PEOPLES AND NORTH SHORE GAS MARKET POTENTIAL STUDY: PRELIMINARY POTENTIAL ESTIMATES

August 26, 2020

Draft Results Prepared for Illinois SAG

TOPICS

Review of analysis approach

Analysis for PGL

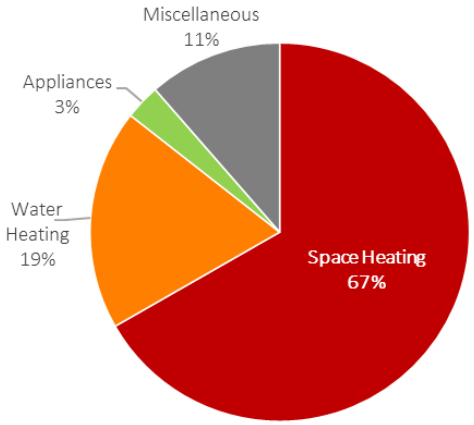
- Market characterization
- Baseline projection
- Measure adoption
- Potential estimates

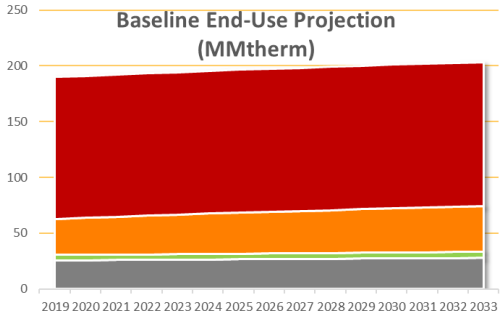
Analysis for NSG

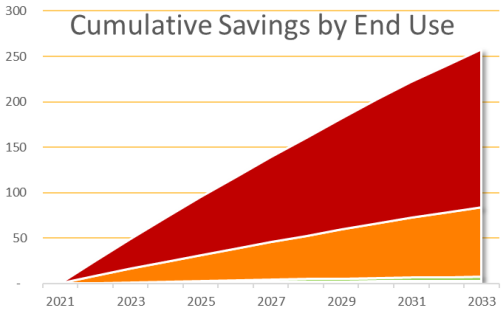
- Market characterization
- Baseline projection
- Measure adoption
- Potential estimates

AEG'S APPROACH TO THE MARKET POTENTIAL STUDY

Market Characterization → Identify Demand-side Resources → Baseline Projection → Estimation of Impacts







DATA SOURCES & MARKET RESEARCH

Primary data sources:

- PGL and NSG:
  - Billing data
  - Load forecast assumptions & results
  - Program accomplishments
  - Economic assumptions (avoided costs, discount rate, prices, etc.)
  - Previous potential study
- Illinois TRM v.8
  - Will use TRM v.9 when approved
- Secondary data
  - American Community Survey
  - EIA surveys (RECS, CBECS)
  - EIA Annual Energy Outlook
  - AEG's DEEM database

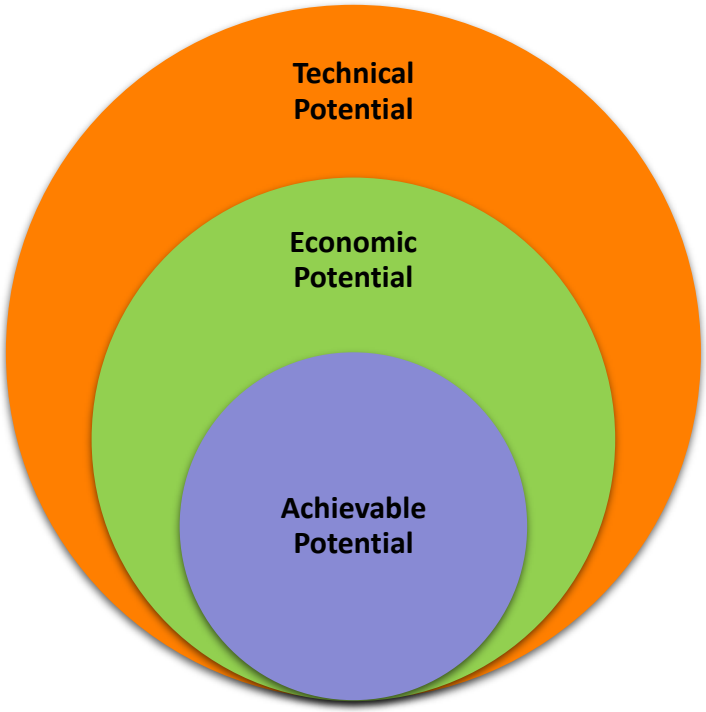
Residential customer surveys

- Scope:
  - 516 PGL customers
  - 307 NSG customers
- Mail-to-web format
- Survey topics:
  - Appliance inventories
  - Dwelling characteristics
  - Occupant characteristics
- Primary source of information for:
  - Annual use by segment
  - Appliance / technology saturations

LEVELS OF SAVINGS ESTIMATES

This study estimates three levels of energy efficiency potential:

- **Technical potential** assumes everyone chooses the most efficient option regardless of cost
- **Economic potential** is a subset of technical potential that includes only cost-effective measures
  - For each baseline condition, the most efficient, cost-effective option is used
- **Achievable potential** is a subset of economic potential that accounts for likely measure adoption within the market



PGL Residential Analysis

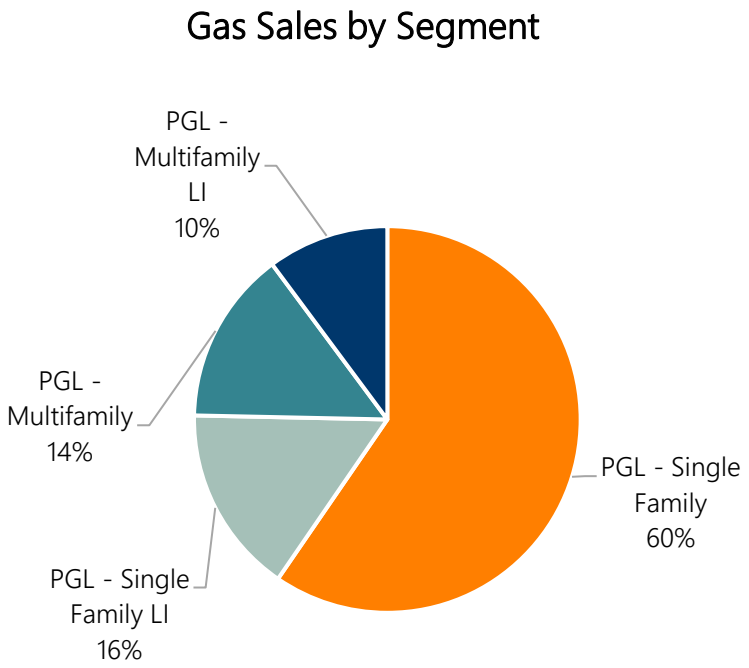
MARKET CHARACTERIZATION
PGL Residential

Sales are divided into four segments based on housing type and income level

- Utilized a combination of billing data from PGL and customer surveys to segment

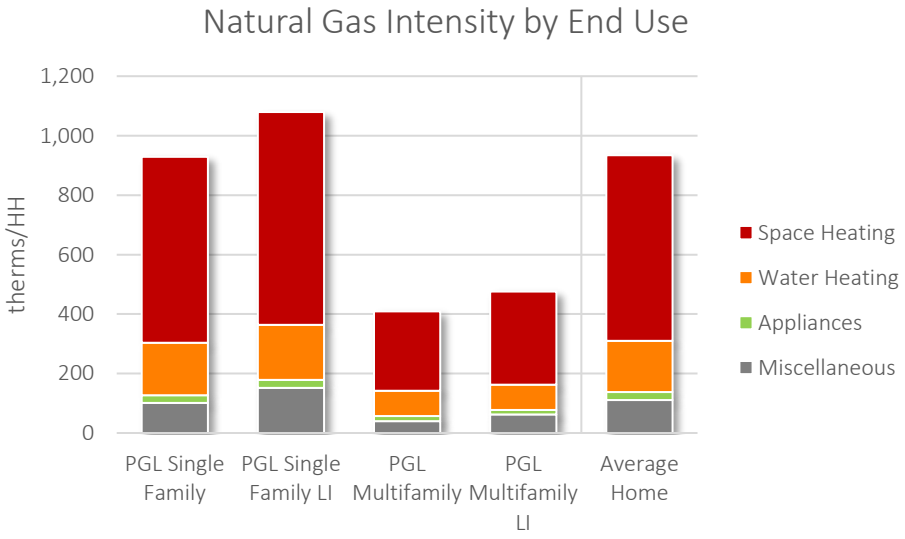
Largest segment is single family, regular income

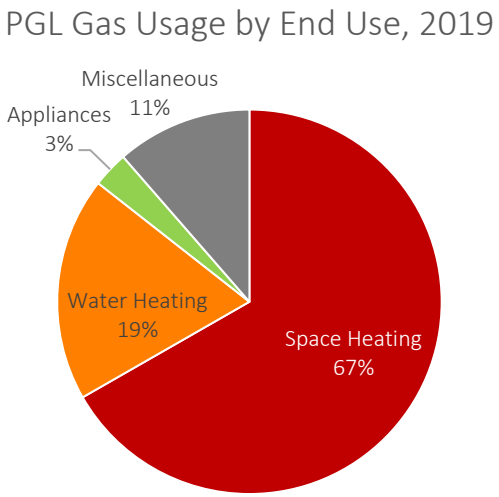
Segment	Households	Gas Sales (MMTherm)	Avg. Consumption (therms/HH)
Single Family	458,256	425,697	929
Single Family Low Income	104,336	112,617	1,079
Multifamily	253,377	103,646	409
Multifamily Low Income	152,770	72,611	467
All Residential	968,738	714,571	738



ANNUAL CONSUMPTION BY END USE
PGL Residential

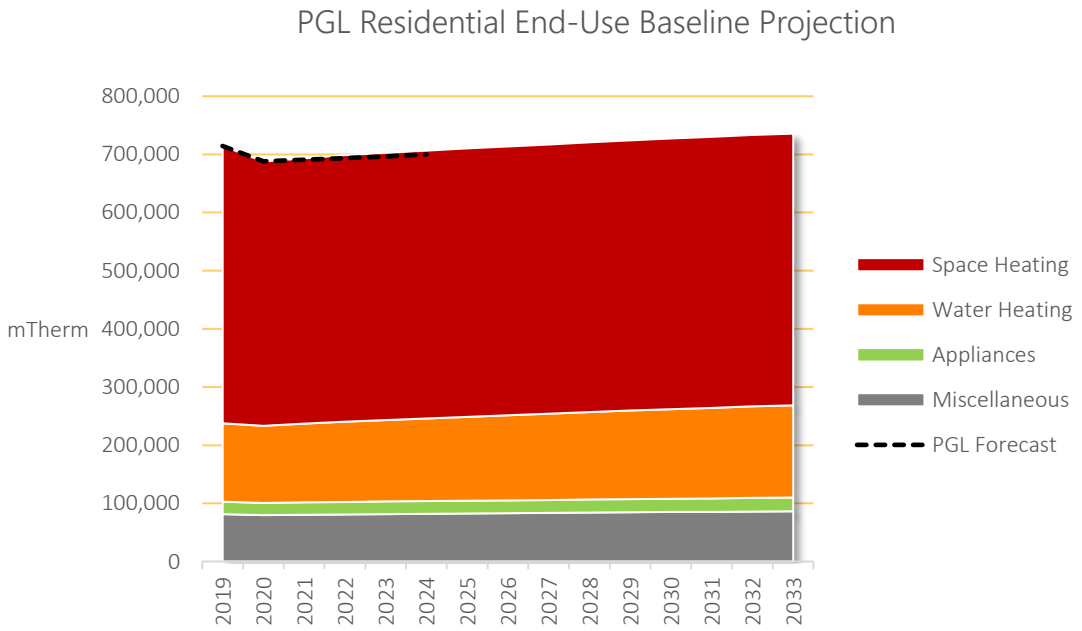
- Space heating and water heating end uses account for the majority of usage across all segments
- As expected, single-family homes use considerably more energy than their multifamily counterparts





BASELINE END-USE PROJECTION
PGL Residential

- Baseline projection includes effects of codes, standards and naturally-occurring efficiency
- Projection is developed by technology and rolled up by end use
- Projection aligns well with the PGL load forecast



Natural Gas Use (mTherm)	2019	2025	2030	% Change ('19-'30)	Avg. Growth
Space Heating	476,778	461,135	465,158	-2.4%	-0.2%
Water Heating	134,784	144,258	153,962	14.2%	1.2%
Appliances	21,499	21,996	22,885	6.4%	0.6%
Miscellaneous	81,511	82,641	85,175	4.5%	0.4%
Total	**714,571**	**710,030**	**727,179**	**1.8%**	**0.2%**

EE TECHNOLOGY OPTIONS & MEASURES

PGL and NSG Residential

Space Heating	Water Heating	Appliances	Miscellaneous	All
•Pool Heater •Building Shell •Conversion to Ductless Mini Split Heat Pump •Conversion to Ground •Doors •Ducting •Furnace Filter Alarm •Gas Boiler •Gas Furnace •Gas High Efficiency Combination Boiler •Building Shell measures •Smart Thermostats •Space Heating •Windows	•Circulation Pump - High Efficiency •Clothes Washer •Dishwasher - ENERGY STAR (6.0) •Gas High Efficiency Combination Boiler •Desuperheater •Efficient Water Heaters	•Clothes Washer - CEE Tier 2 •Clothes Washer - ENERGY STAR (8.0) •Clothes Dryer •Stove/Oven	•Pool Covers •Pool Heater - Solar Thermal •Pool Heater	•Advanced New Construction Design - Zero Net Energy •ENERGY STAR Home Design •Behavioral Programs •Retrocommissioning •Home Energy Management System (HEMS)

Note: Non-equipment measures in black text, equipment measures in red text

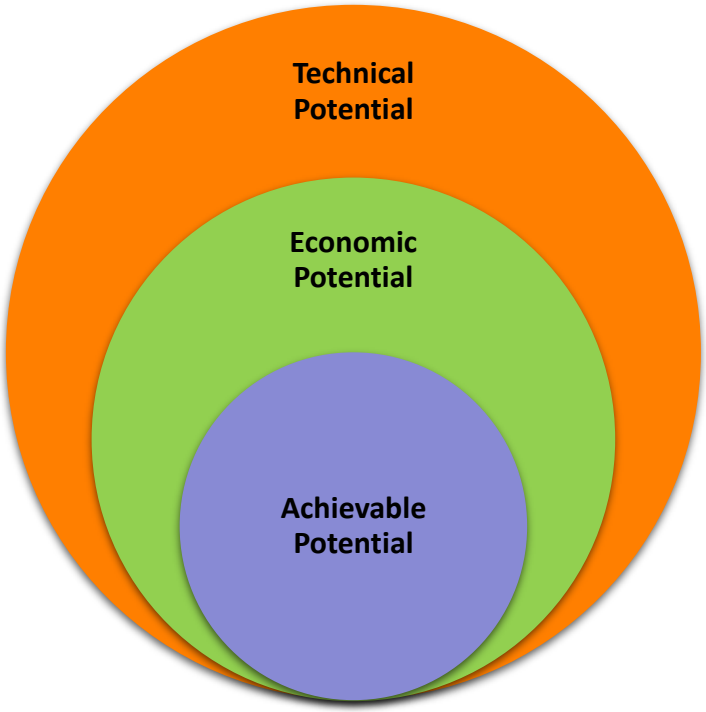
ESTIMATE LEVELS OF POTENTIAL

Technical potential: 100% adoption of most efficient option

Economic potential:

- Perform cost-effectiveness screening
- Calculate economic potential using most efficient, cost-effective option

Achievable potential: apply adoption rates to economic potential



MEASURE ADOPTION RATES

Achievable Potential for PGL

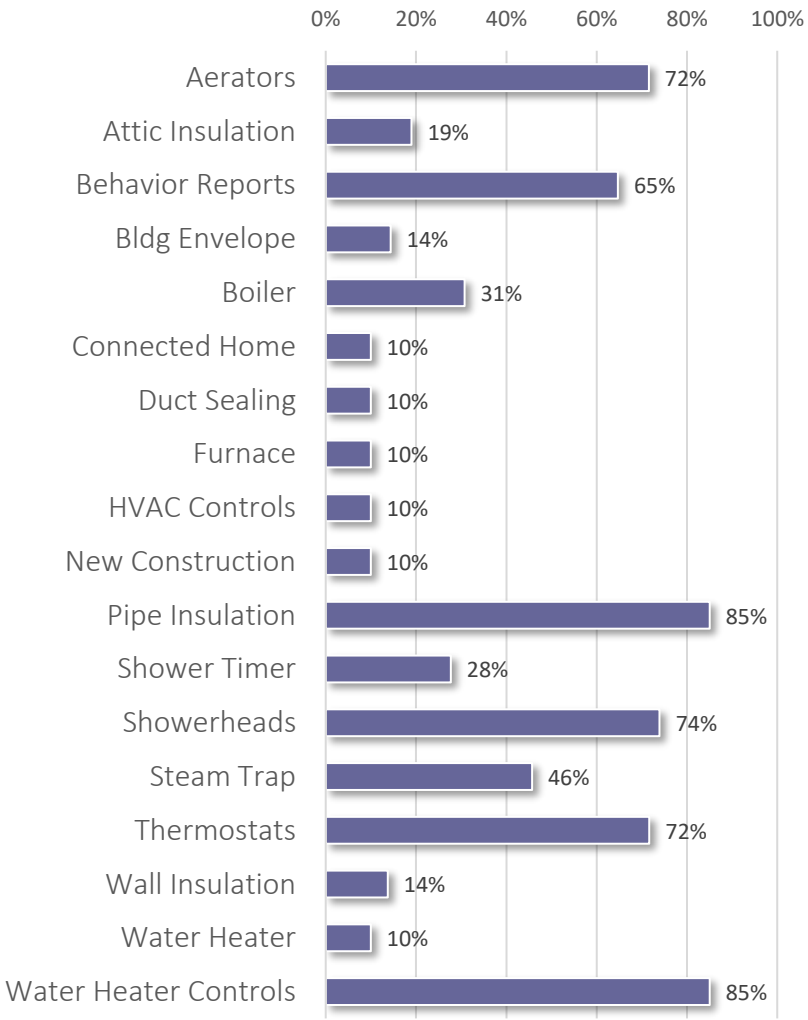
We computed adoption rates for the measure categories as follows:

$$Adoption\ Rate = \frac{PGL\ savings}{Tech\ Pot._{Year\ 1}}$$

Adjustments:

