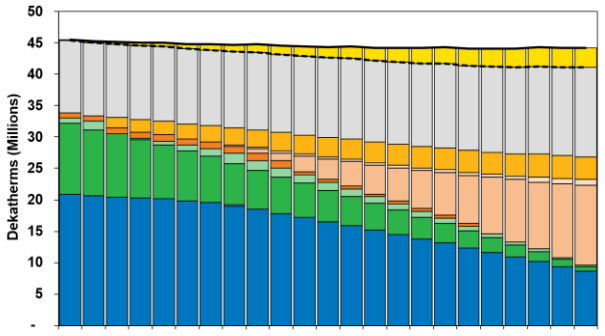
5% Incremental Cost Cap

Limit annual portfolio cost increases to 5%

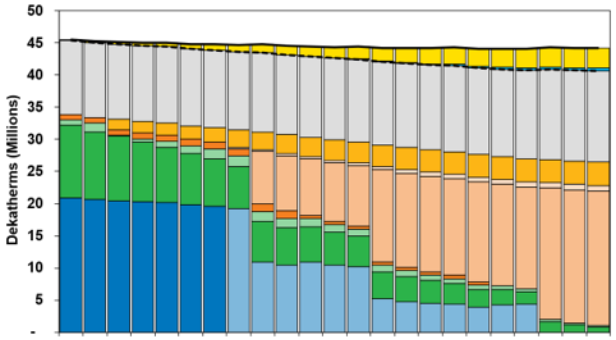
Results for not available at this time.



PRS



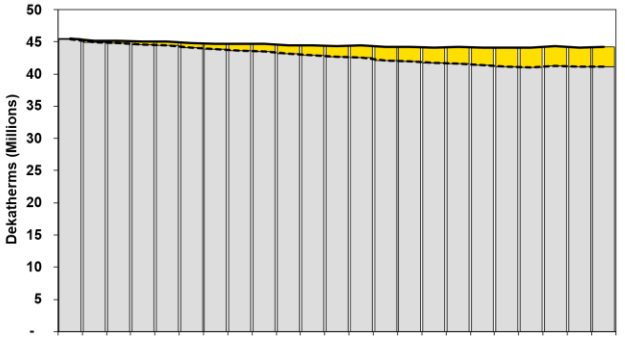
Low Renewable Resource Costs



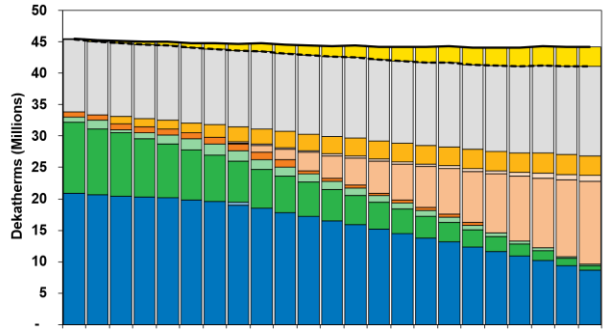
High CCA Pricing

Results not depicted due to nature of model analysis.

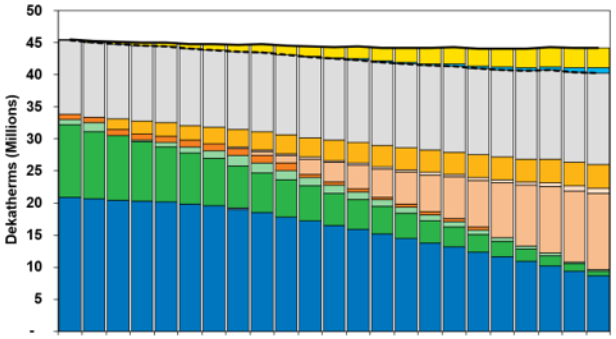
Resiliency



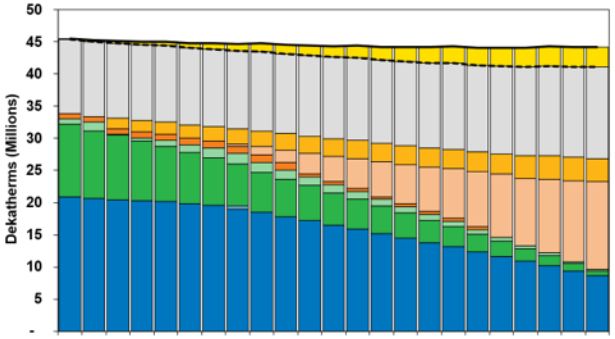
No Climate Programs



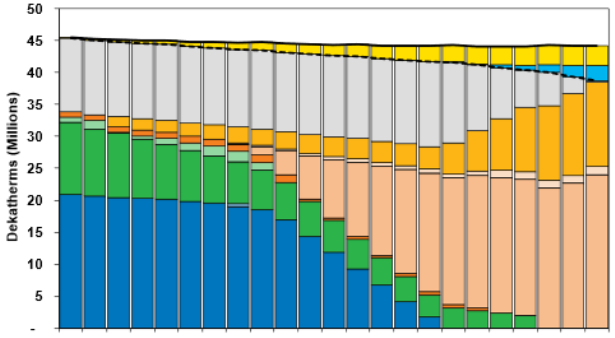
High Renewable Resource Costs



High Natural Gas Prices



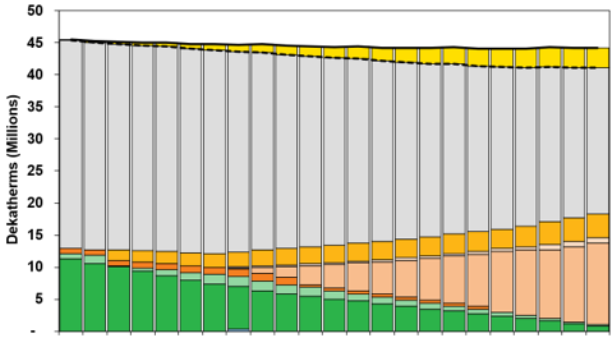
No CO2 Sequestration



Zero GHG by 2050

Results not available at this time.

