



In the Community to Serve®

Integrated Resource Plan Targeted Technical Advisory Group Meeting #3

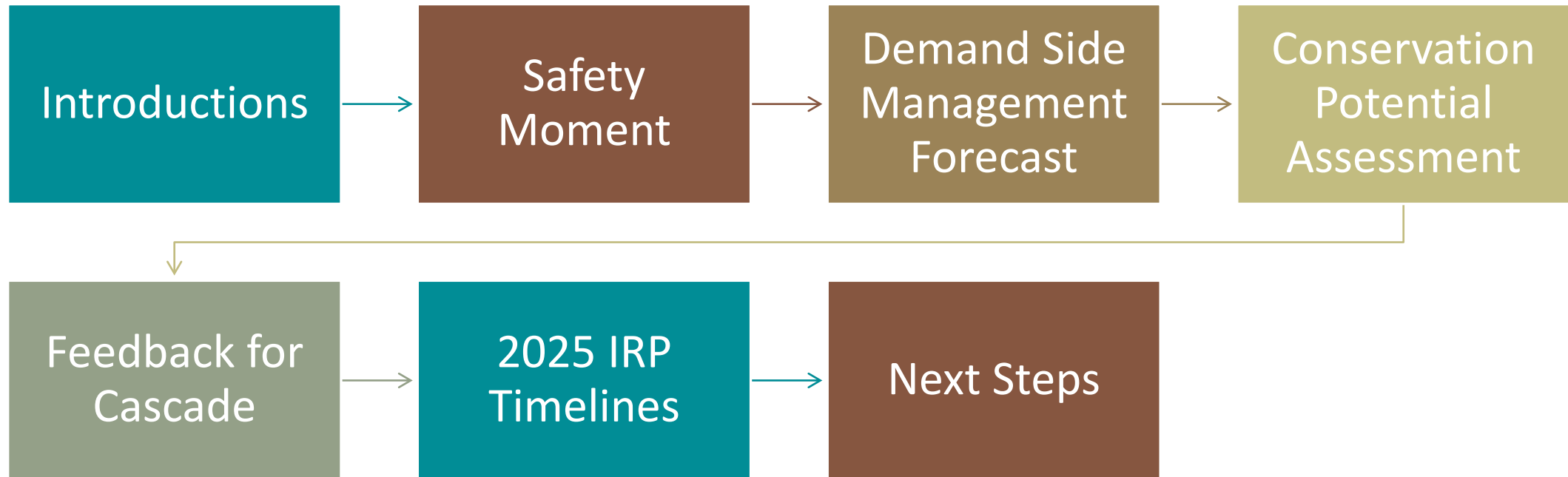
MARCH 6, 2024

MICROSOFT TEAMS/TELECONFERENCE



In the Community to Serve®

Agenda



Safety Moment

Coping with Stress

Everyone reacts differently to stressful situations.
Here are just some ways that help to reduce or deal with stress:

- Take breaks from reading, watching, or listening to news stories, and social media.
- Take care of your mind and body:
 - Take deep breaths, meditate, or stretch.
 - Eat healthy, well-balanced meals.
 - Get plenty of sleep.
 - Take time to exercise regularly.
 - Avoid alcohol and drugs.
- Take time to unwind.
- Find and participate in some activities you enjoy.
- Connect with others by talking with people you trust about your concerns and share your feelings.