- Set minimum to 10%
- Applied new furnace standard

The achievable potential estimates use the adoption rates in the chart



TOP MEASURES: TECHNICAL & ECONOMIC

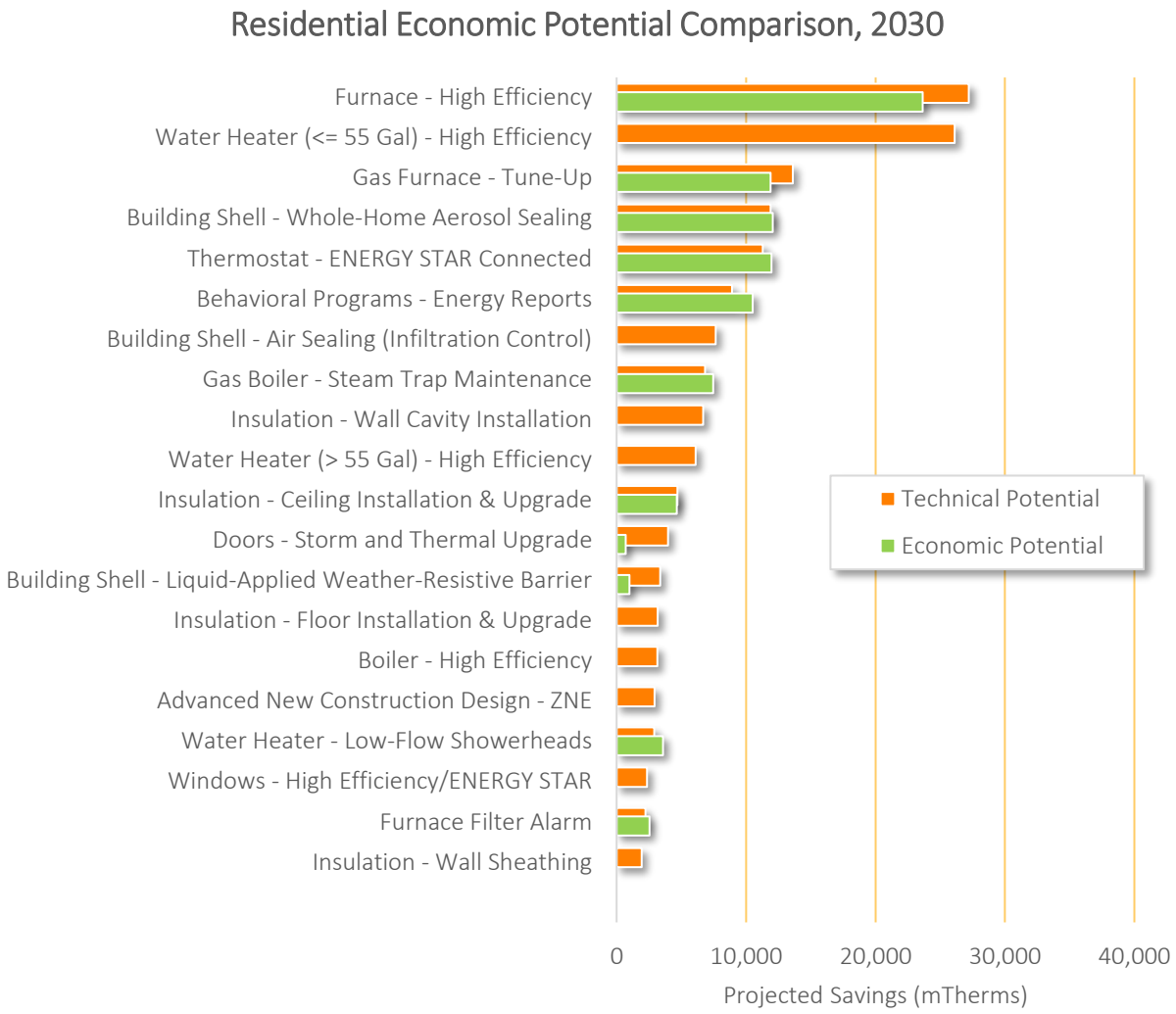
PGL Residential, Cumulative Savings in **2030**

Shows measures ranked by their technical potential

Many are also cost-effective

- Notably, high-efficiency water heaters are not

Note: Economic savings are larger than Technical for some measures due to interactive effects of measure stacking



TOP MEASURES, ACHIEVABLE

PGL Residential, Cumulative Savings in **2025**

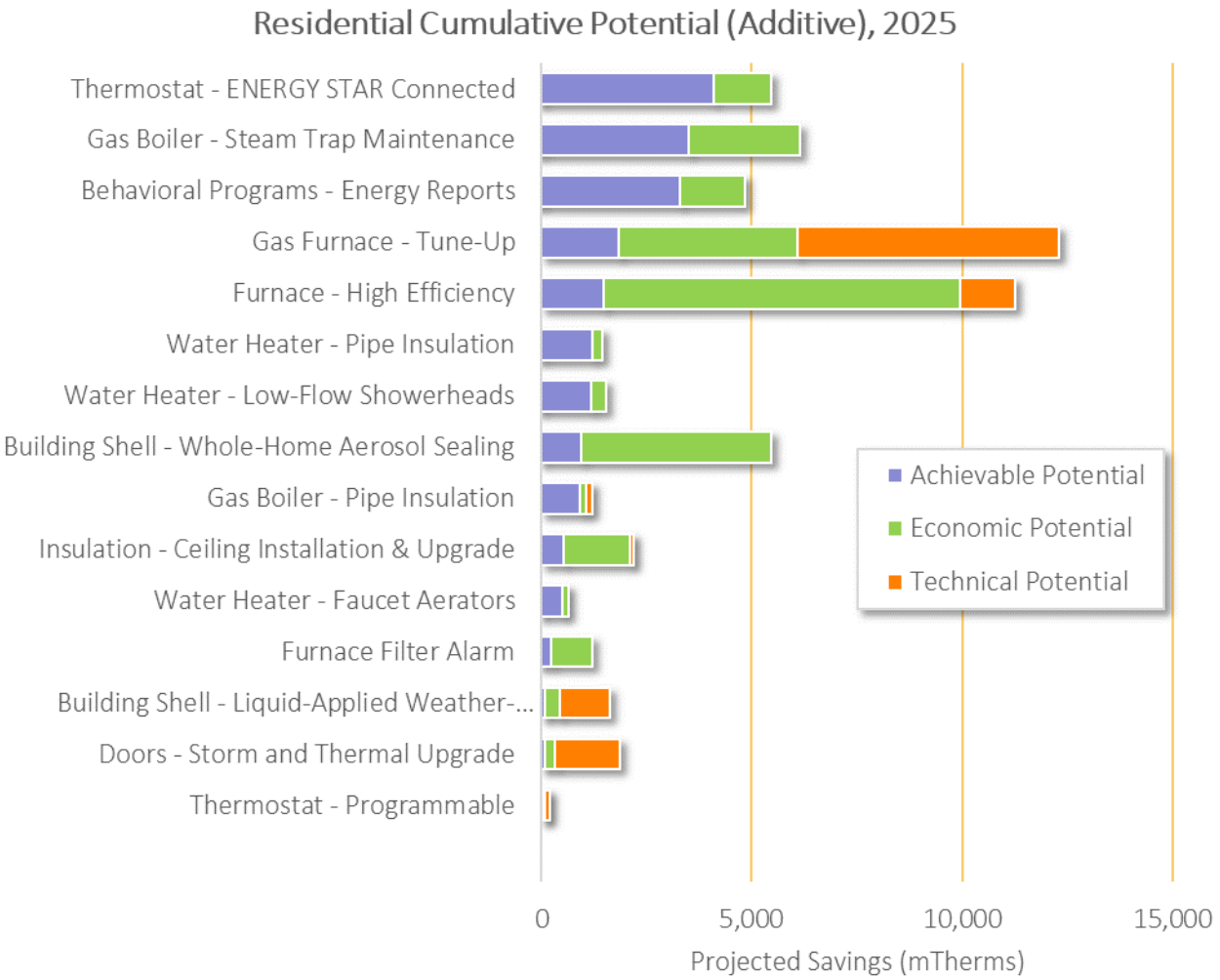
Shows 3 levels of potential

- Ranked by achievable

Over the 4-year program cycle, smart Thermostats provide the highest savings, even though unit energy savings are decreasing in other jurisdictions

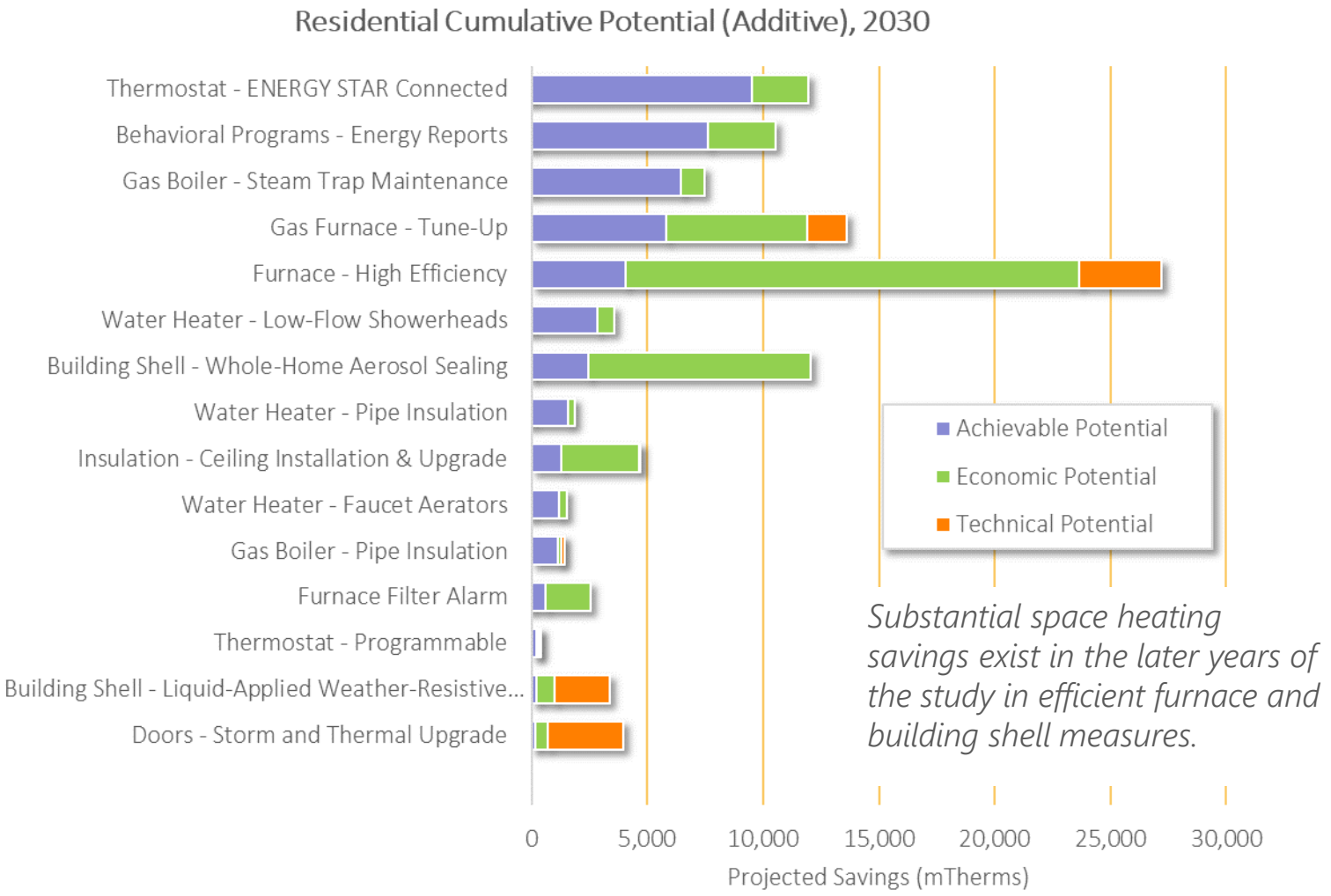
Behavioral Programs and Steam Traps have also provided significant savings in recent program accomplishments

- Using TRM 9.0 would reduce steam trap savings



TOP MEASURES, ACHIEVABLE

PGL Residential, Cumulative Savings in **2030**

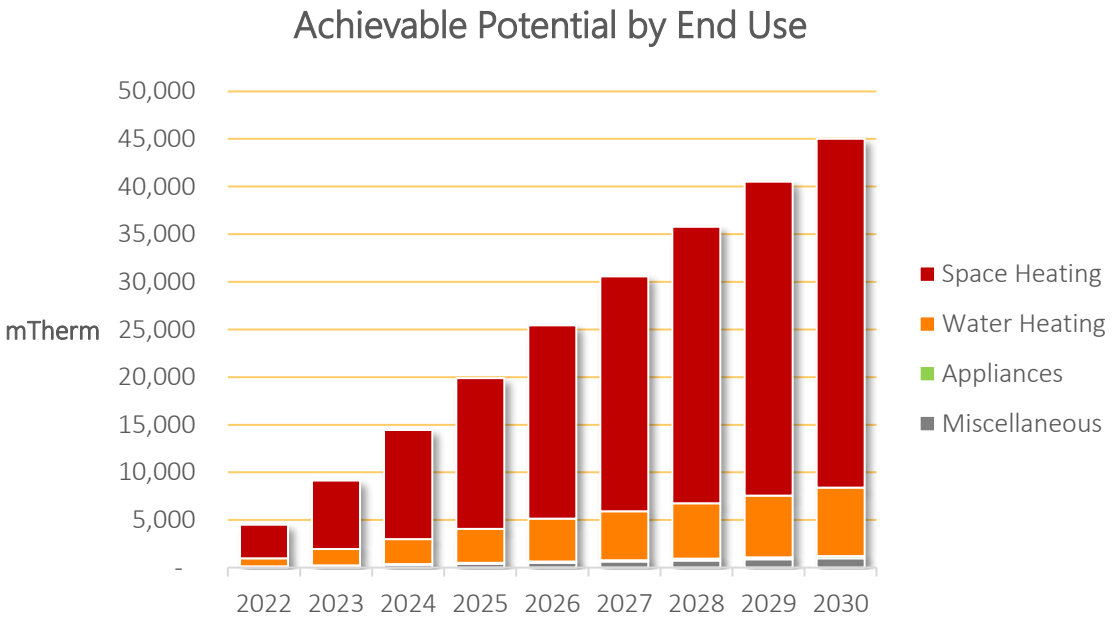


Substantial space heating savings exist in the later years of the study in efficient furnace and building shell measures.