IRA Returns in 2030



SCGHG

Results not available at this time.

5% Cost Cap

		Load-Varying							PRS	High CCA Pricing	High Natural Gas Prices	High Renewable Resource Costs	IRA Returns in 2030	Low Renewable Resource Costs	No Climate Programs	No CO2 Sequestration	Resiliency	Social Cost of GHG	Zero GHG by 2050	5% Incremental Cost Cap
		Appliance Replacement	Average Weather	High Growth	High Natural Gas Retail Pricing	Hybrid Heating	No New Customers After 2030	Perfect Storm												
Idaho	Prior Contracted RTCs																			
	RTC																		2044	
	Alternative Fuels																		2044	
	Electrification																		2045	
Oregon	CCI	2028	2028	2028	2028		2028	2028	2028	2028	2028	2028		2028		2028		2028	2028	
	Compliance Instruments	2028	2028	2028	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	2028		2028	2028	
	RTC	2039	2035	2035	2035		2036	2029	2035	2036	2036	2035		2036		2035		2035	2035	
	CCUS	2035	2035	2035	2035		2035	2035	2035	2035	2035	2035		2035				2035	2035	
	Alternative Fuels	2030	2030	2030	2030		2030	2030	2030	2030	2030	2030		2030		2030		2030	2030	
	Electrification							2040			2049								2046	
Washington	Allowances (Auction)	2028	2028	2028	2028		2028	2028	2028	2028	2028	2028		2028		2028			2028	
	Allowances (Ceiling)		2035	2035	2035		2035	2035	2035	2035	2035	2035		2035		2035		2035	2035	
	Prior Contracted RTCs	2045	2041	2037	2037		2035	2030	2037	2036	2035	2037		2038		2038		2036	2039	
	RTC	2040	2038	2037	2036		2038	2044	2038	2036	2039	2038		2039		2037		2036	2037	
	CCUS		2047	2047	2049		2049	2043	2048	2039	2048	2047		2048				2048	2039	
	Alternative Fuels	2030	2035	2035	2035		2035	2030	2035	2034	2035	2035		2035		2035		2035	2035	
	Electrification		2048	2048				2033	2050	2039	2036	2050		2050		2050		2050	2041	
System	Allowances (Auction)	2028	2028	2028	2028		2028	2028	2028	2028	2028	2028		2028		2028			2028	
	Allowances (Ceiling)		2035	2035	2035		2035	2035	2035	2035	2035	2035		2035		2035		2035	2035	
	CCI	2028	2028	2028	2028		2028	2028	2028	2028	2028	2028		2028		2028		2028	2028	
	Compliance Instruments	2028	2028	2028	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	2028		2028	2028	
	RTC	2039	2035	2035	2035		2036	2029	2035	2036	2036	2035		2036		2035		2035	2035	
	CCUS	2035	2035	2035	2035		2035	2035	2035	2035	2035	2035		2035				2035	2035	
	Alternative Fuels	2030	2030	2030	2030		2030	2030	2030	2030	2030	2030		2030		2030		2030	2030	
	Electrification		2048	2048				2033	2050	2039	2036	2050		2050		2050		2050	2041	
	Non-Compliance																			

Values indicate the first year a resource option was selected. A resource option is not selected where there is no corresponding value shown.
Results for Hybrid Heating, IRA Returns in 2030, and 5% Incremental Cost Cap are not available at this time.
Results for Resiliency are not applicable due to nature of model analysis.