Demand Side Management Forecast, 2025 IRP

Caleb Reimer

March 6, 2024

DSM Topics

Overview

- Program Performance
- Conservation Potential Assessment

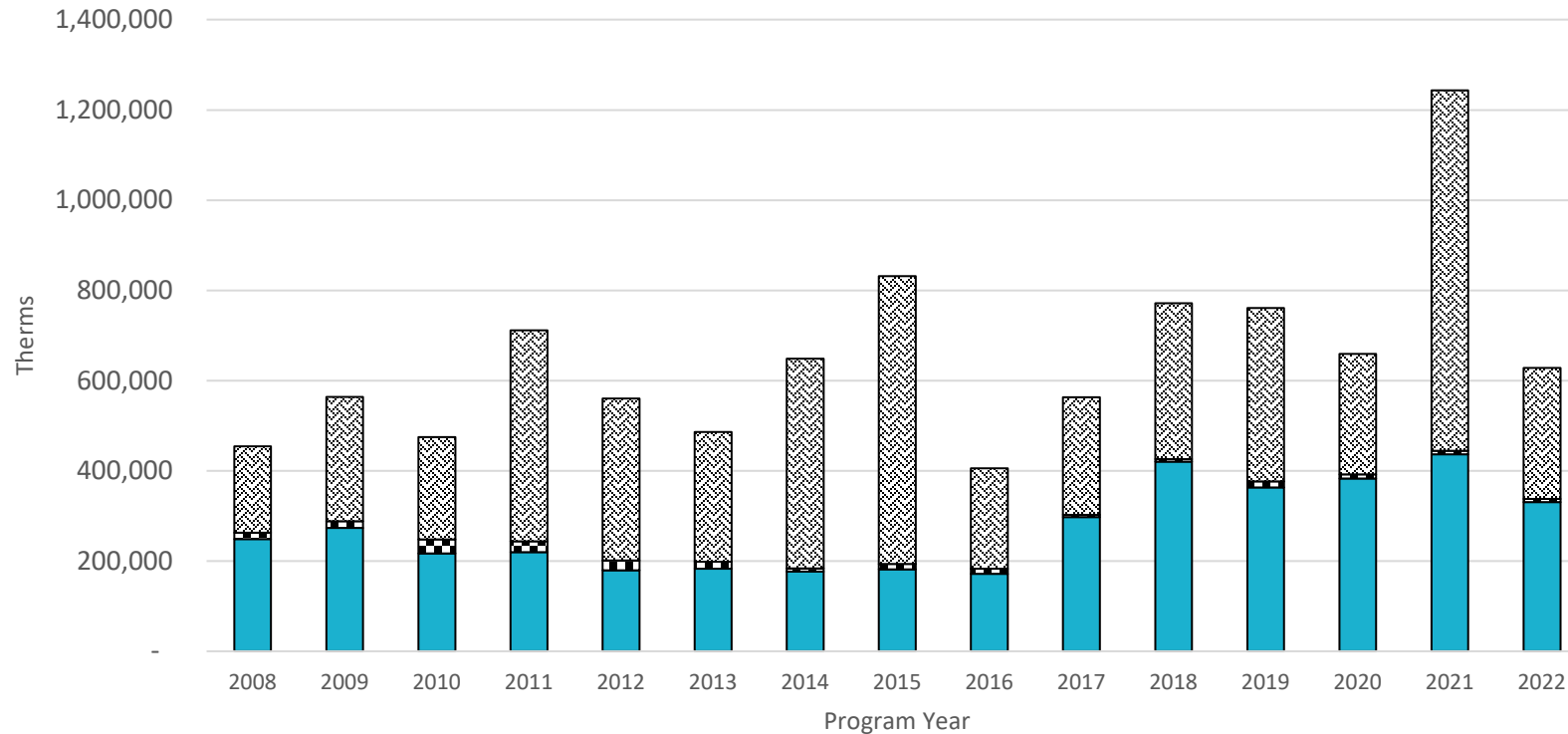
Energy Efficiency Forecast

Energy Efficiency Programs