ACHIEVABLE POTENTIAL SAVINGS

PGL Residential Achievable Potential by End Use

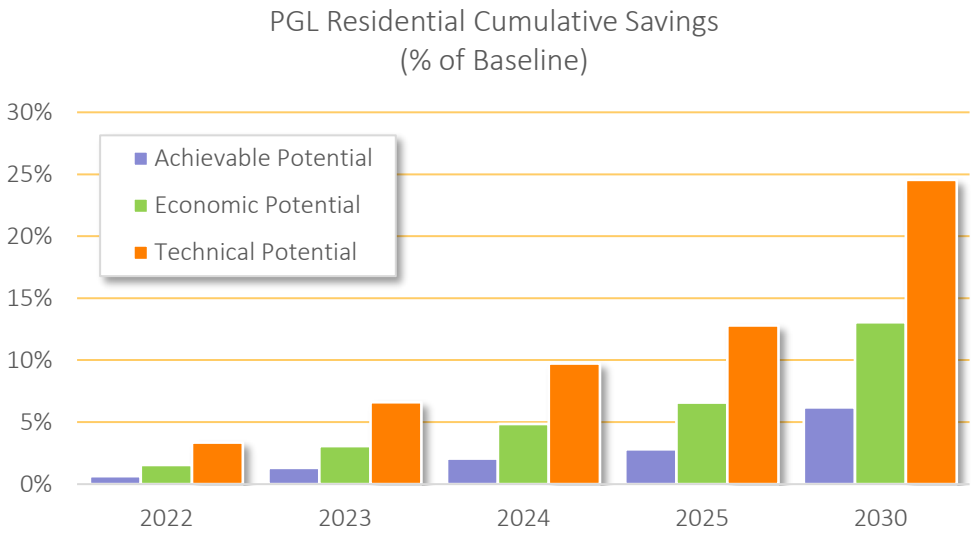
- Space heating and water heating measures account for the majority of savings
- Smart Thermostats and Behavioral Programs make up over 40% of the total savings
- Steam Traps have also been a successful measure in People's Multifamily program
- Pipe Insulation, Low-Flow Showerheads and Faucet Aerators also contribute water heating savings



SUMMARY OF MPS POTENTIAL ESTIMATES
PGL Residential

Achievable Potential is

- 19,905 mTherms (2.8%) after 4 program years
- 45,029 mTherms (6.2%) after 9 year 2030



Summary of Energy Savings (mTherm), Selected Years	2022	2023	2024	2025	2030
Reference Baseline (mTherm)	698,652	702,657	706,548	710,030	727,179
Energy Savings (Cumulative mTherm)					
Achievable Potential	4,504	9,141	14,460	19,905	45,029
Economic Potential	10,746	21,476	34,168	46,774	94,919
Technical Potential	23,373	46,312	68,805	90,899	178,563
Energy Savings (% of Baseline)					
Achievable Potential	0.6%	1.3%	2.0%	2.8%	6.2%
Economic Potential	1.5%	3.1%	4.8%	6.6%	13.1%
Technical Potential	3.3%	6.6%	9.7%	12.8%	24.6%
Incremental Savings (mTherm)					
Achievable Potential	4,504	4,638	5,321	5,471	4,668
Economic Potential	10,746	10,766	12,760	12,778	8,492
Technical Potential	23,373	23,288	23,130	23,087	18,188

PGL C&I Analysis

MARKET CHARACTERIZATION
PGL Commercial

PGL billing data as primary source for usage by building type

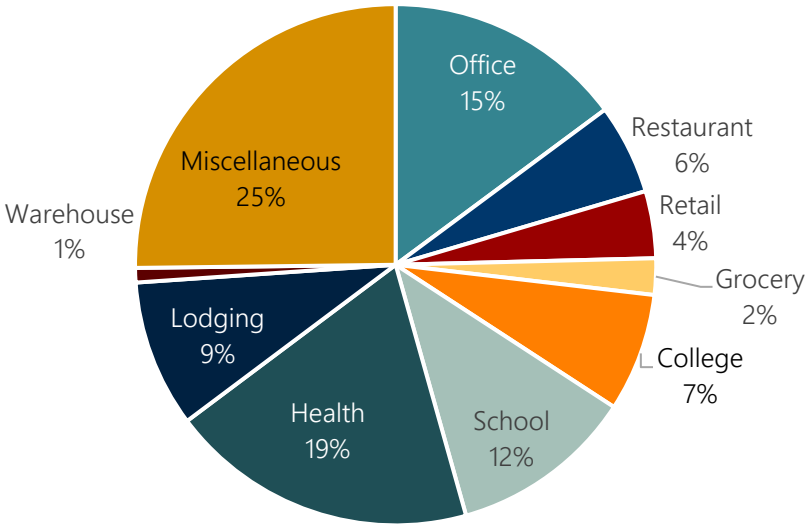
- Used Google Places API to obtain building types
- Validated the top 200 manually

Intensities are based on EIA's CBECS data and vetted with other AEG studies

- Floor space is inferred; it is the unit of analysis in the modeling

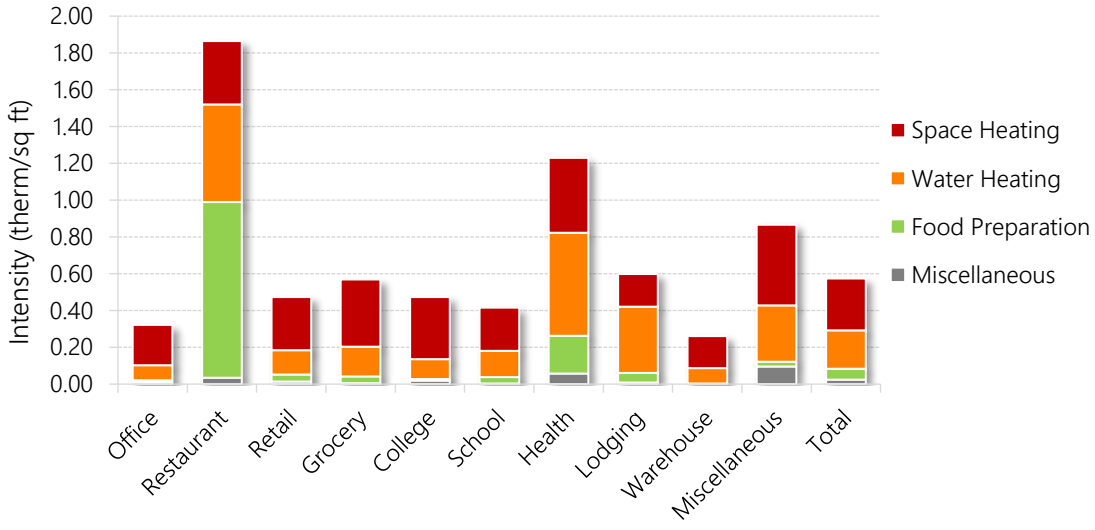
Miscellaneous segment includes industrial customers

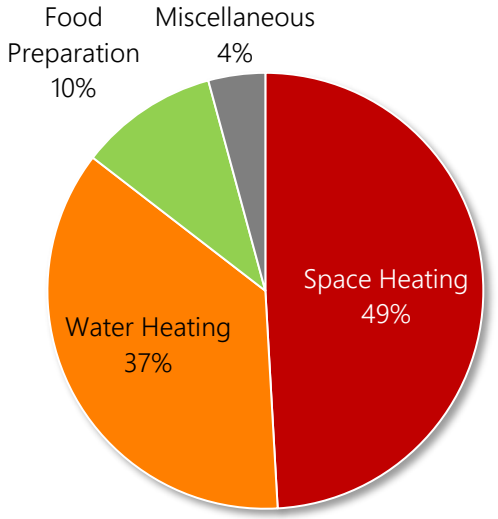
Segment	Usage (Mtherms)	Intensity (therms/sq ft)	Floor Space (MSF)
Office	48,100	0.32	149,859
Restaurant	18,100	1.86	9,709
Retail	13,481	0.47	28,496
Grocery	7,308	0.57	12,881
College	23,754	0.47	50,199
School	37,090	0.41	89,504
Health	61,954	1.23	50,400
Lodging	29,616	0.60	49,537
Warehouse	2,906	0.26	11,175
Miscellaneous	81,596	0.87	94,292
Total	**323,905**	**0.59**	**546,052**



ANNUAL CONSUMPTION BY END USE
PGL Commercial

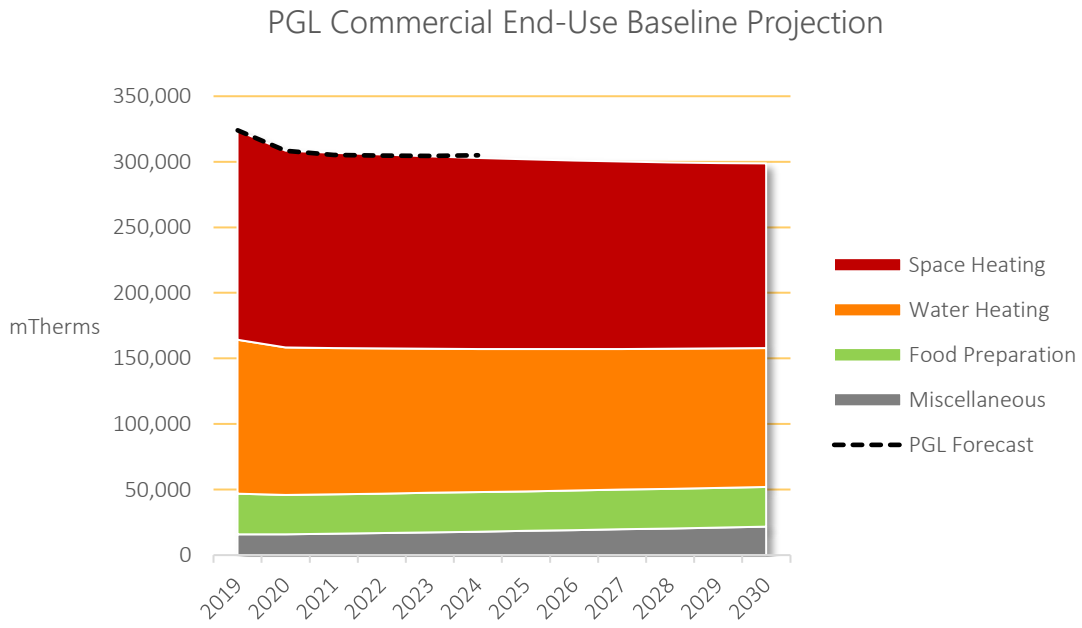
- Space heating and water heating end uses account for the majority of usage across all segments, except restaurants
- Restaurants use considerably more energy than other commercial segments due to large gas cooking usage





BASELINE END-USE PROJECTION
PGL Commercial

- Baseline includes effects of codes, standards and naturally occurring efficiency
- It is developed by technology and rolled up by end use
- Projection aligns well with PGL load forecast



Natural Gas Use (mTherm)	2019	2025	2030	% Change ('19-'30)	Avg. Growth
Space Heating	159,559	144,775	140,583	-11.9%	-1.2%
Water Heating	117,460	108,439	105,970	-9.8%	-0.9%
Food Preparation	31,032	30,162	30,311	-2.3%	-0.2%
Miscellaneous	15,853	18,522	21,716	37.0%	2.9%
Total	**323,905**	**301,898**	**298,580**	**-7.8%**	**-0.7%**

EE TECHNOLOGIES AND MEASURES

PGL and NSG Commercial and Industrial

Food Preparation	Space Heating	Water Heating	Miscellaneous	All
• Cooking - Infrared Rotisserie Oven • Cooking - Infrared Charbroiler • Cooking - Infrared Salamander Broiler • Cooking - Infrared Upright Broiler • Cooking - Install New Pasta Cooker • Combination Oven • Convection Oven • Conveyor Oven • Double Rack Oven • Fryer • Dishwasher • Broiler • Griddle • Range • Steamer • Commercial Food Prep Other	• Automatic High-Speed Overhead Doors • Commissioning • Cooking • Destratification Fans (HVLS) • Economizer Repair and Optimization • Gas Boiler • Gas Furnace • Unit Heater • HVAC • Industrial Air Curtain • Building Shell measures • Lodging – Guest Room Controls • Packaged RTU • Programmable Thermostat • Steam Trap Maintenance • Thermostat • Windows	• HVAC • Commercial Laundry • Efficient Water Heater	• Industrial Steam Trap Maintenance • Commercial Laundry - Clothes Dryer Moisture Sensor • Commercial Laundry - High Speed Extraction • Commercial Laundry - Modulating Clothes Dryer • Pool Heater - Night Covers • Pool Heater • Miscellaneous	• Gas Optimization • Advanced New Construction Designs • Commissioning • Retrocommissioning • Building Energy Management System (BEMS)

Note: Non-equipment measures in black text, equipment measures in red text

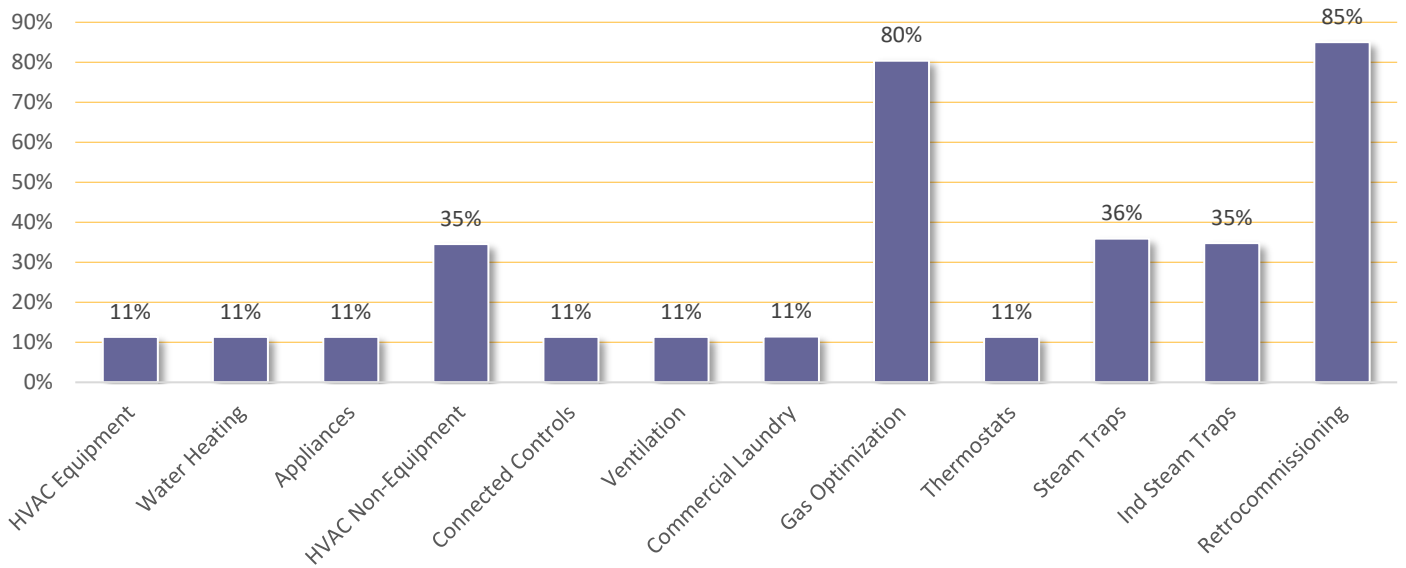
MEASURE ADOPTION RATES

Achievable Potential for PGL and NSG

We computed adoption rates for the measure categories as follows:

$$Adoption\ Rate = \frac{Utility\ savings}{Tech\ Pot._{Year\ 1}}$$

The following results use the adoption rates in the graph below



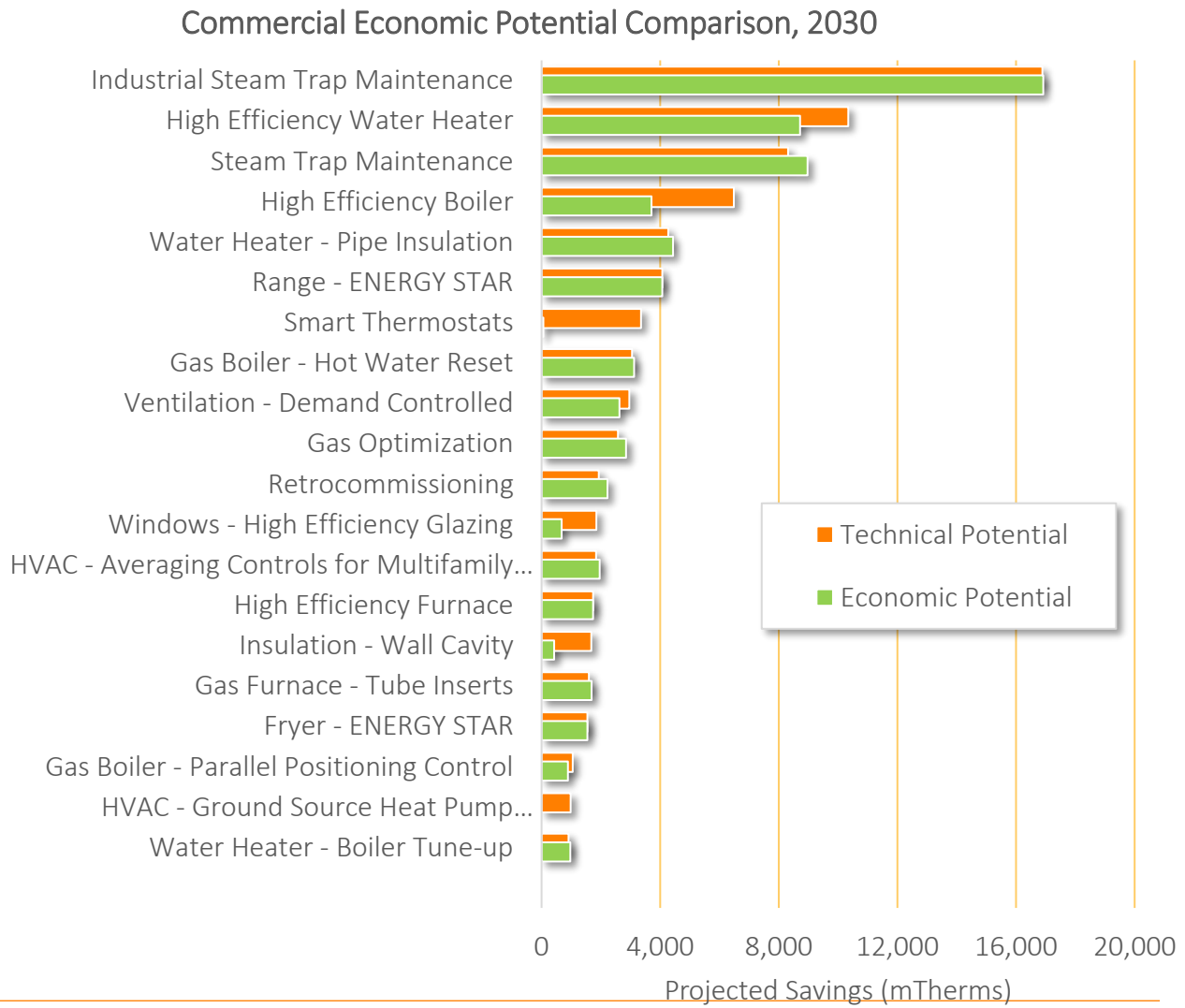
ECONOMIC POTENTIAL, TOP MEASURES

PGL Commercial, Cumulative Savings in **2030**

Many of the top commercial Technical measures are also cost-effective

- Boiler Tune-up do not pass the economic screen but are included in PGL's program