Washington CCA Allowances

Dekatherms (000s)	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050
Appliance Replacement	20,298	19,456	18,711	18,015	17,419	16,732	16,141	15,318	14,585	13,774	13,040	12,331	11,685	10,979	10,330	9,693	9,097	8,451	7,837	7,220	6,632	5,985	5,351
Average Weather	20,606	20,454	20,306	20,151	20,002	19,843	19,686	19,514	18,575	17,982	17,373	16,748	16,111	15,457	14,792	14,114	13,426	12,727	12,012	11,281	10,541	9,771	8,979
High Growth	20,946	20,679	20,486	20,286	20,161	19,889	19,687	19,471	18,556	17,864	17,221	16,566	15,955	15,224	14,537	13,841	13,180	12,425	11,699	10,961	10,251	9,444	8,652
High Natural Gas Retail Pricing	20,935	20,656	20,447	20,218	20,058	19,754	19,519	19,264	18,319	17,592	16,910	16,215	15,561	14,789	14,060	13,325	12,628	11,847	11,091	10,325	9,593	8,771	7,971
No New Customers After 2030	20,938	20,666	20,466	20,177	20,036	19,750	19,535	18,956	18,391	17,694	17,047	16,388	15,773	15,040	14,352	13,655	12,994	12,240	11,516	10,780	10,072	9,269	8,482
Perfect Storm	20,298	19,456	18,026	17,018	16,562	15,516	14,974	12,720	12,143	11,559	11,767	11,398	11,040	10,695	10,360	9,666	344	13	195	-	-	-	-
PRS	20,938	20,666	20,466	20,260	20,129	19,852	19,646	19,425	18,510	17,815	17,171	16,514	15,901	15,169	14,481	13,784	13,122	12,367	11,642	10,904	10,194	9,388	8,598
High CCA Pricing	20,938	20,666	20,466	20,260	20,129	19,852	19,644	19,177	10,954	10,463	10,870	10,474	10,225	5,149	4,707	4,538	4,417	3,902	4,307	4,351	-	-	-
High Natural Gas Prices	20,938	20,666	20,466	20,260	20,129	19,852	19,646	19,177	18,510	17,815	17,171	16,514	15,901	15,169	14,481	13,784	13,122	12,367	11,642	10,904	10,194	9,388	8,598
High Renewable Resource Costs	20,938	20,666	20,466	20,260	20,129	19,852	19,646	19,425	18,510	17,815	17,171	16,514	15,901	15,169	14,481	13,784	13,122	12,367	11,642	10,904	10,194	9,388	8,598
Low Renewable Resource Costs	20,938	20,666	20,466	20,260	20,129	19,852	19,646	19,177	18,510	17,815	17,171	16,514	15,901	15,169	14,481	13,784	13,122	12,367	11,642	10,904	10,194	9,388	8,598
No Climate Programs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
No CO2 Sequestration	20,938	20,666	20,466	20,260	20,129	19,852	19,646	19,425	18,510	17,815	17,171	16,514	15,901	15,169	14,481	13,784	13,122	12,367	11,642	10,904	10,194	9,388	8,598
Social Cost of Greenhouse Gas	-	-	-	-	-	-	-	372	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Zero GHG by 2050	20,938	20,666	20,466	20,260	20,129	19,852	19,646	19,424	18,510	17,024	14,357	11,809	9,251	6,724	4,167	1,733	-	-	-	-	-	-	-
Hybrid Heating	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
IRA Returns in 2030	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5% Incremental Cost Cap	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Resiliency	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Results for Hybrid Heating, IRA Returns in 2030, and 5% Incremental Cost Cap are not available at this time.
Results for Resiliency are not applicable due to nature of model analysis.

Oregon Community Climate Investment (CCI)

Dekatherms (000s)	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050
Appliance Replacement	468	685	-	-	-	-	-	-	-	68	1,042	1,255	1,170	1,063	977	870	784	677	592	484	399	292	206
Average Weather	715	1,314	57	505	858	1,282	1,622	1,641	1,555	1,448	1,363	1,255	1,170	1,063	977	870	784	677	592	484	399	292	206
High Growth	852	1,410	144	583	959	1,342	1,673	1,641	1,555	1,448	1,363	1,255	1,170	1,063	977	870	784	677	592	484	399	292	206
High Natural Gas Retail Pricing	832	1,372	86	504	856	1,215	1,521	1,641	1,555	1,448	1,363	1,255	1,170	1,063	977	870	784	677	592	484	399	292	206
No New Customers After 2030	835	1,376	95	228	542	867	1,139	1,641	1,555	1,448	1,363	1,255	1,170	1,063	977	870	784	677	592	484	399	292	206
Perfect Storm	468	-	-	-	-	-	-	1,641	1,555	1,448	1,363	1,255	1,170	1,063	977	870	784	677	592	484	399	292	206
PRS	835	1,376	95	518	877	1,245	1,560	1,641	1,555	1,448	1,363	1,255	1,170	1,063	977	870	784	677	592	484	399	292	206
High CCA Pricing	835	1,376	95	518	877	1,245	1,562	1,641	1,555	1,448	1,363	1,255	1,170	1,063	977	870	784	677	592	484	399	292	206
High Natural Gas Prices	835	1,376	59	257	596	946	1,222	1,641	1,555	1,448	1,363	1,255	1,170	1,063	977	870	784	677	592	484	399	292	206
High Renewable Resource Costs	835	1,376	489	955	1,356	1,763	1,824	1,641	1,555	1,448	1,363	1,255	1,170	1,063	977	870	784	677	592	484	399	292	206
Low Renewable Resource Costs	835	1,376	-	257	589	931	1,222	1,641	1,555	1,448	1,363	1,255	1,170	1,063	977	870	784	677	592	484	399	292	206
No Climate Programs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
No CO2 Sequestration	835	1,376	95	518	877	1,245	1,560	1,641	1,555	1,448	1,363	1,255	1,170	1,063	977	870	784	677	592	484	399	292	206
Social Cost of Greenhouse Gas	835	1,376	95	518	877	1,245	1,560	1,641	1,555	1,448	1,363	1,255	1,170	1,063	977	870	784	677	592	484	399	292	206
Zero GHG by 2050	835	1,376	95	518	877	1,245	1,560	1,641	1,205	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hybrid Heating	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
IRA Returns in 2030	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5% Incremental Cost Cap	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Resiliency	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Results for Hybrid Heating, IRA Returns in 2030, and 5% Incremental Cost Cap are not available at this time.
Results for Resiliency are not applicable due to nature of model analysis.