- Commercial and Industrial
- Residential
- Portfolio

Overview

EE Annual Savings 2008-Present



Preliminary 2023 Savings

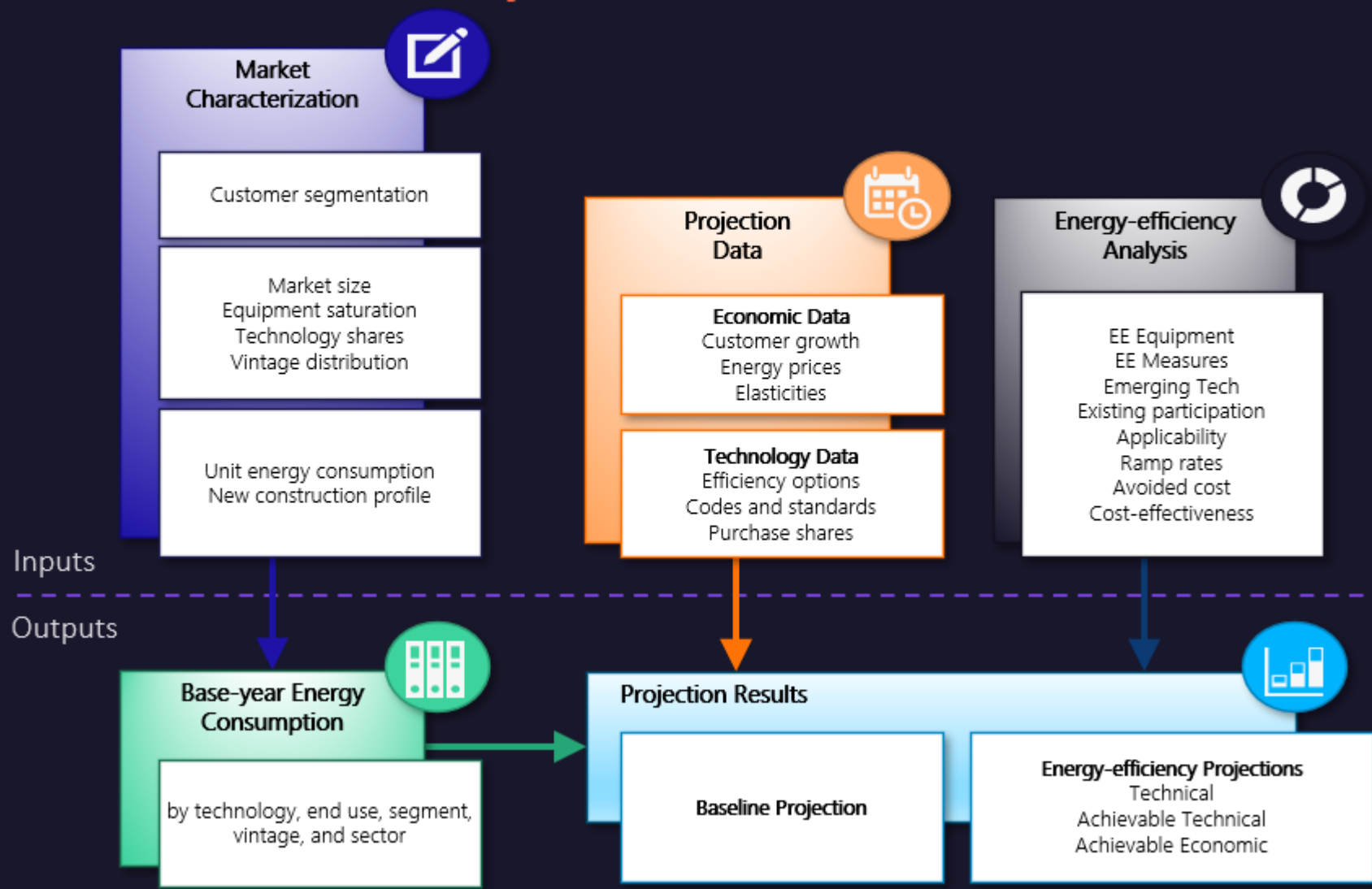
Program	Therm Savings
Residential	604,132
Commercial	429,519
Low-Income	15,612