Note: Economic savings are larger than Technical for some measures due to interactive effects of measure stacking



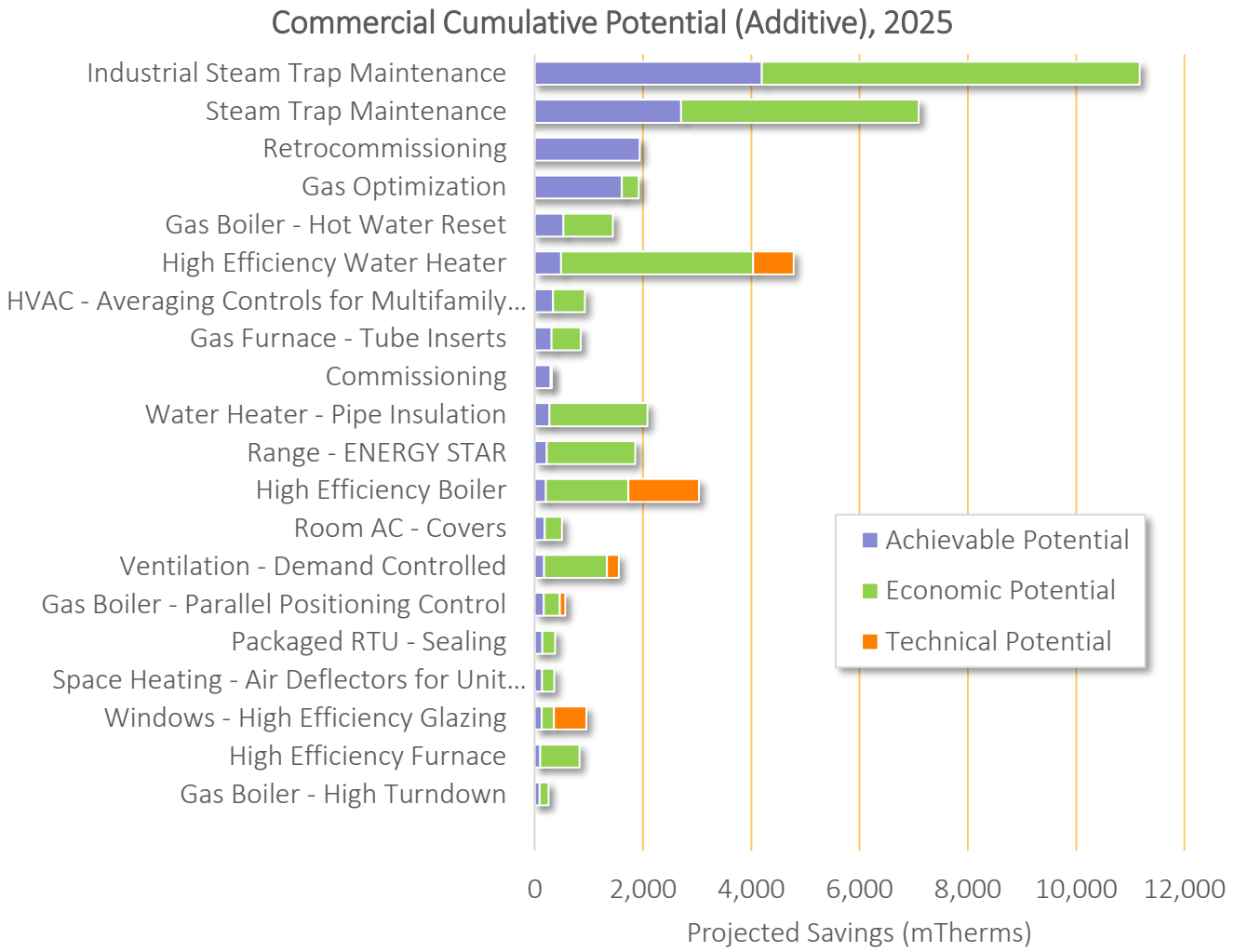
TOP MEASURES, ACHIEVABLE

PGL Commercial, Cumulative Savings in **2025**

Steam Trap Maintenance makes up a majority of early-year potential

- Using TRM 9.0 instead of TRM 8.0 would reduce steam trap savings

RCx and the Gas Optimization program also provide significant savings in recent program accomplishments

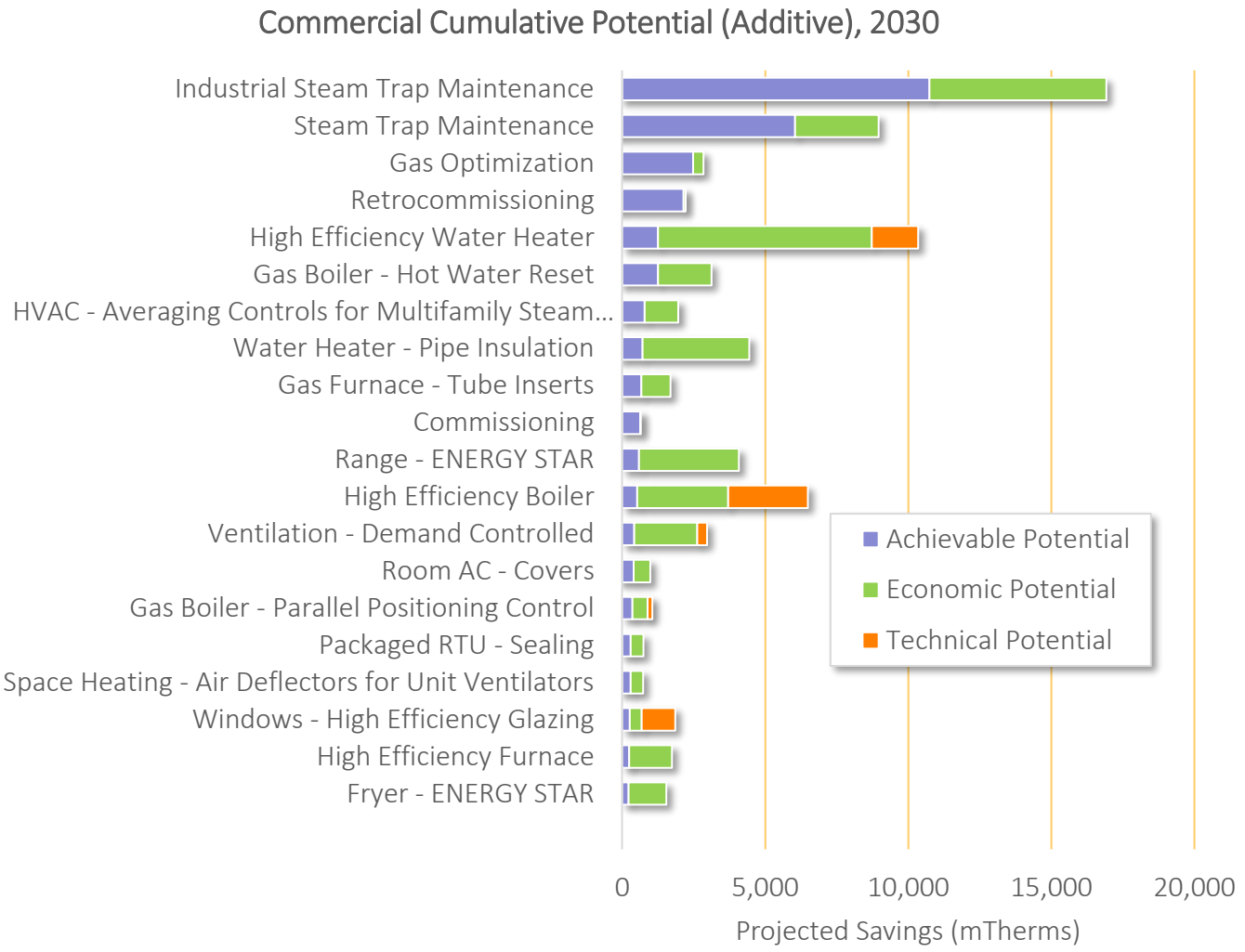


TOP MEASURES, ACHIEVABLE

PGL Commercial, Cumulative Savings in **2030**

High Efficiency Water Heaters and pipe insulation show large potential in the long-term.

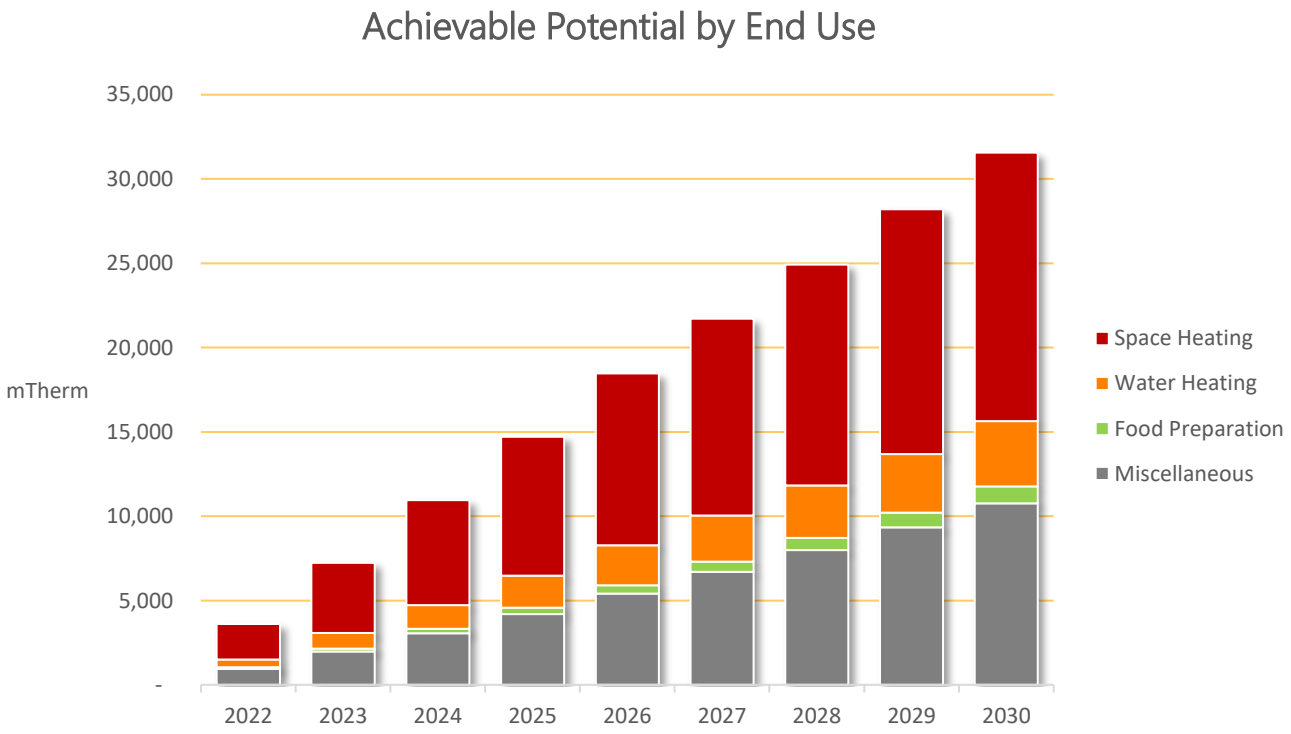
Space Heating savings exist in the later years of the study through High Efficiency Boilers, and to a lesser extent, Furnaces.



ACHIEVABLE POTENTIAL SAVINGS

PGL Commercial Achievable Potential by End Use

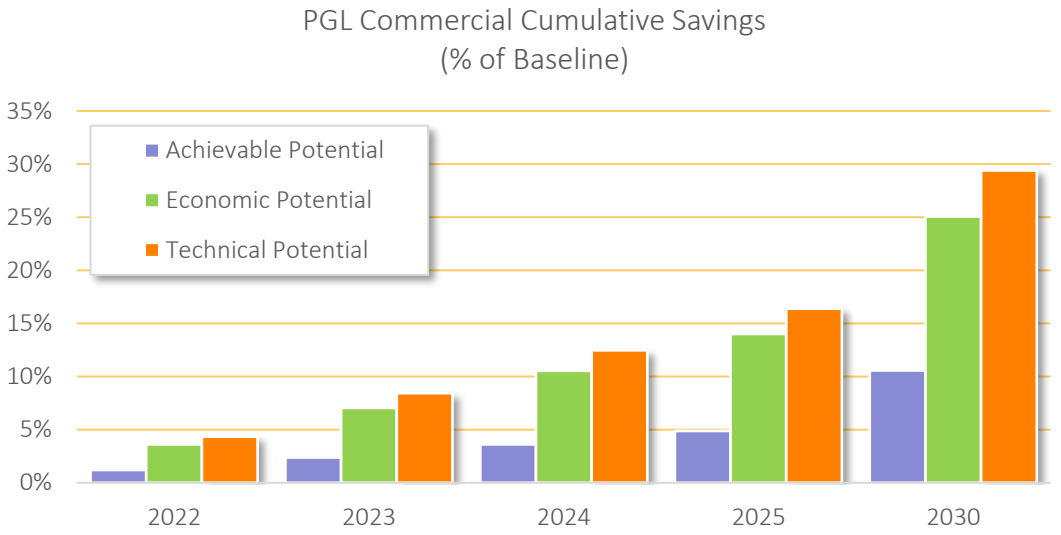
- Space heating and miscellaneous (industrial process) measures account for the majority of savings
- Steam Traps have been a successful measure in Peoples' C&I program



SUMMARY OF MPS POTENTIAL ESTIMATES
PGL Commercial

Achievable Potential

- 14,704 mTherms (4.9%) after 4 program years
- 31,554 mTherms (10.6%) after 9 years, 2030



Summary of Energy Savings (mTherm), Selected Years	2022	2023	2024	2025	2030
Reference Baseline (mTherm)	305,502	304,130	302,948	301,898	298,580
Energy Savings (Cumulative mTherm)					
Achievable Potential	3,616	7,229	10,950	14,704	31,554
Economic Potential	11,012	21,404	31,921	42,285	74,806
Technical Potential	13,260	25,577	37,725	49,458	87,730
Energy Savings (% of Baseline)					
Achievable Potential	1.2%	2.4%	3.6%	4.9%	10.6%
Economic Potential	3.6%	7.0%	10.5%	14.0%	25.1%
Technical Potential	4.3%	8.4%	12.5%	16.4%	29.4%
Incremental Savings (mTherm)					
Achievable Potential	3,616	3,668	3,780	3,966	3,962
Economic Potential	11,012	10,710	10,689	10,748	6,384
Technical Potential	13,260	12,788	12,609	12,512	7,852

PGL Potential Estimates

All Sectors

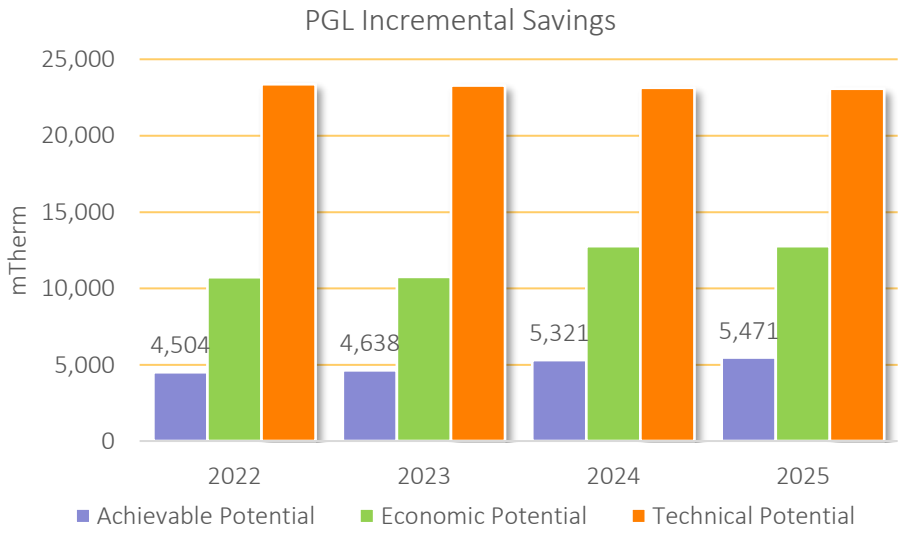
PGL SUMMARY OF POTENTIAL BY SECTOR

First-year Savings, All Sectors

Achievable potential excludes savings from codes, standards and naturally-occurring efficiency