Electrification

Dekatherms (000s)	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050
Appliance Replacement	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Average Weather	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	37	74	217
High Growth	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	37	74	110
High Natural Gas Retail Pricing	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
No New Customers After 2030	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfect Storm	-	-	-	-	-	23	50	80	114	150	186	223	264	306	347	388	591	794	997	1,200	1,339	1,481	1,591
PRS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	37
High CCA Pricing	-	-	-	-	-	-	-	-	-	-	-	37	74	110	147	184	221	258	294	331	368	405	441
High Natural Gas Prices	-	-	-	-	-	-	-	-	33	69	106	143	180	216	253	290	327	364	400	437	474	677	876
High Renewable Resource Costs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	37
Low Renewable Resource Costs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	37
No Climate Programs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
No CO2 Sequestration	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	37
Social Cost of Greenhouse Gas	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	37
Zero GHG by 2050	-	-	-	-	-	-	-	-	-	-	-	-	-	-	37	74	110	170	396	724	1,194	1,739	2,398
Hybrid Heating	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
IRA Returns in 2030	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5% Incremental Cost Cap	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Resiliency	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Results for Hybrid Heating, IRA Returns in 2030, and 5% Incremental Cost Cap are not available at this time.
Results for Resiliency are not applicable due to nature of model analysis.

Renewable Thermal Certificates (RTC)

Dekatherms (000s)	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050
Appliance Replacement	-	-	-	-	-	-	-	-	-	-	-	59	388	791	1,147	1,644	2,102	2,632	3,642	4,279	4,920	5,707	6,452
Average Weather	-	-	-	-	-	-	-	198	1,090	1,738	3,158	3,898	4,558	5,355	6,074	6,933	7,721	8,650	10,026	10,303	11,256	12,395	13,350
High Growth	-	-	-	-	-	-	-	240	1,153	1,748	3,148	3,867	4,546	5,271	5,960	6,787	7,592	8,431	9,768	10,303	10,978	12,014	13,028
High Natural Gas Retail Pricing	-	-	-	-	-	-	-	62	927	1,467	2,805	3,454	4,057	4,699	5,296	6,025	6,724	7,455	8,670	9,419	10,356	10,575	11,478
No New Customers After 2030	-	-	-	-	-	-	-	-	491	1,026	2,364	3,019	3,633	4,298	4,924	5,688	6,424	7,204	8,476	9,289	10,295	10,590	11,573
Perfect Storm	-	685	685	685	685	685	685	685	685	685	685	685	685	685	685	685	9,652	9,652	9,652	9,652	9,652	9,652	9,652
PRS	-	-	-	-	-	-	-	112	1,005	1,584	2,967	3,668	4,329	5,037	5,707	6,517	7,302	8,123	9,441	10,300	10,641	11,693	12,685
High CCA Pricing	-	-	-	-	-	-	-	-	8,182	8,540	8,858	9,136	9,377	14,377	14,641	14,866	15,054	15,580	15,713	15,823	20,467	20,677	20,876
High Natural Gas Prices	-	-	-	-	-	-	-	-	593	1,119	2,451	3,103	3,717	4,380	5,006	5,773	6,516	7,297	8,575	9,481	10,363	10,998	11,829
High Renewable Resource Costs	-	-	-	-	-	-	-	112	1,005	1,584	2,967	3,668	4,329	5,037	5,707	6,517	7,302	8,123	9,441	10,303	11,112	12,166	13,160
Low Renewable Resource Costs	-	-	-	-	-	-	-	-	627	1,188	2,557	3,246	3,897	4,596	5,260	6,063	6,843	7,660	8,975	9,918	10,623	11,675	12,668
No Climate Programs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
No CO2 Sequestration	-	-	-	-	-	-	-	336	1,252	1,854	3,259	3,983	4,666	5,397	6,090	6,922	7,729	8,573	9,914	10,413	11,489	12,578	13,607
Social Cost of Greenhouse Gas	-	-	-	-	-	-	-	112	1,005	1,584	2,967	3,668	4,329	5,037	5,707	6,516	7,302	8,123	9,441	10,300	10,641	11,693	12,685
Zero GHG by 2050	-	-	-	-	-	-	-	42	1,285	3,753	6,733	9,136	11,500	13,879	16,269	18,545	19,823	20,651	21,196	21,343	21,977	22,653	23,997
Hybrid Heating	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
IRA Returns in 2030	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5% Incremental Cost Cap	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Resiliency	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Results for Hybrid Heating, IRA Returns in 2030, and 5% Incremental Cost Cap are not available at this time.
Results for Resiliency are not applicable due to nature of model analysis.