2023: Residential energy savings record

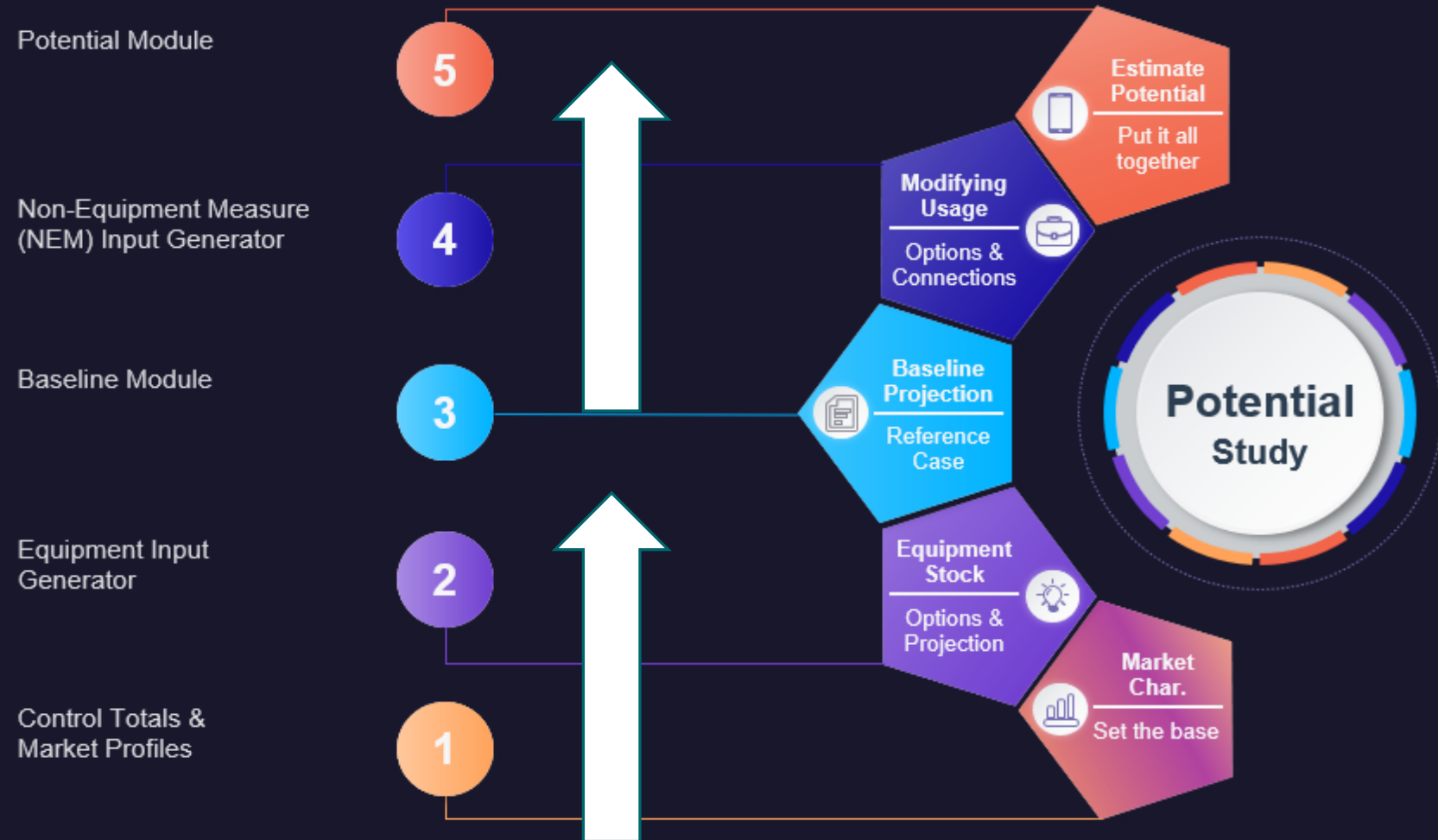
- 39% more than previous record in 2021
- Record incentive dispersion– \$6.1 Million
- 99% of biennial residential therm savings goal met