Achievable Potential is

- 4,504 mTherm (0.4%) in program year 1
- 5,471 mTherm (0.5%) after 4 program years



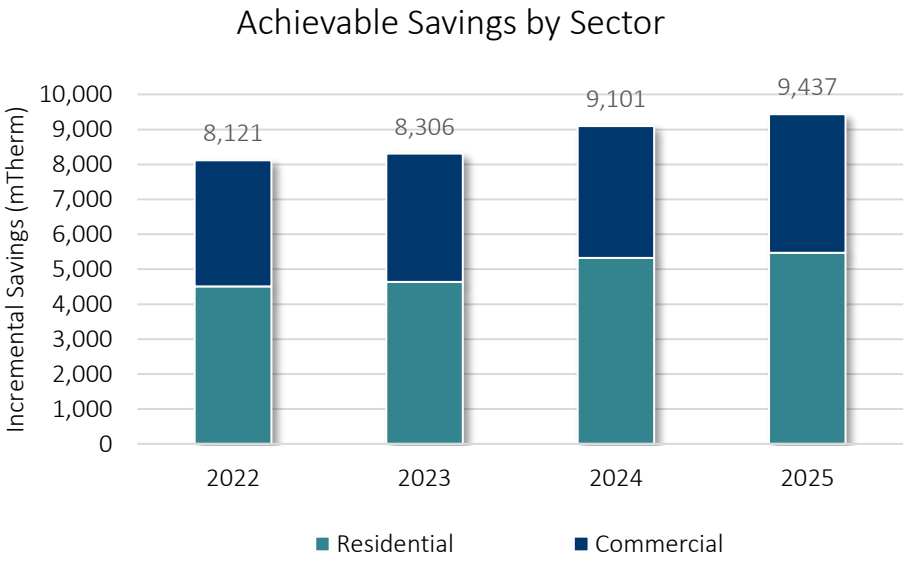
Summary of Energy Savings (mTherm), Selected Years	2022	2023	2024	2025
Reference Baseline (mTherm)	1,004,154	1,006,788	1,009,495	1,011,928
First-year Savings (mTherm)				
Achievable Potential	4,504	4,638	5,321	5,471
Economic Potential	10,746	10,766	12,760	12,778
Technical Potential	23,373	23,288	23,130	23,087
First-year Savings as % of Baseline				
Achievable Potential	0.4%	0.5%	0.5%	0.5%
Economic Potential	1.1%	1.1%	1.3%	1.3%
Technical Potential	2.3%	2.3%	2.3%	2.3%

PGL SUMMARY OF POTENTIAL

First-year Savings

Residential sector accounts for 54-58% of first-year savings in each program year

Commercial sector also includes Industrial customers



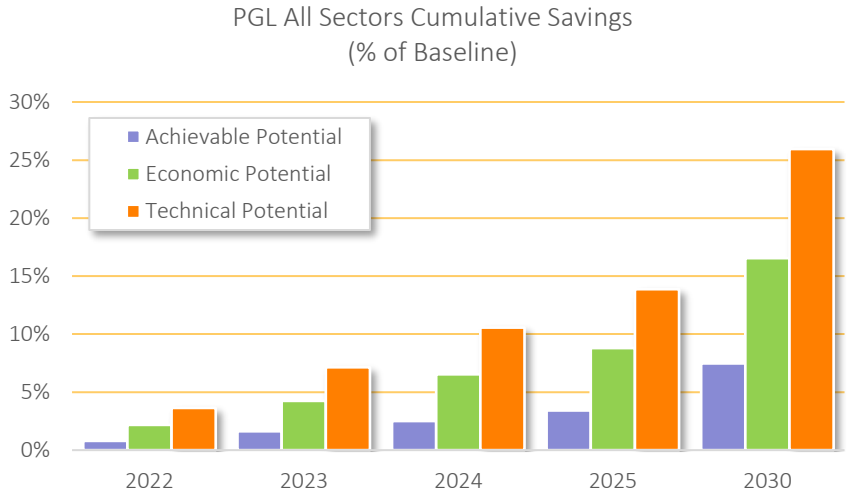
Achievable Potential by Sector	2022	2023	2024	2025
First-year Savings (mTherm) - Total	**8,121**	**8,306**	**9,101**	**9,437**
Residential	4,504	4,638	5,321	5,471
Commercial	3,616	3,668	3,780	3,966
First-year Savings (% of Baseline) - Total	**0.8%**	**0.8%**	**0.9%**	**0.9%**
Residential	0.4%	0.5%	0.5%	0.5%
Commercial	0.4%	0.4%	0.4%	0.4%

PGL SUMMARY OF POTENTIAL

Cumulative Savings, All Sectors

Achievable Potential is

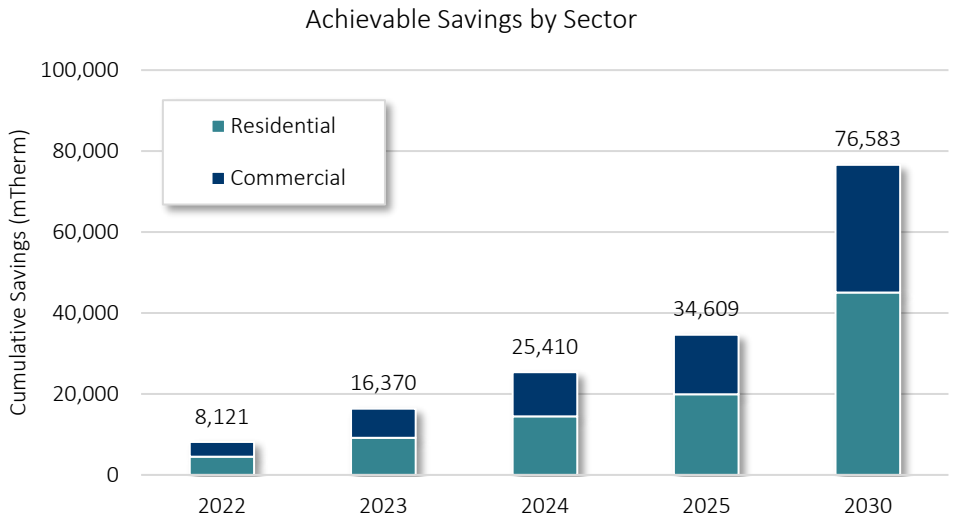
- 34,609 mTherm (3.4%) after 4 program years
- 76,583 mTherm (7.5%) after 9 years, 2030



Summary of Energy Savings (mTherm), Selected Years	2022	2023	2024	2025	2030
Reference Baseline (mTherm)	1,004,154	1,006,788	1,009,495	1,011,928	1,025,759
Cumulative Savings (mTherm)					
Achievable Potential	8,121	16,370	25,410	34,609	76,583
Economic Potential	21,758	42,880	66,089	89,059	169,726
Technical Potential	36,633	71,889	106,531	140,358	266,293
Savings as % of Baseline					
Achievable Potential	0.8%	1.6%	2.5%	3.4%	7.5%
Economic Potential	2.2%	4.3%	6.5%	8.8%	16.5%
Technical Potential	3.6%	7.1%	10.6%	13.9%	26.0%

PGL SUMMARY OF POTENTIAL BY SECTOR
Cumulative Savings

By 2030, Residential savings account for about 59% of total savings



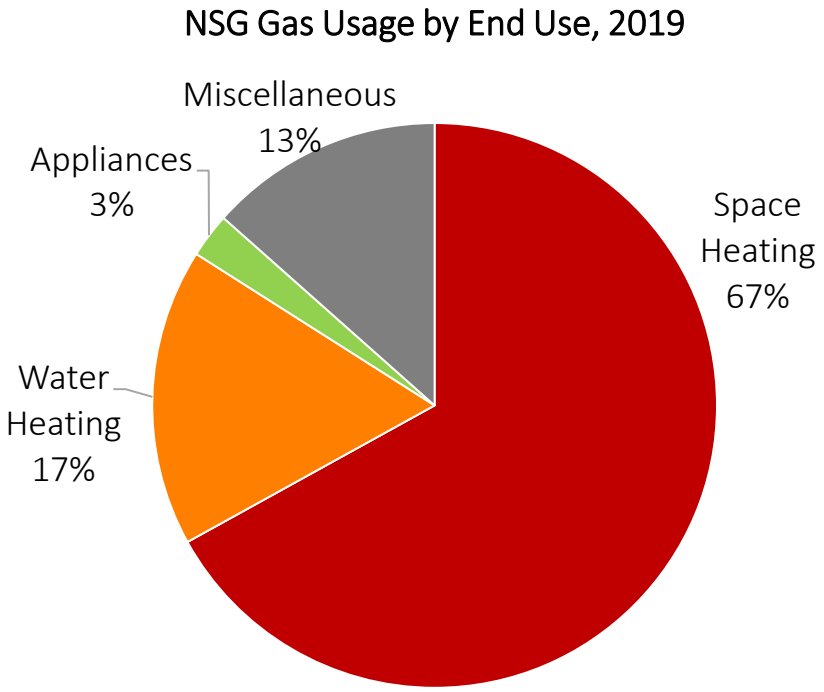
Achievable Potential by Sector	2022	2023	2024	2025	2030
Cumulative Savings (mTherm) - Total	**8,121**	**16,370**	**25,410**	**34,609**	**76,583**
Residential	4,504	9,141	14,460	19,905	45,029
Commercial	3,616	7,229	10,950	14,704	31,554
Energy Savings (% of Baseline) - Total	**0.8%**	**1.6%**	**2.5%**	**3.4%**	**7.5%**
Residential	0.4%	0.9%	1.4%	2.0%	4.4%
Commercial	0.4%	0.7%	1.1%	1.5%	3.1%

NSG Residential Analysis

MARKET CHARACTERIZATION
NSG Residential

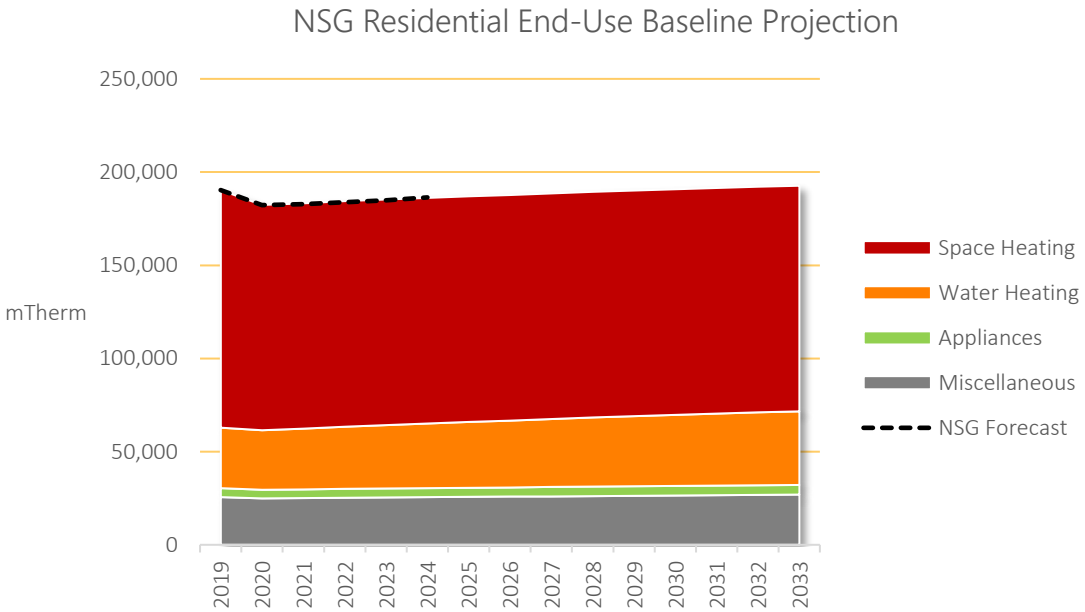
- NSG service territory is more homogeneous than PGL
- Consumption by end use is similar to PGL
  - Water heating has a slightly larger share of usage

Households	177,095
Gas Sales (MMTherm)	190,262
Avg. Use (therms/HH)	1,074



BASELINE END-USE PROJECTION
NSG Residential

- The baseline projection includes impacts of codes, standards and naturally-occurring efficiency
- The baseline projection is developed by technology and rolled up by end use
- Projection aligns well with the NSG load forecast



Natural Gas Use (mTherm)	2019	2025	2030	% Change ('19-'30)	Avg. Growth
Space Heating	127,408	121,015	121,032	-5.0%	-0.5%
Water Heating	32,430	35,254	38,131	17.6%	1.5%
Appliances	4,847	4,918	5,113	5.5%	0.5%
Miscellaneous	25,577	25,742	26,535	3.7%	0.3%
Total	**190,262**	**186,929**	**190,812**	**0.3%**	**0.0%**

MEASURE ADOPTION RATES

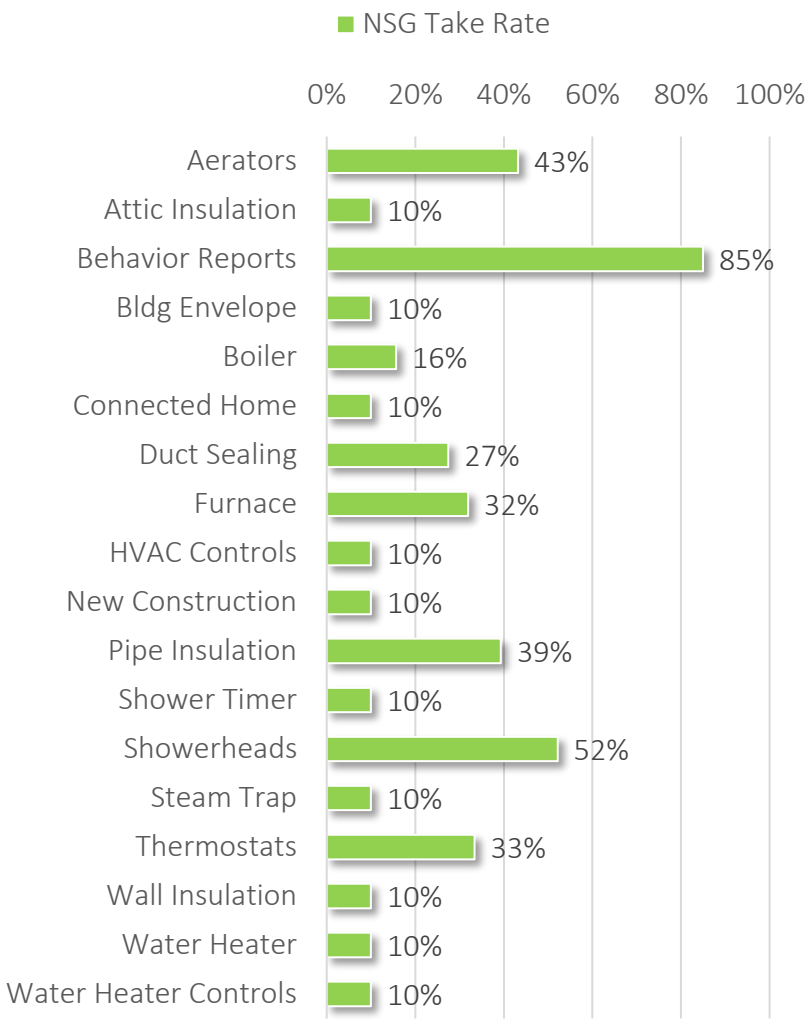
Achievable Potential for NSG

We computed adoption rates for the measure categories as follows:

$$Adoption\ Rate = \frac{NSG\ savings}{Tech\ Pot._{Year\ 1}}$$

Made adjustments:

- Minimum set to 10%
- Applied furnace standard



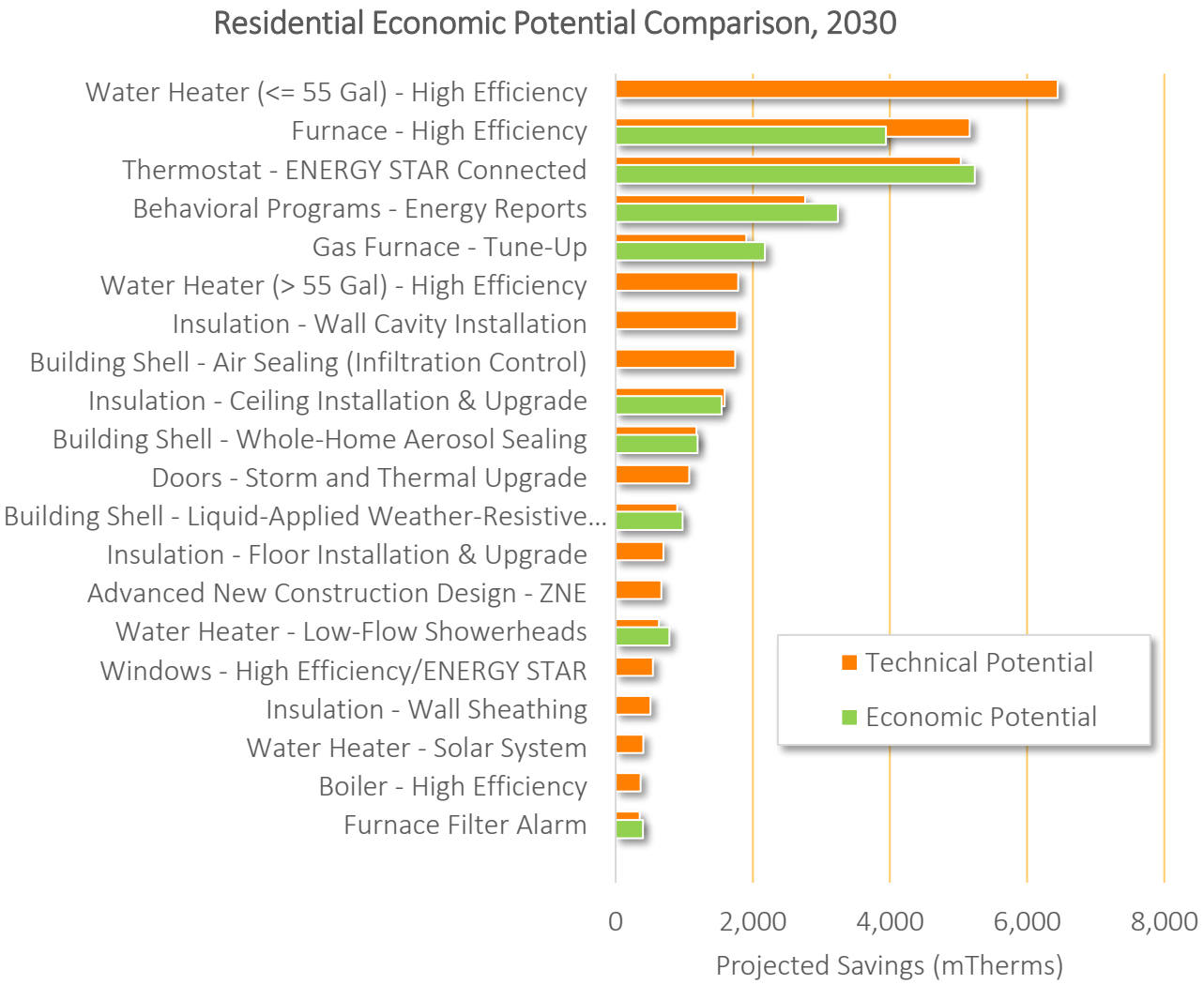
ECONOMIC POTENTIAL, TOP MEASURES

NSG Residential, Cumulative Savings in **2030**

Many of the top residential Technical measures are also cost-effective

- Water Heaters do not pass

Note: Economic savings are larger than Technical for some measures due to interactive effects of measure stacking

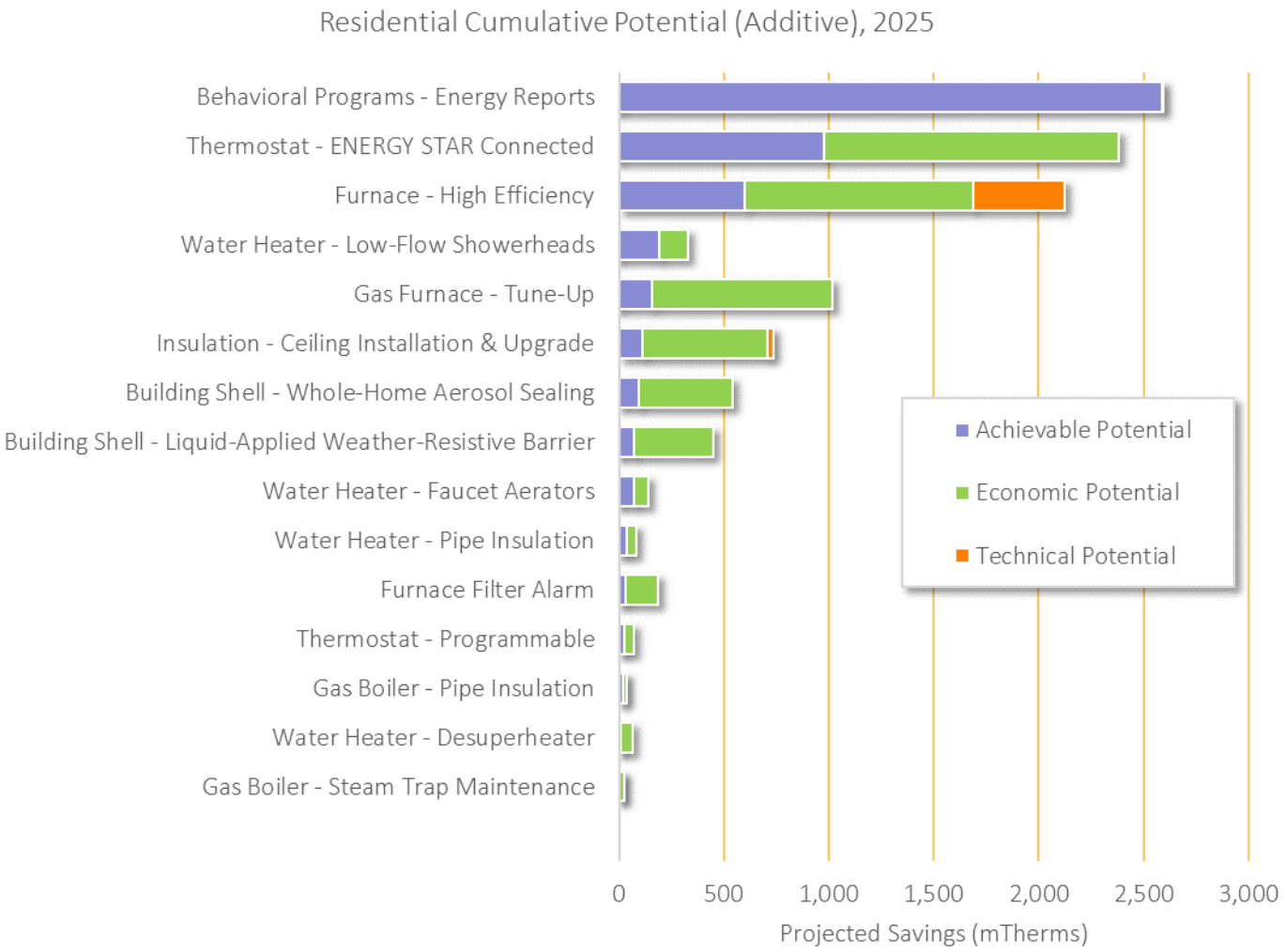


TOP MEASURES, ACHIEVABLE

NSG Residential, Cumulative Savings in **2025**

Behavioral Programs make up a majority of the early-year potential

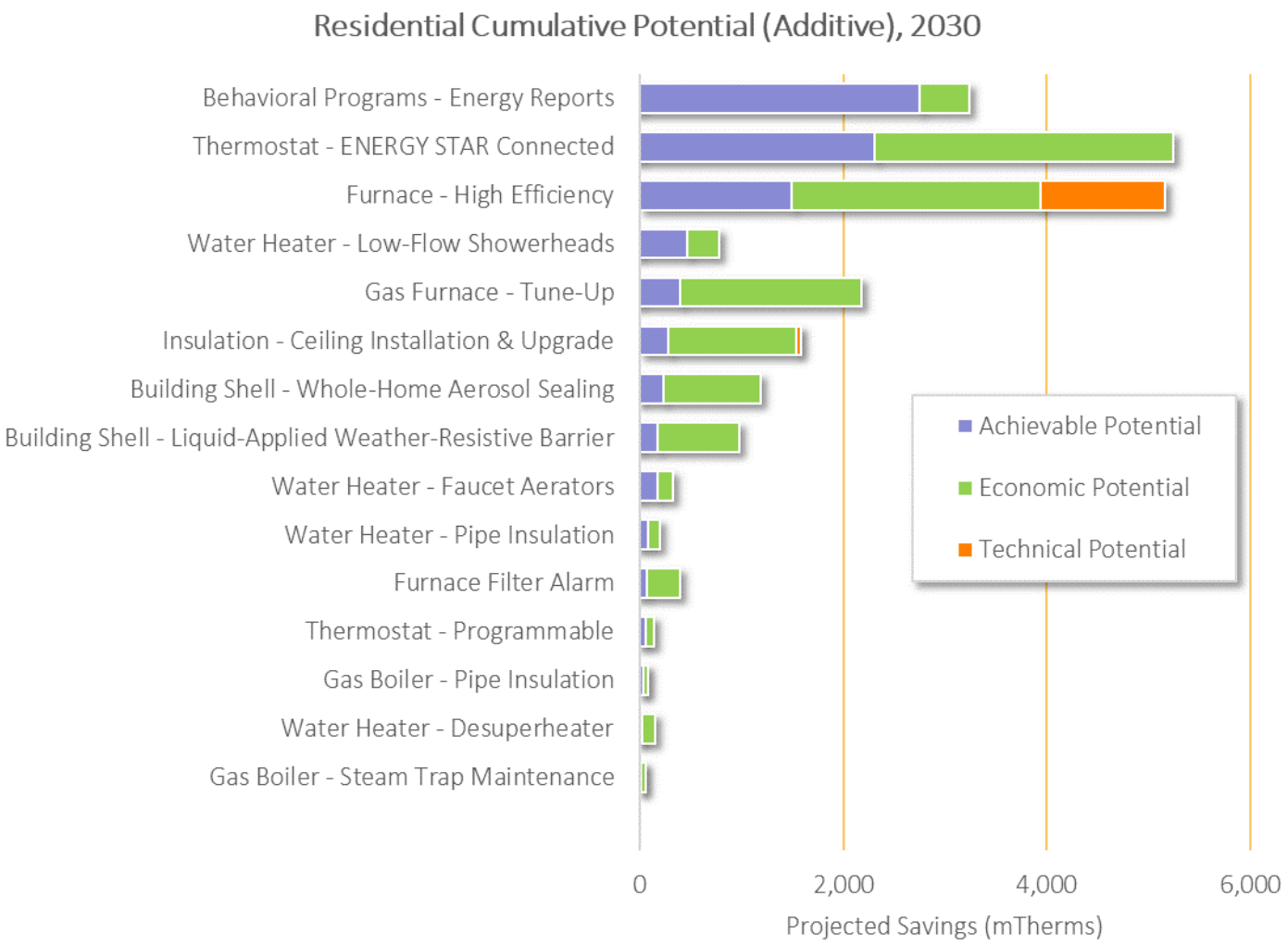
Smart thermostats provide the second-most savings, even though unit energy savings are decreasing in other jurisdictions



TOP MEASURES, ACHIEVABLE

NSG Residential, Cumulative Savings in **2030**

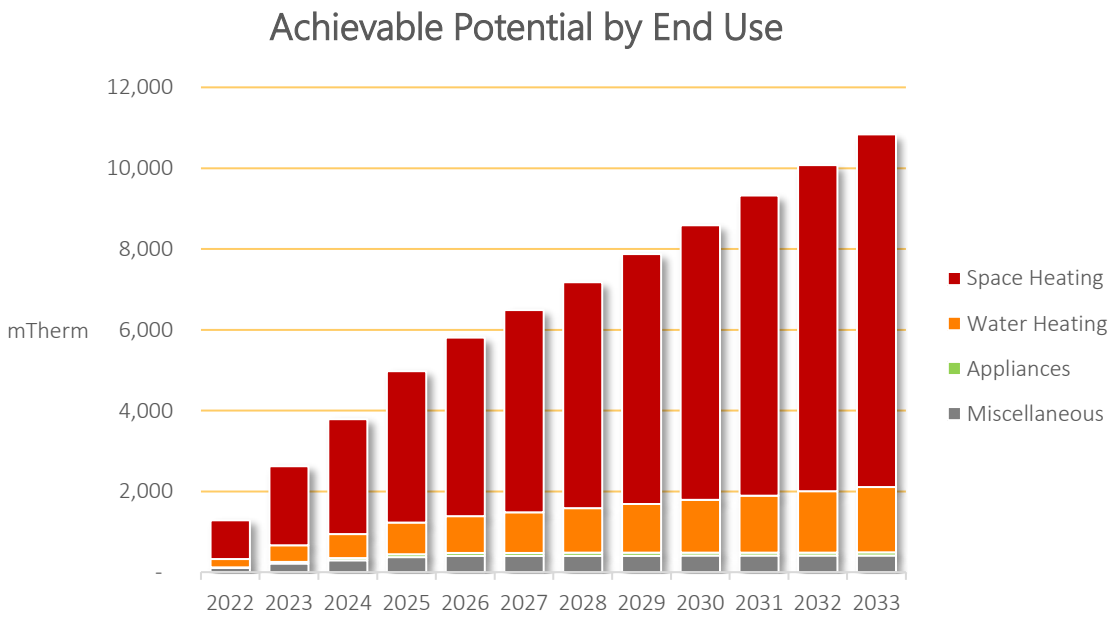
Substantial space heating savings exist in the later years of the study in Efficient Furnaces and building shell measures.



ACHIEVABLE POTENTIAL SAVINGS

NSG Residential Achievable Potential by End Use

- Space heating and water heating measures account for the majority of savings
- The Behavioral Program and Smart Thermostats make up over 60% of the total savings
- Low-Flow Showerheads and Faucet Aerators also contribute water heating savings

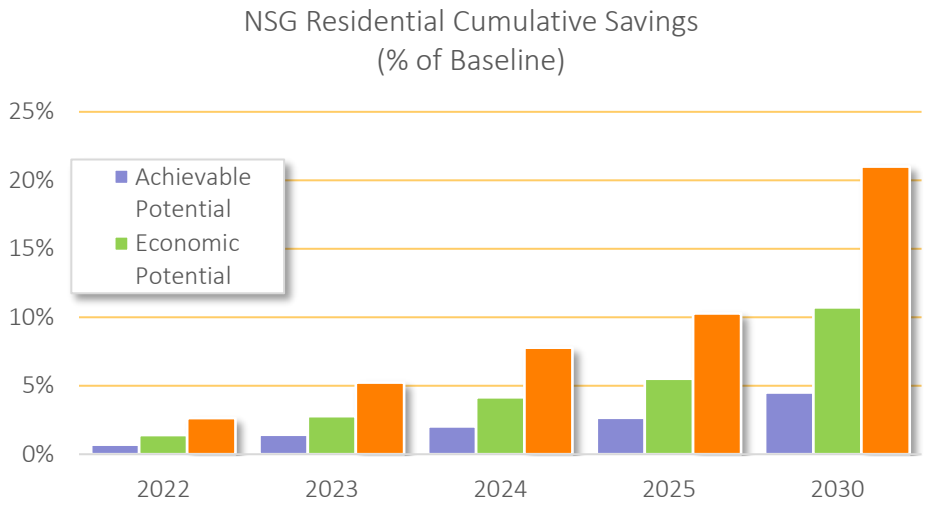


SUMMARY OF MPS POTENTIAL ESTIMATES

NSG Residential – Natural Gas

Achievable Potential is

- 4,974 mTherms (2.7%) after 4 program years
- 8,589 mTherms (4.5%) after 9 years, 2030



Summary of Energy Savings (mTherm), Selected Years	2022	2023	2024	2025	2030
Reference Baseline (mTherm)	184,367	185,229	186,134	186,929	190,812
Energy Savings (Cumulative mTherm)					
Achievable Potential	1,284	2,623	3,787	4,974	8,589
Economic Potential	2,572	5,150	7,734	10,316	20,470
Technical Potential	4,859	9,681	14,471	19,221	40,055
Energy Savings (% of Baseline)					
Achievable Potential	0.7%	1.4%	2.0%	2.7%	4.5%
Economic Potential	1.4%	2.8%	4.2%	5.5%	10.7%
Technical Potential	2.6%	5.2%	7.8%	10.3%	21.0%
Incremental Savings (mTherm)					
Achievable Potential	1,284	1,340	1,165	1,192	740
Economic Potential	2,572	2,586	2,600	2,611	1,961
Technical Potential	4,859	4,877	4,892	4,907	4,359

NSG C&I Analysis

MARKET CHARACTERIZATION
NSG Commercial

NSG billing data as primary source for usage by building type

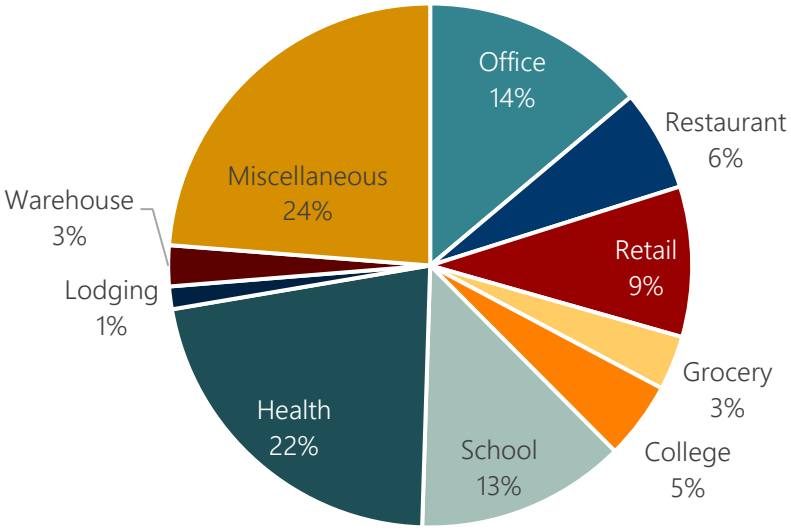
- Used Google Places API to obtain building types
- Validated the top 200 manually