Alternative Fuels

Dekatherms (000s)	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050
Appliance Replacement	-	-	691	991	1,246	1,531	1,773	2,337	2,457	2,564	2,660	2,743	2,815	2,877	2,929	2,974	3,011	3,043	3,069	3,090	3,196	3,211	3,223
Average Weather	-	-	1,593	1,754	1,911	2,062	2,205	2,337	2,457	2,564	2,660	2,743	2,815	2,877	2,929	2,974	3,011	3,043	3,069	3,559	3,580	3,597	3,611
High Growth	-	-	1,593	1,754	1,911	2,062	2,205	2,337	2,457	2,564	2,660	2,743	2,815	2,877	2,929	2,974	3,011	3,043	3,069	3,347	3,580	3,597	3,611
High Natural Gas Retail Pricing	-	-	1,593	1,754	1,911	2,062	2,205	2,337	2,457	2,564	2,660	2,743	2,815	2,877	2,929	2,974	3,011	3,043	3,069	3,177	3,196	3,597	3,611
No New Customers After 2030	-	-	1,593	1,754	1,911	2,062	2,205	2,337	2,457	2,564	2,660	2,743	2,815	2,877	2,929	2,974	3,011	3,043	3,069	3,177	3,196	3,597	3,611
Perfect Storm	-	-	691	1,302	1,418	2,039	2,205	2,337	2,457	2,564	2,741	2,826	2,899	2,962	3,015	3,428	3,470	3,505	3,535	3,559	3,579	3,593	3,605
PRS	-	-	1,593	1,754	1,911	2,062	2,205	2,337	2,457	2,564	2,660	2,743	2,815	2,877	2,929	2,974	3,011	3,043	3,069	3,177	3,580	3,597	3,611
High CCA Pricing	-	-	1,593	1,754	1,911	2,062	2,205	2,696	2,835	2,960	3,069	3,165	3,247	3,317	3,377	3,428	3,470	3,505	3,535	3,559	3,580	3,597	3,614
High Natural Gas Prices	-	-	1,629	2,015	2,191	2,361	2,543	2,696	2,835	2,960	3,069	3,165	3,247	3,317	3,377	3,428	3,470	3,505	3,535	3,559	3,598	3,615	3,628
High Renewable Resource Costs	-	-	1,199	1,317	1,432	1,544	1,941	2,337	2,457	2,564	2,660	2,743	2,815	2,877	2,929	2,974	3,011	3,043	3,069	3,090	3,109	3,124	3,136
Low Renewable Resource Costs	-	-	1,688	2,015	2,199	2,376	2,543	2,696	2,835	2,960	3,069	3,165	3,247	3,317	3,377	3,428	3,470	3,505	3,535	3,559	3,598	3,615	3,628
No Climate Programs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
No CO2 Sequestration	-	-	1,593	1,754	1,911	2,062	2,205	2,337	2,457	2,564	2,660	2,743	2,815	2,877	2,929	2,974	3,011	3,043	3,069	3,559	3,580	3,597	3,611
Social Cost of Greenhouse Gas	-	-	1,593	1,754	1,911	2,062	2,205	2,337	2,457	2,564	2,660	2,743	2,815	2,877	2,929	2,974	3,011	3,043	3,069	3,177	3,580	3,597	3,611
Zero GHG by 2050	-	-	1,593	1,754	1,911	2,062	2,205	2,407	2,528	2,635	3,069	3,165	3,247	3,317	3,377	3,533	4,759	6,226	8,143	10,120	11,690	12,831	13,260
Hybrid Heating	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
IRA Returns in 2030	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5% Incremental Cost Cap	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Resiliency	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Results for Hybrid Heating, IRA Returns in 2030, and 5% Incremental Cost Cap are not available at this time.
Results for Resiliency are not applicable due to nature of model analysis.

Portfolio Costs

		2028 - 2047		2028 - 2050	
		Net Present Value	Levelized Cost	Net Present Value	Levelized Cost
Load Varying	Hybrid Heating	$0	$0	$0	$0
	Appliance Replacement	$3,097,546	$287,113	$3,370,971	$293,127
	Average Weather	$4,273,838	$396,144	$4,772,142	$414,968
	High Growth	$4,284,735	$397,154	$4,776,132	$415,315
	High Natural Gas Retail Pricing	$4,128,382	$382,661	$4,564,695	$396,929
	No New Customers After 2030	$3,990,301	$369,863	$4,413,801	$383,808
	Perfect Storm	$4,496,941	$416,823	$4,941,021	$429,653
	PRS	**$4,216,639**	**$390,842**	**$4,690,757**	**$407,891**
	High CCA Pricing	$4,972,725	$460,924	$5,522,055	$480,178
	High Natural Gas Prices	$5,238,635	$485,571	$5,900,609	$513,095
	No Climate Programs	$2,430,123	$225,249	$2,677,997	$232,869
	No CO2 Sequestration	$4,220,716	$391,220	$4,697,182	$408,450
	Social Cost of Greenhouse Gas	$4,839,512	$448,576	$5,343,961	$464,691
	Zero GHG by 2050	$4,711,221	$436,685	$5,525,016	$480,435
	Low Renewable Resource Costs	$4,139,407	$383,683	$4,604,045	$400,351
	High Renewable Resource Costs	$4,277,585	$396,491	$4,759,695	$413,886
	Zero GHG by 2050	#N/A	#N/A	#N/A	#N/A
	Resiliency	$0	$0	$0	$0
	5% Incremental Cost Cap	$0	$0	$0	$0
	IRA Returns in 2030	$0	$0	$0	$0