Conservation Potential Assessment

LoadMAP Analysis Framework



LoadMAP Analysis Framework

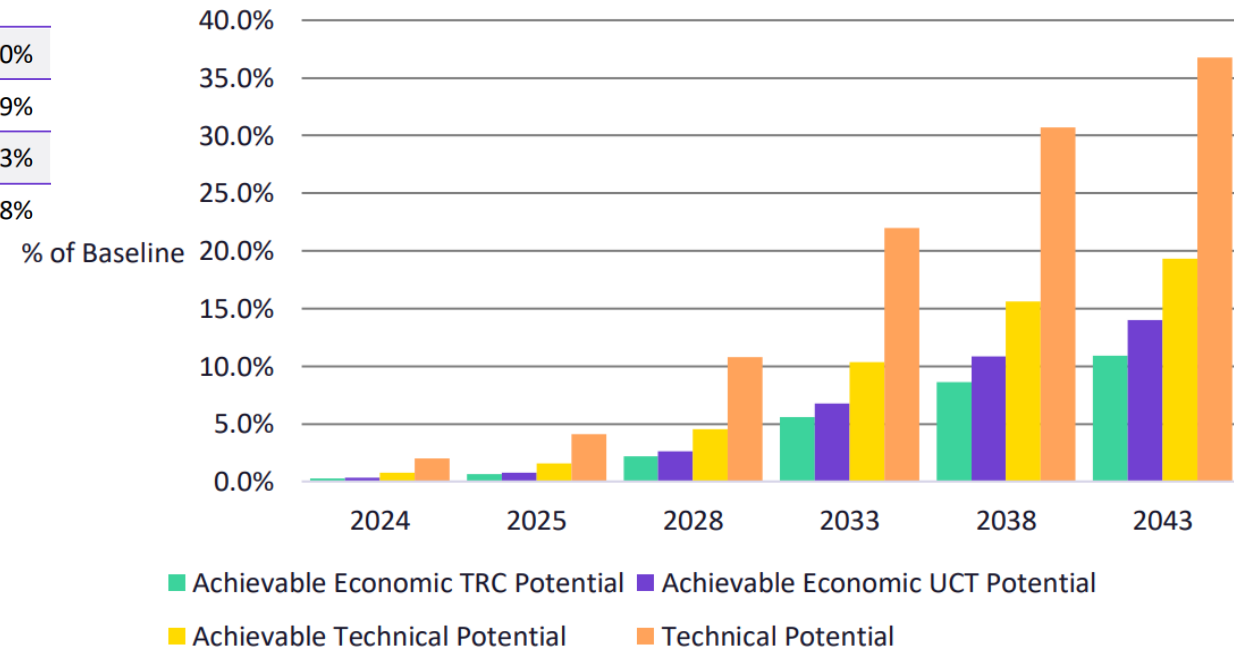


Portfolio

Portfolio Energy Efficiency Potential

Scenario	2024	2025	2028	2033	2038	2043
Baseline Projection (thousand therms)	229,381	225,522	213,715	195,878	181,440	169,938
Cumulative Savings (thousand therms)						
UCT Achievable Economic Potential	815	1,782	5,544	13,241	19,672	23,777
TRC Achievable Economic Potential	669	1,475	4,648	10,899	15,660	18,490
Achievable Technical Potential	1,685	3,540	9,674	20,333	28,372	32,828
Technical Potential	4,621	9,288	23,102	42,998	55,754	62,474
Cumulative Savings (% of Baseline)						
UCT Achievable Economic Potential	0.4%	0.8%	2.6%	6.8%	10.8%	14.0%
TRC Achievable Economic Potential	0.3%	0.7%	2.2%	5.6%	8.6%	10.9%
Achievable Technical Potential	0.7%	1.6%	4.5%	10.4%	15.6%	19.3%
Technical Potential	2.0%	4.1%	10.8%	22.0%	30.7%	36.8%

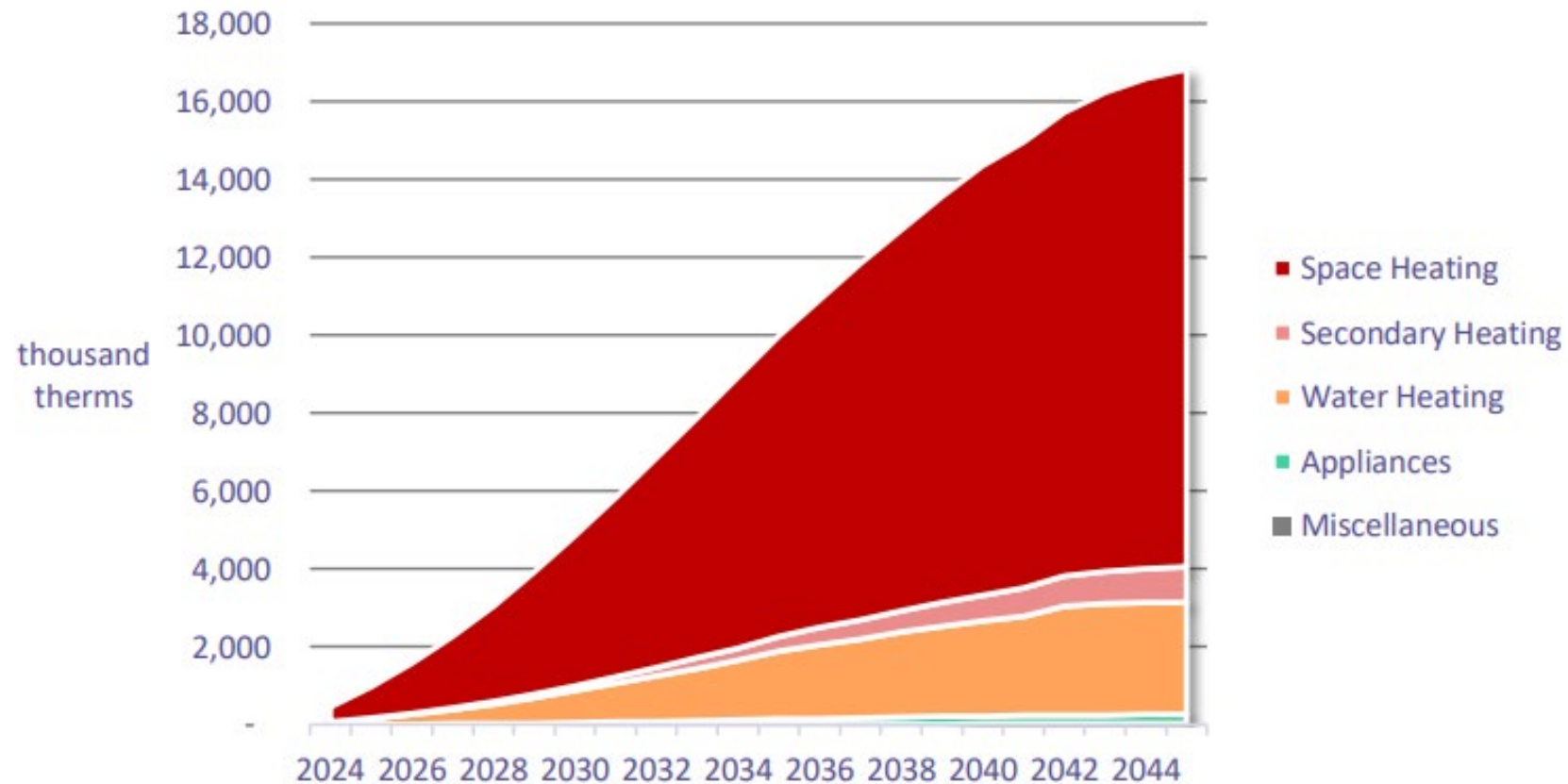
Summary of Energy Efficiency Potential as % of Baseline Projection (thousand therms)