Intensities are based on EIA's CBECS data and vetted with other AEG studies

- Floor space is inferred; it is the unit of analysis in the modeling

Miscellaneous segment includes industrial customers

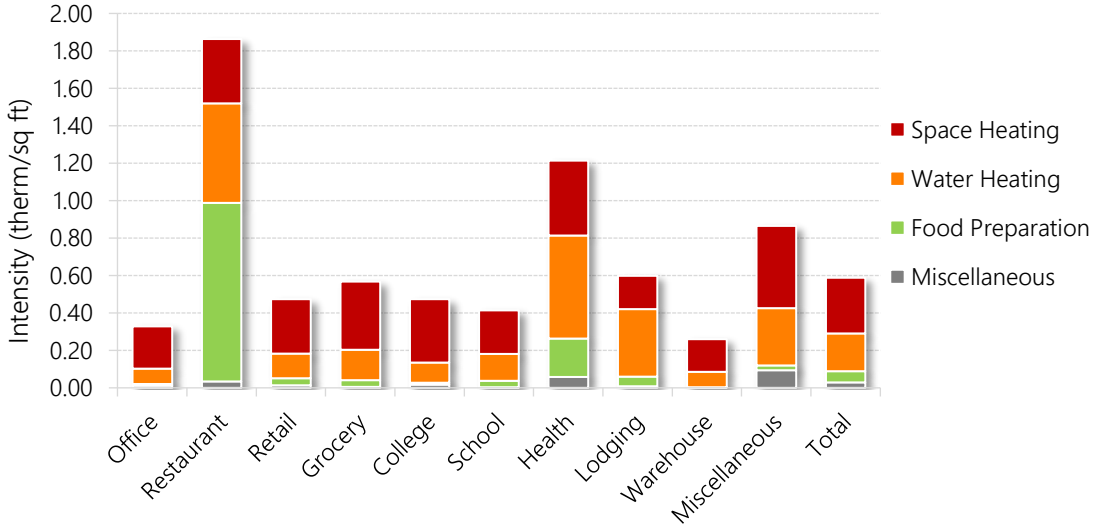
NSG Sales by Building Type

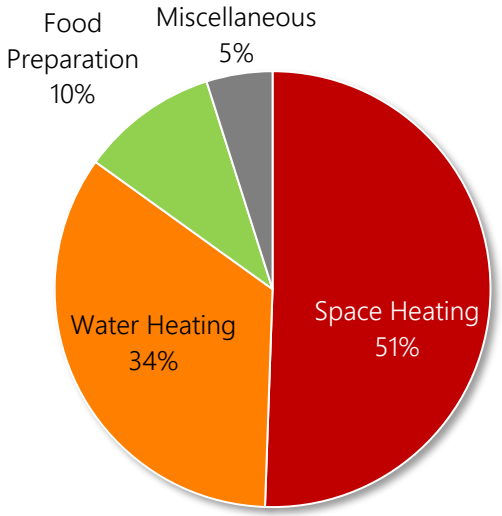


Segment	Usage (Mtherms)	Intensity (therms/sq ft)	Floor Space (MSF)
Office	6,193	0.33	18,907
Restaurant	2,791	1.86	1,497
Retail	4,141	0.47	8,754
Grocery	1,499	0.57	2,642
College	2,134	0.47	4,509
School	5,778	0.41	13,944
Health	9,745	1.21	8,032
Lodging	624	0.60	1,044
Warehouse	1,125	0.26	4,324
Miscellaneous	10,605	0.87	12,256
Total	**44,635**	**0.59**	**75,909**

ANNUAL CONSUMPTION BY END USE
NSG Commercial

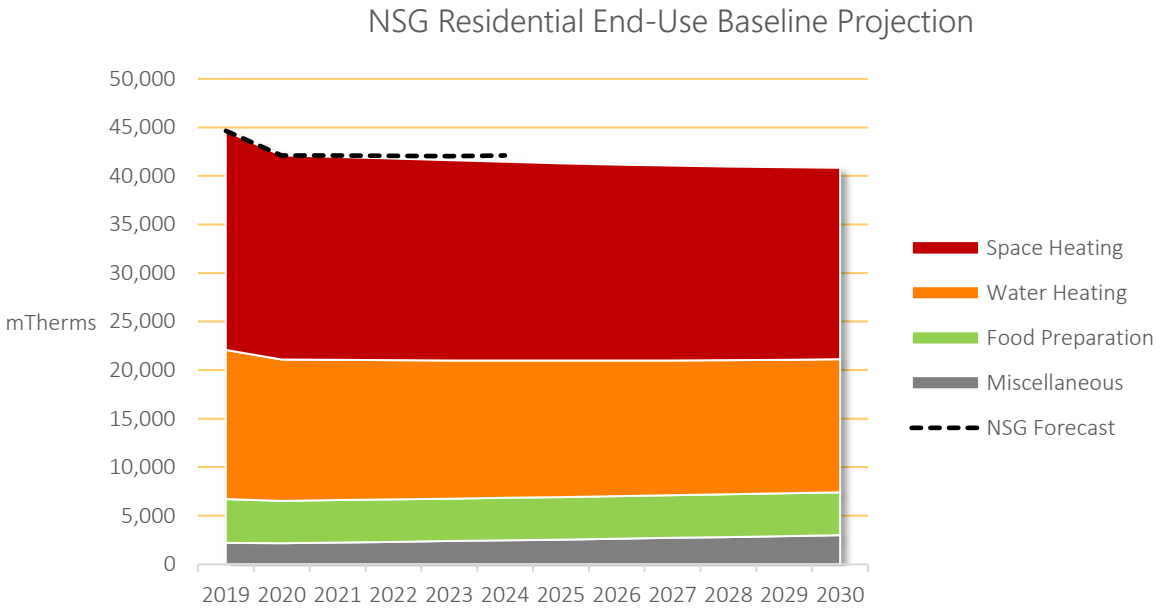
- Space heating and water heating end uses account for the majority of usage across all segments, except restaurants
- Restaurants use considerably more energy than other commercial segments due to large gas cooking usage





BASELINE END-USE PROJECTION
NSG Commercial

- Baseline includes effects of codes, standards and naturally occurring efficiency
- It is developed by technology and rolled up by end use
- Projection aligns well with NSG load forecast



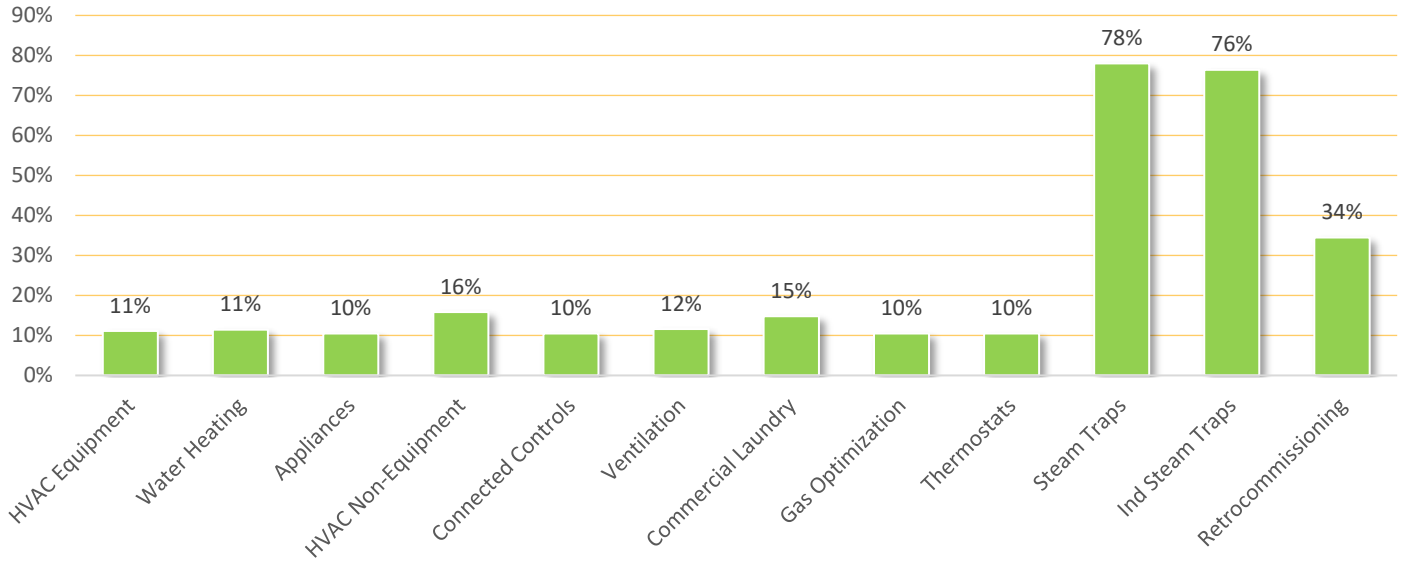
Natural Gas Use (mTherm)	2019	2025	2030	% Change ('19-'30)	Avg. Growth
Space Heating	22,564	20,325	19,726	-12.6%	-1.2%
Water Heating	15,339	14,048	13,714	-10.6%	-1.0%
Appliances	4,546	4,385	4,405	-3.1%	-0.3%
Miscellaneous	2,186	2,546	2,992	36.8%	2.9%
Total	**44,635**	**41,304**	**40,836**	**-8.5%**	**-0.8%**

MEASURE ADOPTION RATES
Achievable Potential and NSG

We computed adoption rates for the measure categories as follows:

$$Adoption\ Rate = \frac{Utility\ savings}{Tech\ Pot._{Year\ 1}}$$

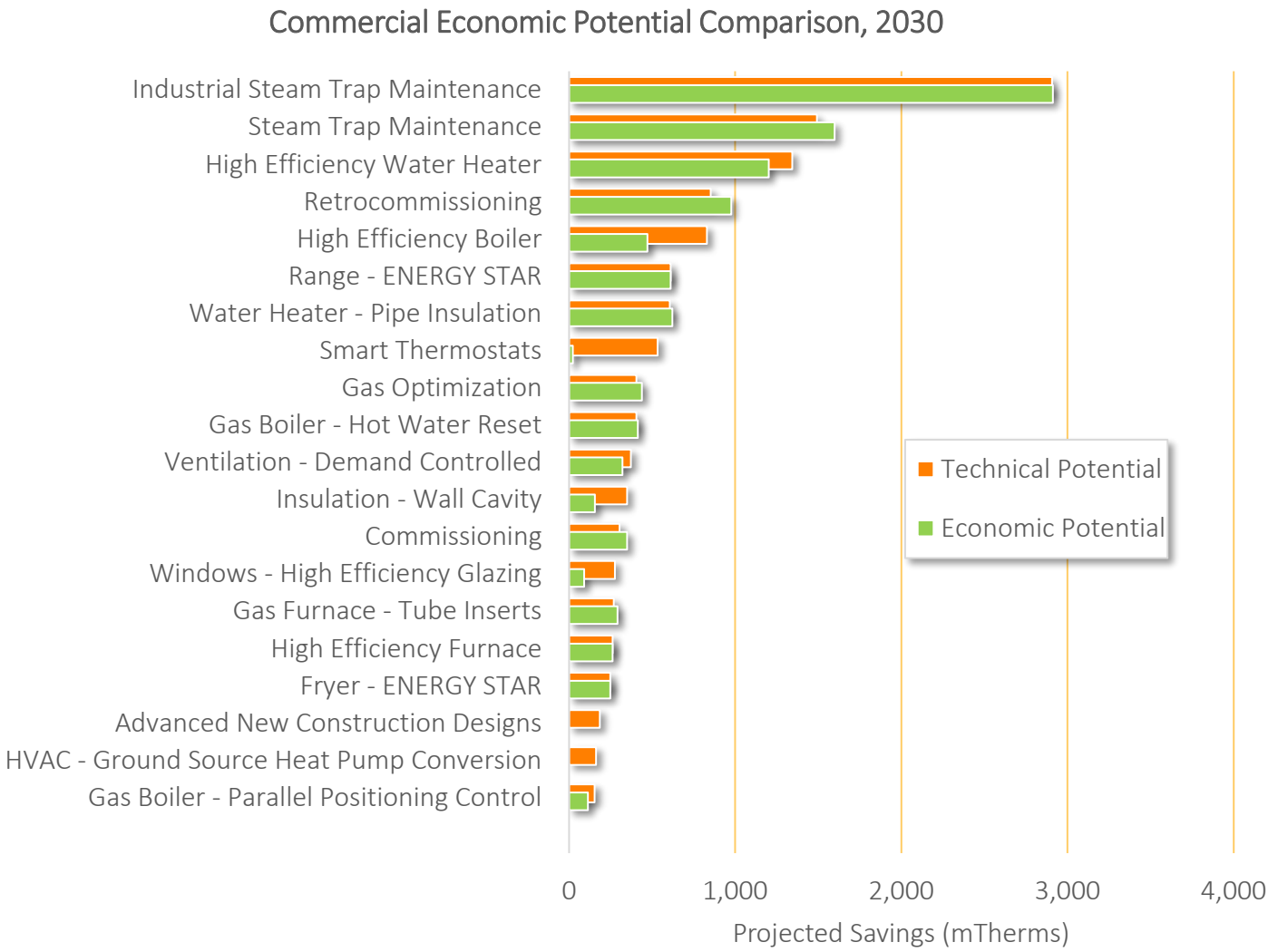
The following results use the adoption rates in the graph below



ECONOMIC POTENTIAL, TOP MEASURES

NSG Commercial, Cumulative Savings in **2030**

Many of the top technical measures are also cost-effective



Note: Economic savings are larger than Technical for some measures due to interactive effects of measure stacking

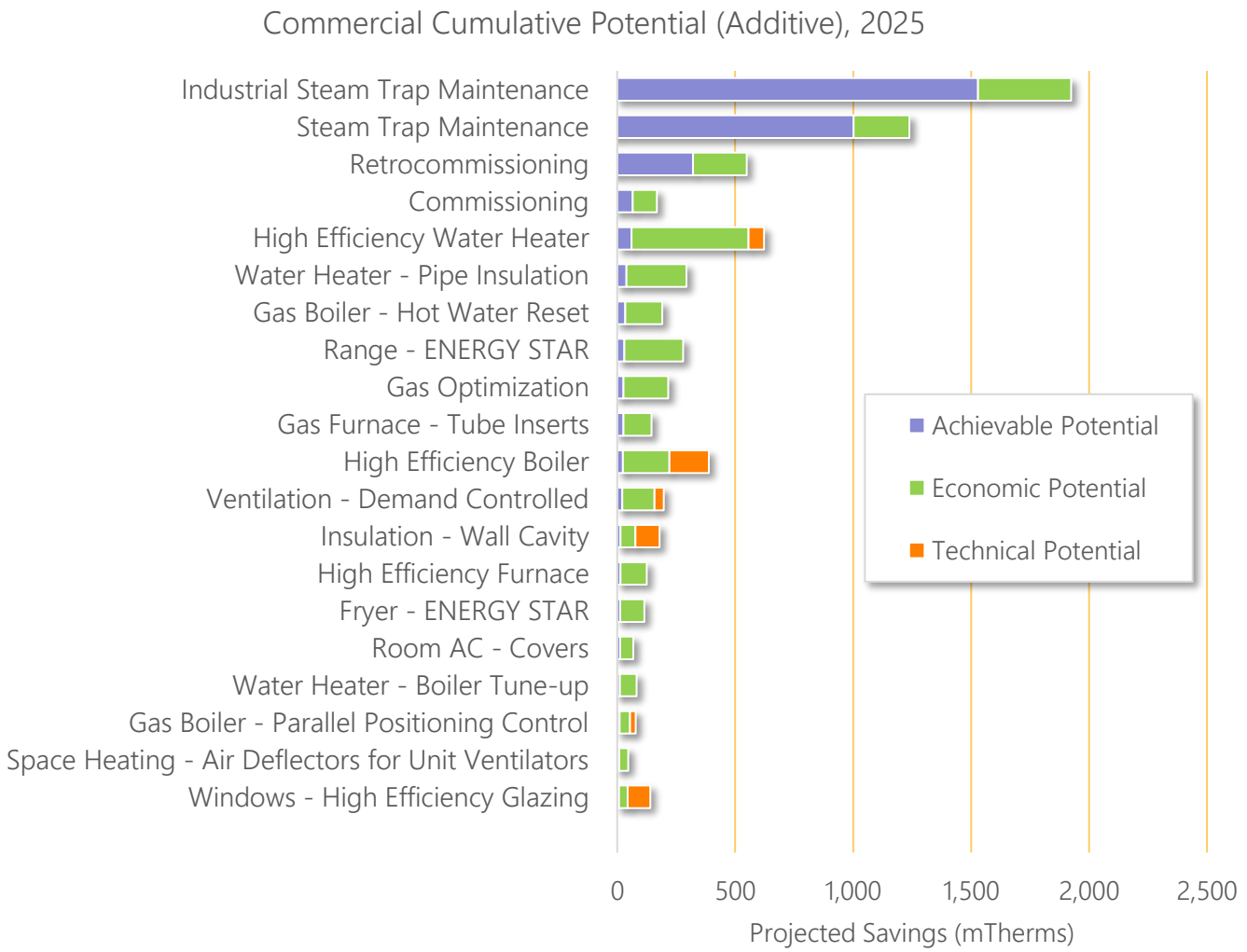
TOP MEASURES, ACHIEVABLE

NSG Commercial, Cumulative Savings in 2025

Steam Trap Maintenance makes up much of the early-year potential, along with the Retro-commissioning program

- Using TRM 9.0 instead of TRM 8.0 would reduce steam trap savings

Boiler Tune-ups also provide savings in recent program accomplishments, but do not pass the economic screen in the study.