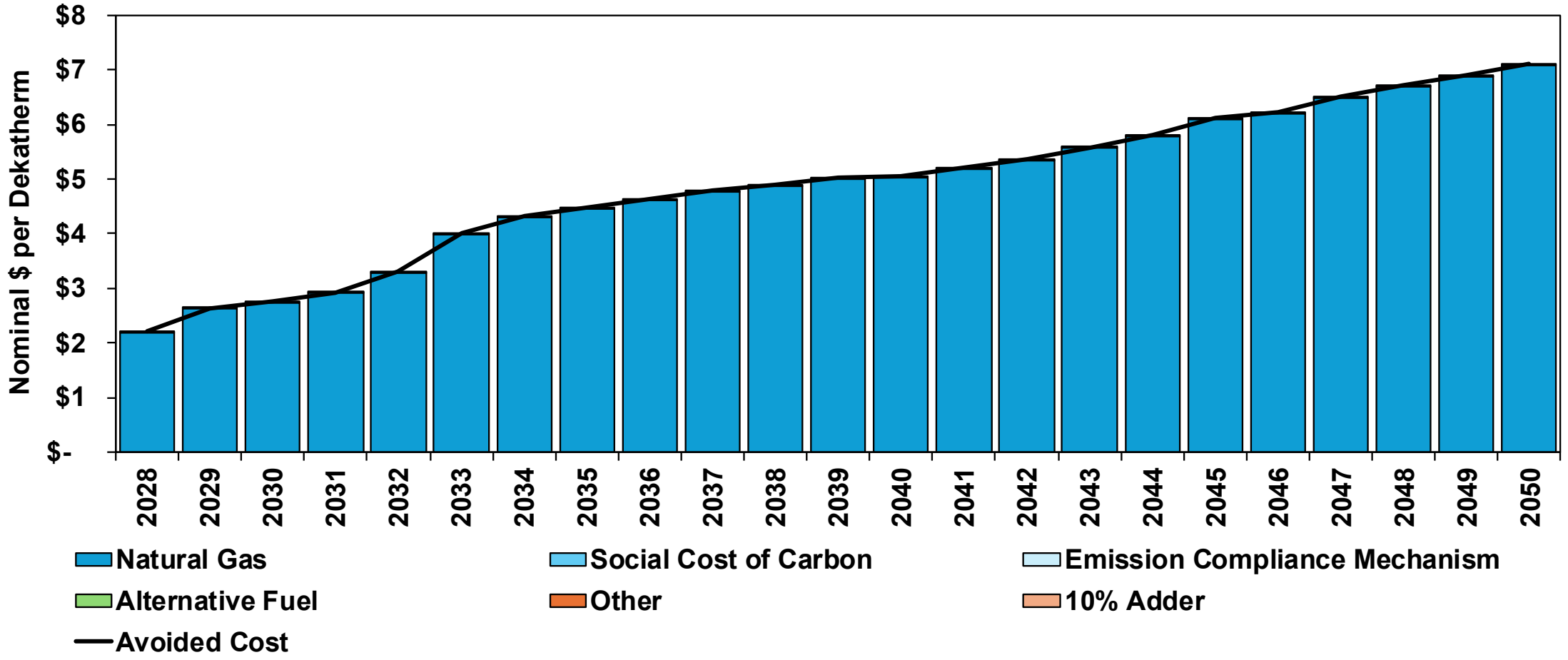
Results for Hybrid Heating, IRA Returns in 2030, and 5% Incremental Cost Cap are not available at this time.
Results for Resiliency are not applicable due to nature of model analysis.

Natural Gas Avoided Cost

TAC 15 – November 18, 2026

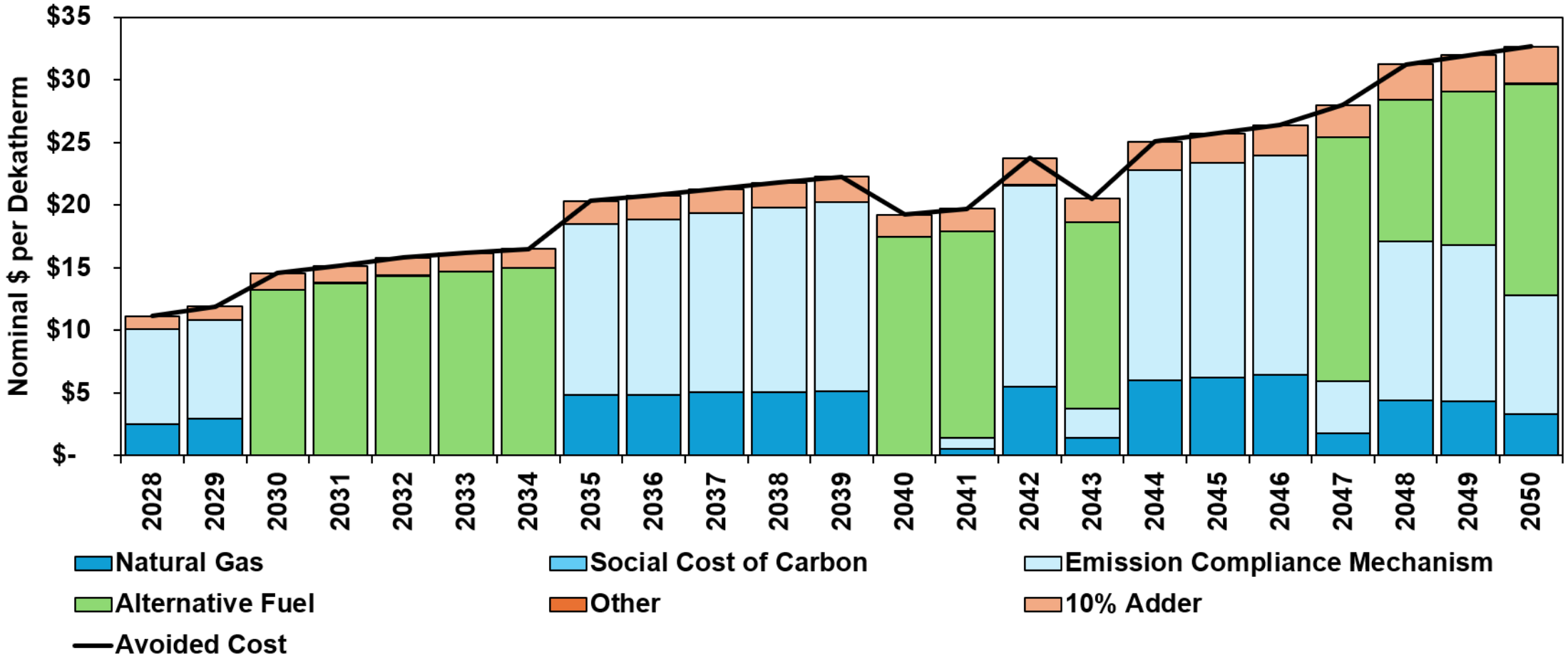
Michael Brutocao, Natural Gas Planning Manager