RESIDENTIAL

Energy Efficiency 2045

Cumulative UCT Achievable Potential Forecast



RESIDENTIAL FORECAST SUMMARY

Scenario	2024	2025	2028	2033	2038	2043
Baseline Forecast (thousand therms)	123,075	121,020	115,263	106,878	99,641	93,064
Cumulative Savings (thousand therms)						
Achievable Economic UCT Potential	446	970	3,048	7,884	12,712	16,244
Achievable Economic TRC Potential	299	646	2,017	5,204	8,415	10,782
Achievable Technical Potential	563	1,218	3,824	9,981	16,059	20,148
Technical Potential	3,082	6,133	15,032	28,879	39,108	45,067
Energy Savings (% of Baseline)						
Achievable Economic UCT Potential	0.4%	0.8%	2.6%	7.4%	12.8%	17.5%
Achievable Economic TRC Potential	0.2%	0.5%	1.7%	4.9%	8.4%	11.6%
Achievable Technical Potential	0.5%	1.0%	3.3%	9.3%	16.1%	21.6%
Technical Potential	2.5%	5.1%	13.0%	27.0%	39.2%	48.4%

Residential Top Ten Measures

Rank	Measure / Technology	2024 Cumulative Savings (thousand therms)	% of Total	2025 Cumulative Savings (thousand therms)	% of Total
1	Insulation - Ceiling, Upgrade - R-49 to R-60 depending on space	115	25.9%	233	24.0%
2	Furnace - Direct Fuel - AFUE 97% (CEE Tier 3)	110	24.6%	241	24.8%
3	Insulation - Wall Cavity, Installation - R-14 to R-21 depending on space	46	10.3%	92	9.5%
4	Insulation - Ceiling, Installation - R-49 to R-60 depending on space	42	9.5%	85	8.8%
5	Water Heater <= 55 gal. - UEF 0.95 (Instantaneous, ENERGY STAR 5.0)	33	7.4%	79	8.2%
6	Ducting - Repair and Sealing - 50% reduction in duct leakage	14	3.1%	35	3.6%
7	Insulation - Basement Sidewall - R-15	13	3.0%	34	3.5%
8	ENERGY STAR Clothes Washers - ENERGY STAR unit	12	2.6%	23	2.4%
9	Water Heater - Pipe Insulation - Insulated 5' of pipe between unit and conditioned space	8	1.7%	19	2.0%
10	Fireplace - Tier 2 (77%+ FE Rating)	7	1.6%	17	1.8%

COMMERCIAL & INDUSTRIAL

COMMERCIAL FORECAST SUMMARY

Scenario	2024	2025	2028	2033	2038	2043
Baseline Forecast (thousand therms)	85,692	83,581	76,682	66,254	57,956	51,866
Cumulative Savings (thousand therms)						
Achievable Economic UCT Potential	301	670	2,084	4,457	5,722	6,104
Achievable Economic TRC Potential	304	690	2,224	4,796	6,016	6,294
Achievable Technical Potential	1,045	2,162	5,388	9,350	10,941	11,104
Technical Potential	1,445	2,959	7,509	12,916	15,019	15,548
Energy Savings (% of Baseline)						
Achievable Economic UCT Potential	0.4%	0.8%	2.7%	6.7%	9.9%	11.8%
Achievable Economic TRC Potential	0.4%	0.8%	2.9%	7.2%	10.4%	12.1%
Achievable Technical Potential	1.2%	2.6%	7.0%	14.1%	18.9%	21.4%
Technical Potential	1.7%	3.5%	9.8%	19.5%	25.9%	30.0%

Commercial Top Ten Measures

Rank	Measure / Technology	2024 Cumulative Potential Savings (thousand therms)	% of Total	2025 Cumulative Potential Savings (thousand therms)	% of Total
1	Insulation - Roof/Ceiling - R-38	48	15.9%	120	17.9%
2	Insulation - Wall Cavity - R-21	44	14.6%	109	16.3%
3	Gas Boiler - Insulate Hot Water Lines - Insulated water lines	22	7.2%	42	6.3%
4	Gas Boiler - Stack Economizer - Economizer installed	20	6.7%	39	5.9%
5	Gas Boiler - Hot Water Reset - Reset control installed	19	6.3%	40	6.0%
6	Water Heater - TE 94% (ENERGY STAR 2.0)	16	5.4%	34	5.1%
7	Water Heater - Ozone Laundry - Ozone laundry system	12	3.9%	23	3.4%
8	Boiler - TE 98%	12	3.8%	24	3.5%
9	Furnace - AFUE 96%	11	3.8%	26	3.9%
10	Gas Boiler - High Turndown - Turndown control installed	10	3.3%	19	2.9%

INDUSTRIAL FORECAST SUMMARY

Scenario	2024	2025	2028	2033	2038	2043
Baseline Forecast (thousand therms)	20,614	20,920	21,770	22,747	23,843	25,008
Cumulative Savings (thousand therms)						
Achievable Economic UCT Potential	68	142	412	900	1,238	1,429
Achievable Economic TRC Potential	67	139	407	899	1,229	1,413
Achievable Technical Potential	77	160	461	1,002	1,372	1,576
Technical Potential	94	195	561	1,203	1,627	1,859
Energy Savings (% of Baseline)						
Achievable Economic UCT Potential	0.3%	0.7%	1.9%	4.0%	5.2%	5.7%
Achievable Economic TRC Potential	0.3%	0.7%	1.9%	4.0%	5.2%	5.7%
Achievable Technical Potential	0.4%	0.8%	2.1%	4.4%	5.8%	6.3%
Technical Potential	0.5%	0.9%	2.6%	5.3%	6.8%	7.4%

Industrial Top Ten Measures

Rank	Measure / Technology	2024 Cumulative Potential Savings (thousand therms)	% of Total	2025 Cumulative Potential Savings (thousand therms)	% of Total
1	Strategic Energy Management - Energy management system installed and programmed	17	24.9%	34	23.9%
2	Process - Insulate Heated Process Fluids - Insulated process fluid lines	10	14.5%	20	14.0%
3	Gas Boiler - Insulate Hot Water Lines - Insulated water lines	8	12.0%	16	11.5%
4	Gas Boiler - Stack Economizer - Economizer installed	8	11.7%	16	11.2%
5	Insulation - Roof/Ceiling - R-38	5	7.8%	14	10.2%
6	Process Heat Recovery - HR system installed	4	6.6%	9	6.3%
7	Gas Boiler - Insulate Steam Lines/Condensate Tank - Lines and condensate tank insulated	4	5.5%	8	5.3%
8	Gas Boiler - High Turndown - Turndown control installed	3	4.4%	6	4.2%
9	Gas Boiler - Maintenance - General cleaning and maintenance	3	4.3%	5	3.5%
10	Gas Boiler - Hot Water Reset - Reset control installed	3	4.1%	6	4.5%

Feedback for Cascade?