Annual Avoided Cost - Idaho



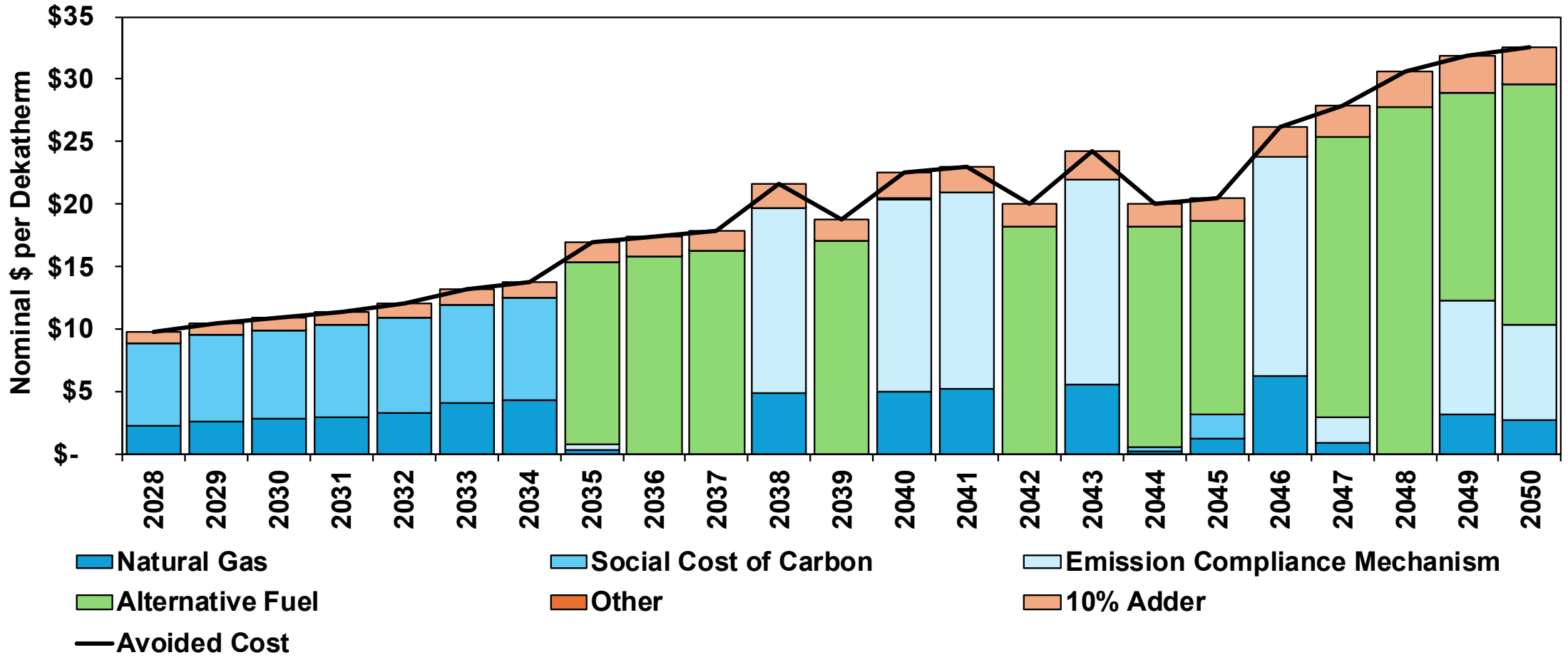
Natural Gas is inclusive of commodity purchases and pipeline fuel rates and flow charges.
Other includes value of distribution system deferred investment.
Avoided costs shown are for residential, commercial, and industrial customers.

Annual Avoided Cost - Oregon



Natural Gas is inclusive of commodity purchases and pipeline fuel rates and flow charges.
Other includes value of distribution system deferred investment.
Avoided costs shown are for residential, commercial, and industrial customers.

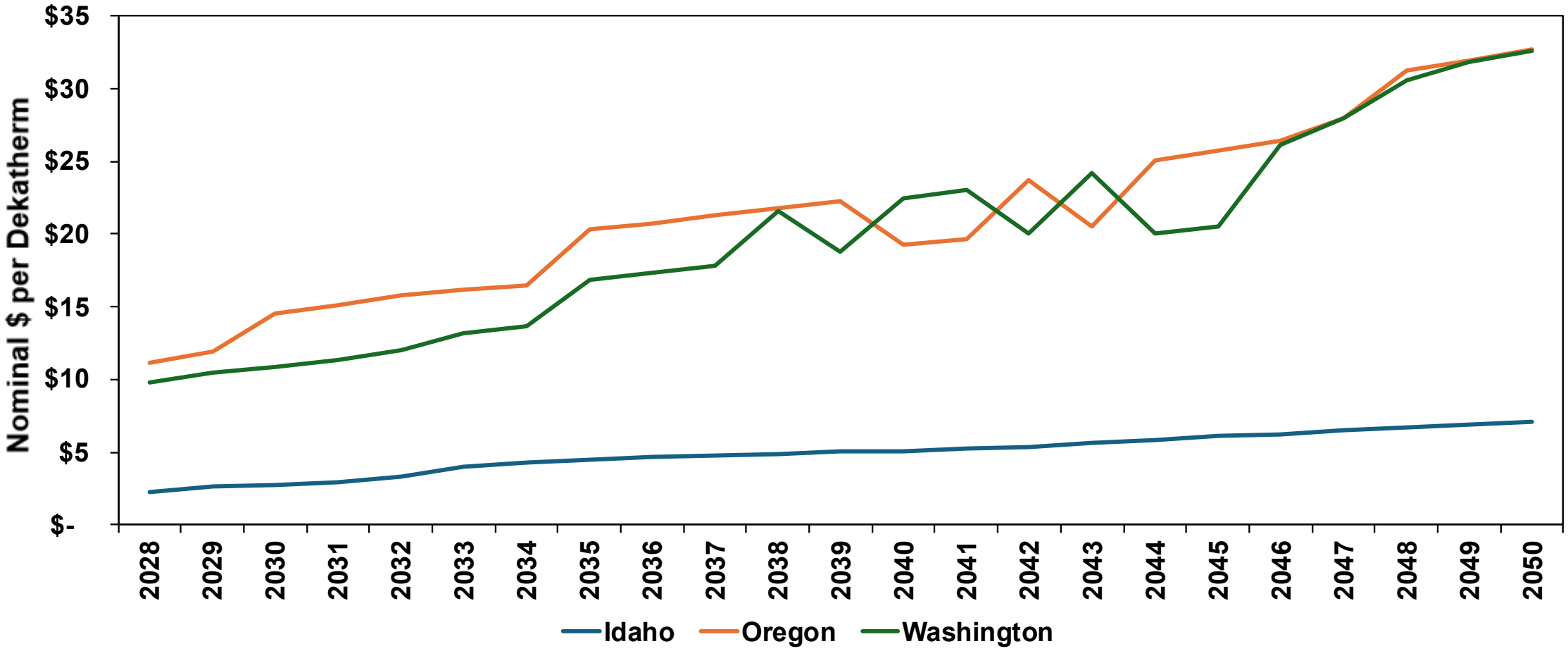
Annual Avoided Cost - Washington



Natural Gas is inclusive of commodity purchases and pipeline fuel rates and flow charges.
Other includes value of distribution system deferred investment.
Avoided costs shown are for residential, commercial, and industrial customers.

Annual Avoided Costs

Levelized Cost per Dekatherm	2028-2047	2028-2050
Idaho	$4.14	$4.31
Oregon	$18.17	$19.02
Washington	$16.03	$16.99



Avoided costs shown are for residential, commercial, and industrial customers.

Natural Gas
2027 Gas IRP Document Outline

TAC 15 – November 18, 2026

Michael Brutocao, Natural Gas Planning Manager

Updated 2027 Natural Gas IRP Format

- 2027 IRP will have three major sections plus appendices
  1. Resource Plan
  2. Planning Environment
  3. Technical Support
  - Appendices

Resource Plan

1. Customer Demand Forecast
   - Annual Load Forecast
   - Energy Efficiency Impacts
   - Peak Day Demand Forecast
2. Resource Need Assessment
   - Peak Day Demand vs. Supply Capacity
   - Annual Supply Capacity Position
   - CCA Compliance (WA)
   - CPP Compliance (OR)
3. Preferred Resource Strategy
   - Supply-Side and Compliance Selections
   - Pipeline and Storage Requirements
   - Idaho, Oregon and Washington PRS
   - Emissions and Compliance Forecast
   - Cost and Rate Projections
   - Avoided Cost
   - Risk Assessment
4. Qualitative Risk Assessment

Resource Plan

5. Portfolio Scenario Analysis
    - Scenario Assumptions
    - Scenario Results
    - Cost Comparison
    - Risk Analysis
    - Emissions
    - Portfolio Selection

6. Action Plan
    - 2025 IRP Update
    - 2029 IRP Action Items

Planning Environment

1. Policy Considerations
   - IRP Policy Objectives
   - State
   - Federal
2. Existing Supply-Side Resources
   - Natural Gas Basins and Market Hubs
   - Storage
   - Existing Renewables Contracts
   - Procurement Plan and Risk Management
3. Pipeline Transportation System
5. Distribution System
   - Distribution System Planning
   - Non-Pipeline Alternatives
   - Planning Results
6. Customer Equity and Metrics
   - Energy Justice
   - Non-Energy Impacts
   - Customer Equity Metrics
   - Affordability and Energy Burden

Technical Support

1. Modeling Methodology
   - Overall Modeling Process
   - Methodology Changes
2. Load Forecast Methodology
   - Service Area Economic Conditions
   - Customers
   - Weather
   - Peak Day Design Temperature
   - End Use
   - Electrification
3. Demand-Side Resource Options
   - Energy Efficiency
   - Electrification
4. Supply-Side Resource Options
   - Natural Gas
   - Alternative Fuels
   - Emissions Compliance Mechanisms
   - Storage
   - RNG Program Considerations

Appendices

- Appendix A: TAC Items
- Appendix B: Workplan
- Appendix C: Conservation Potential Assessment
- Appendix D: Public Data files
- Appendix E: Confidential Data Files
- Appendix F: TAC & Public Comments

2027 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.
- Pursue cost-effective energy efficiency savings in Washington and for Low-Income and Transport customers in Oregon.
- Work with ETO to pursue cost-effective energy efficiency savings in Oregon.
- 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.
- Update ICF Alternative Fuels Study.
- Investigate CCA price forecast in the linked California-Québec carbon markets.
- 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