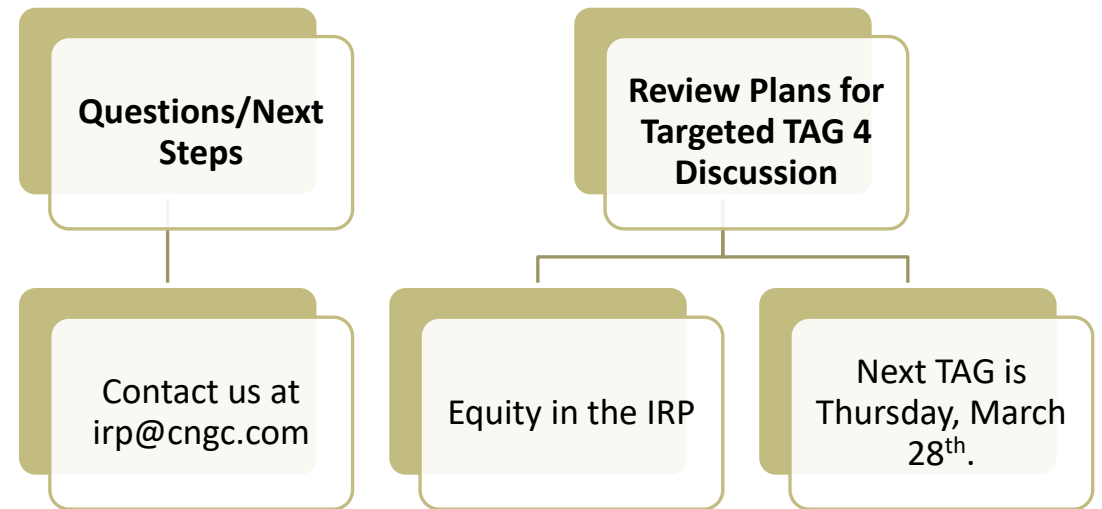
Any other changes or ideas that Cascade should consider for Energy Efficiency Modeling?

Process Item	Date	Process Element
Targeted-TAG	Thursday, January 25, 2024	What is an IRP and how to get involved
Targeted-TAG	Thursday, February 15, 2024	Avoided Cost
Targeted-TAG	Wednesday, March 6, 2024	Energy Efficiency
Targeted-TAG	Thursday, March 28, 2024	Equity in the IRP
Targeted-TAG	Thursday, April 11, 2024	Customer/Load Forecast
Targeted-TAG	Tuesday, May 7, 2024	CCA/Compliance Modeling
Targeted-TAG	Thursday, May 16, 2024	Distribution System Planning
Targeted-TAG	Thursday, May 30, 2024	Resource Integration
		Process, Key Points, IRP Team, Timeline, Regional Market Outlook, Planned Scenarios and Sensitivities, Stakeholder Engagement, Demand and Customer Forecast and Non-Core Outlook, Drilling down into segments of demand forecast.
TAG 1	Thursday, June 13, 2024	Upstream Pipeline presentation.
Receive feedback on TAG 1	Friday, June 28, 2024	
		Respond to TAG 1 Feedback, Distribution System Planning, Alternative Resources, Price Forecast, Avoided Costs, Current Supply Resources, Transport Issues, Carbon Impacts, Energy Efficiency, Bio-Natural Gas, Preliminary Resource Integration Results.
TAG 2	Thursday, July 25, 2024	
Receive feedback on TAG 2	Friday, August 9, 2024	
First Draft	Friday, September 6, 2024	
Comments Due	Friday, October 4, 2024	
		Respond to TAG 2 feedback, Final Integration Results, finalization of plan components, Proposed new 2- to 4-year Action Plan
TAG 3	Wednesday, October 30, 2024	
Final Draft	Tuesday, December 3, 2024	
Comments Due	Tuesday, January 14, 2025	
TAG 4 (if needed)	Thursday, January 30, 2025	
Final Complete By	Friday, February 14, 2025	
File	Monday, February 24, 2025	

2025 WA IRP Schedule



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