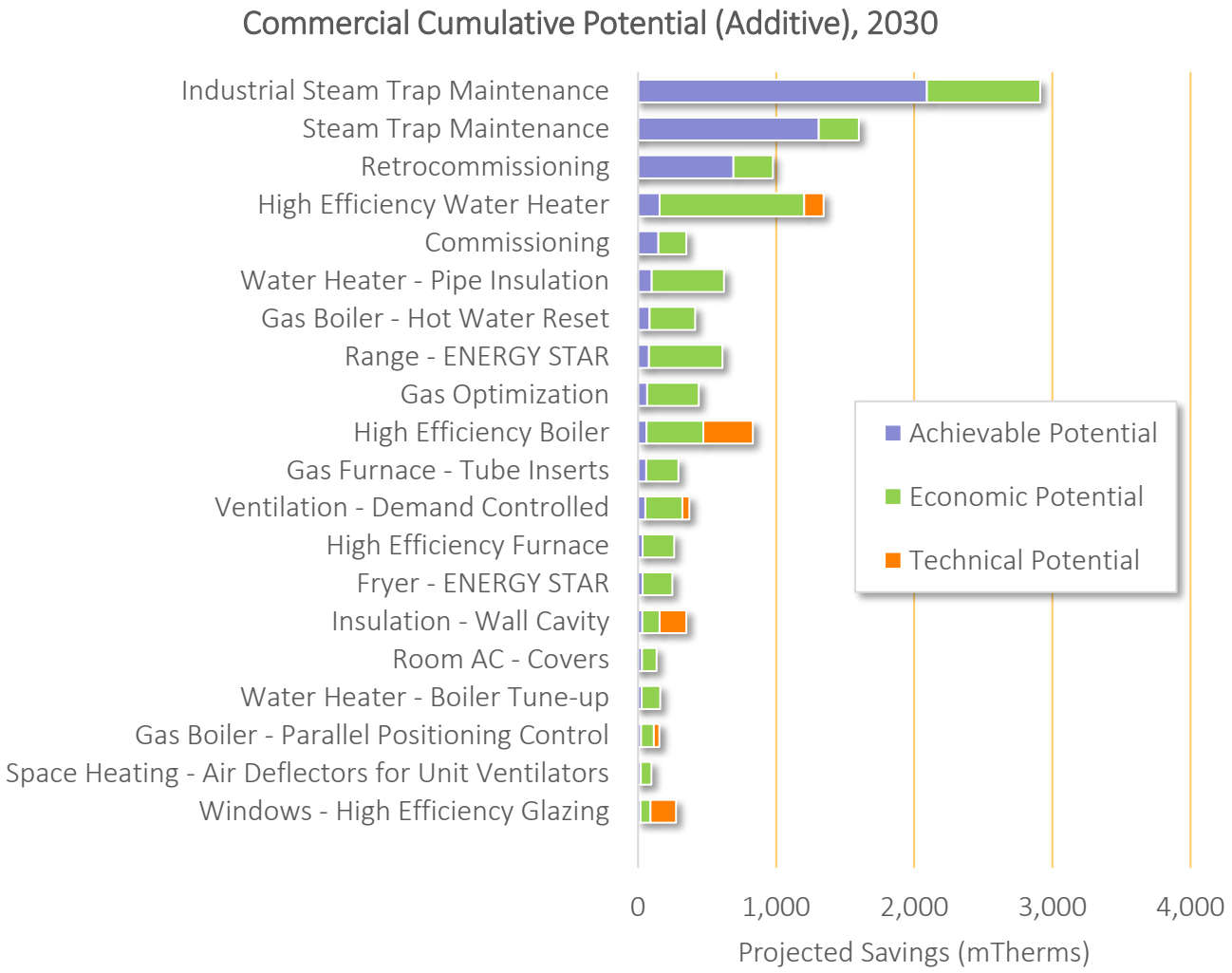
TOP MEASURES, ACHIEVABLE

NSG Commercial, Cumulative Savings in **2030**

Steam Trap Maintenance and Retrocommissioning continue to dominate the savings in the long-term outlook.

High Efficiency Water Heaters and pipe insulation show large potential in the future.

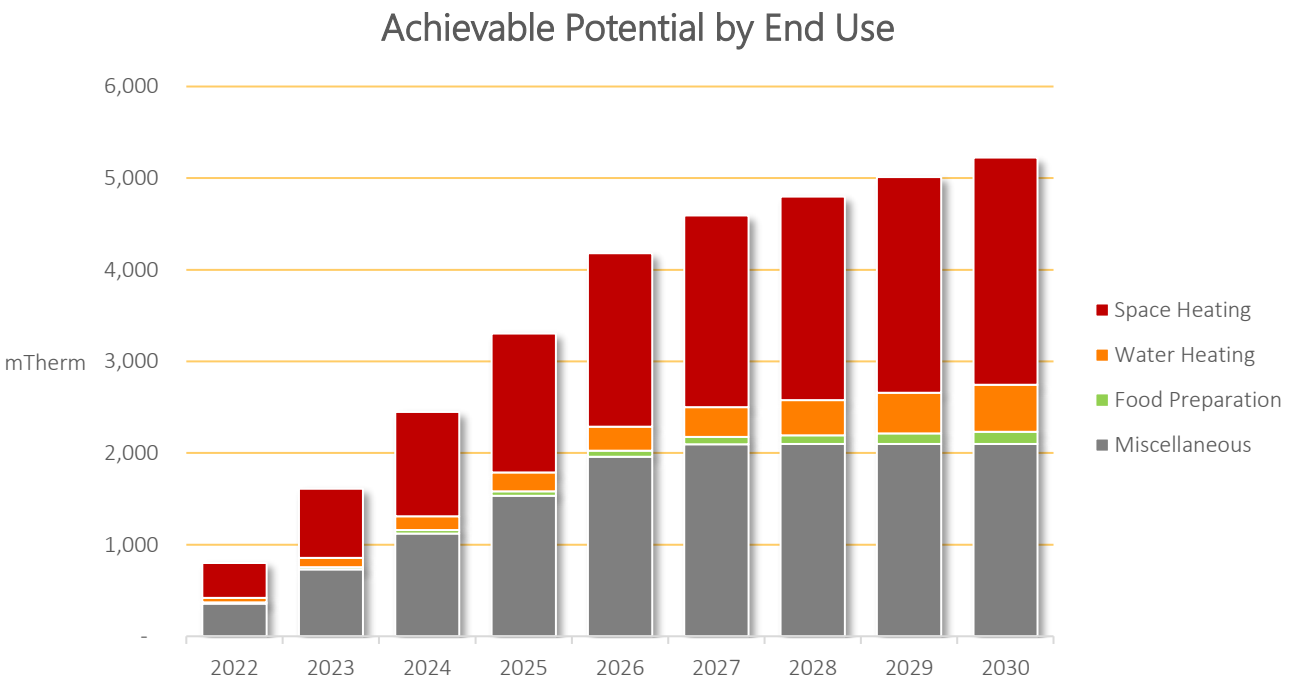
Space Heating savings exist in the later years of the study through High Efficiency Boilers and Furnaces.



ACHIEVABLE POTENTIAL SAVINGS

NSG Commercial Achievable Potential by End Use

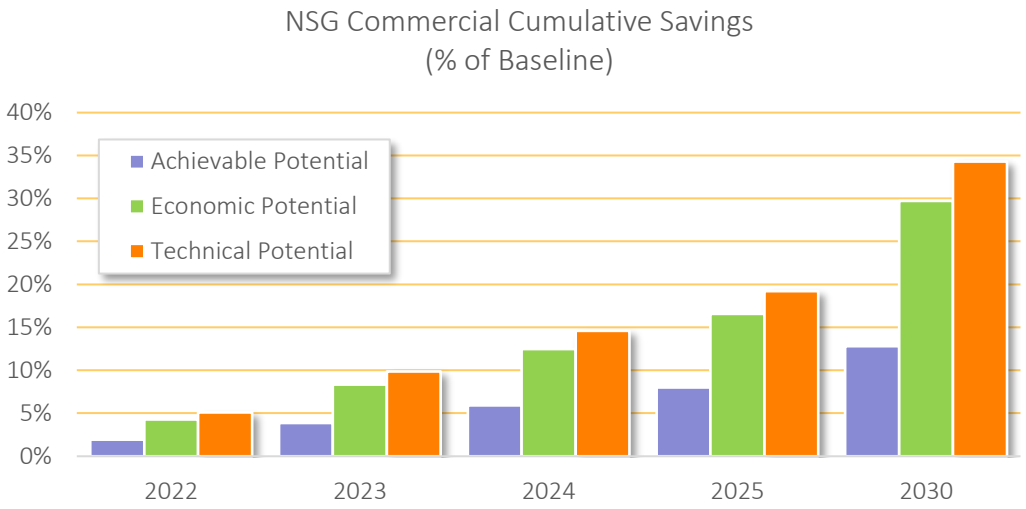
- Space heating and miscellaneous (industrial process) end uses account for the majority of savings
- Steam Trap maintenance is the top contributor to savings



SUMMARY OF MPS POTENTIAL ESTIMATES
NSG Commercial

Achievable Potential:

- 3,303 mTherms (8%) after 4 program years
- 5,225 mTherms (12.8%) after 9 years, 2030



Summary of Energy Savings (mTherm), Selected Years	2022	2023	2024	2025	2030
Reference Baseline (mTherm)	41,804	41,618	41,452	41,304	40,836
Energy Savings (Cumulative mTherm)					
Achievable Potential	801	1,611	2,447	3,303	5,225
Economic Potential	1,782	3,464	5,162	6,837	12,123
Technical Potential	2,122	4,096	6,043	7,928	13,998
Energy Savings (% of Baseline)					
Achievable Potential	1.9%	3.9%	5.9%	8.0%	12.8%
Economic Potential	4.3%	8.3%	12.5%	16.6%	29.7%
Technical Potential	5.1%	9.8%	14.6%	19.2%	34.3%
Incremental Savings (mTherm)					
Achievable Potential	801	818	843	885	334
Economic Potential	1,782	1,733	1,727	1,766	1,013
Technical Potential	2,122	2,048	2,019	2,033	1,226

NSG Potential Estimates

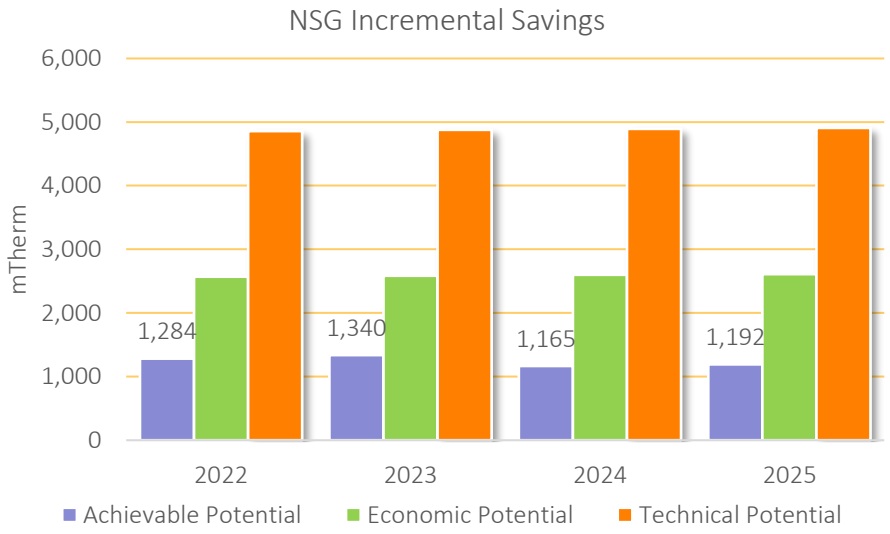
All Sectors

NSG SUMMARY OF POTENTIAL BY SECTOR

First-year Savings, All Sectors

Achievable potential excludes savings from codes, standards and naturally-occurring efficiency

- Achievable Potential is 1,284 mTherm (0.6%) in program year 1 and 1,192 mTherm (0.5%) after 4 program years, 2025



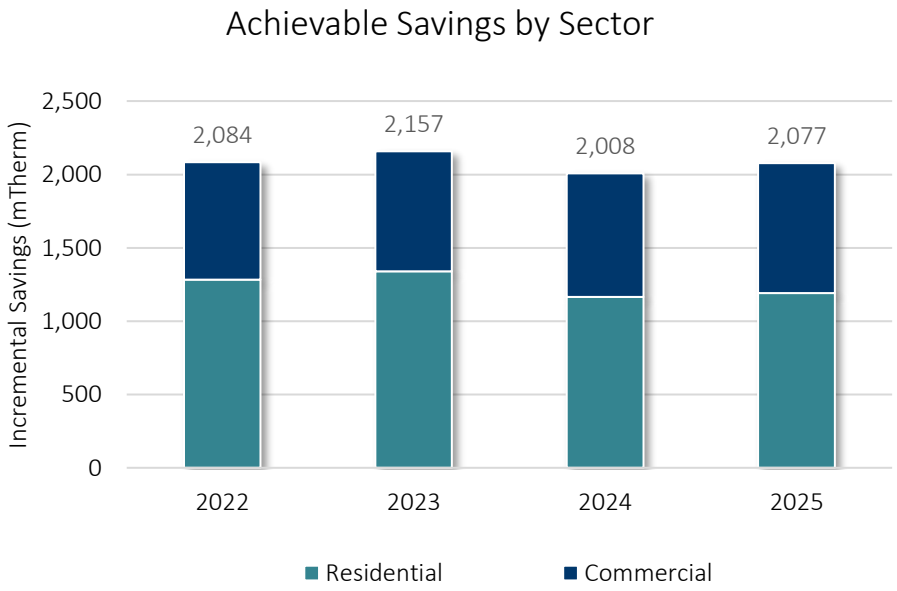
Summary of Energy Savings (mTherm), Selected Years	2022	2023	2024	2025
Reference Baseline (mTherm)	226,171	226,847	227,586	228,233
First-year Savings (mTherm)				
Achievable Potential	1,284	1,340	1,165	1,192
Economic Potential	2,572	2,586	2,600	2,611
Technical Potential	4,859	4,877	4,892	4,907
First-year Savings as % of Baseline				
Achievable Potential	0.6%	0.6%	0.5%	0.5%
Economic Potential	1.1%	1.1%	1.1%	1.1%
Technical Potential	2.1%	2.2%	2.1%	2.1%

NSG SUMMARY OF POTENTIAL

First-year Savings

Residential sector accounts for 57-69% of first-year savings in each program year

Commercial sector also includes Industrial customers



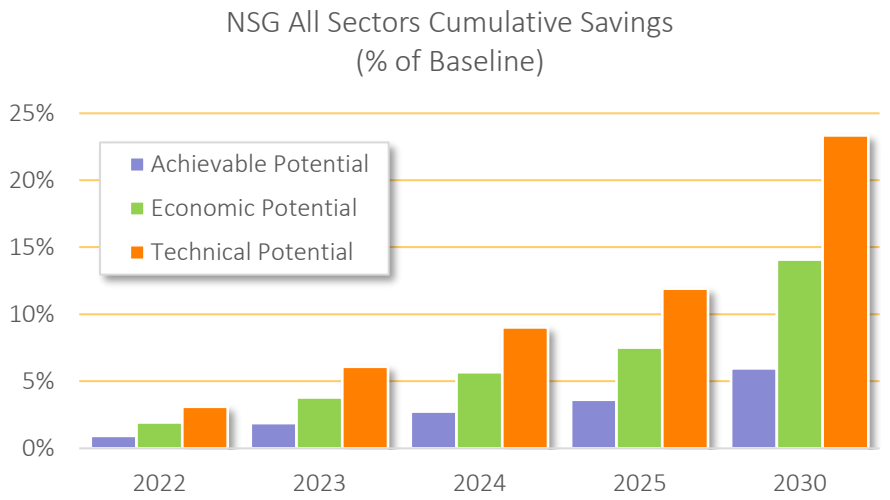
Achievable Potential by Sector	2022	2023	2024	2025
First-year Savings (mTherm) - Total	**2,084**	**2,157**	**2,008**	**2,077**
Residential	1,284	1,340	1,165	1,192
Commercial	801	818	843	885
First-year Savings (% of Baseline) - Total	**0.9%**	**1.0%**	**0.9%**	**0.9%**
Residential	0.6%	0.6%	0.5%	0.5%
Commercial	0.4%	0.4%	0.4%	0.4%

NSG SUMMARY OF POTENTIAL

Cumulative Savings, All Sectors

Achievable potential excludes savings from codes, standards and naturally-occurring efficiency

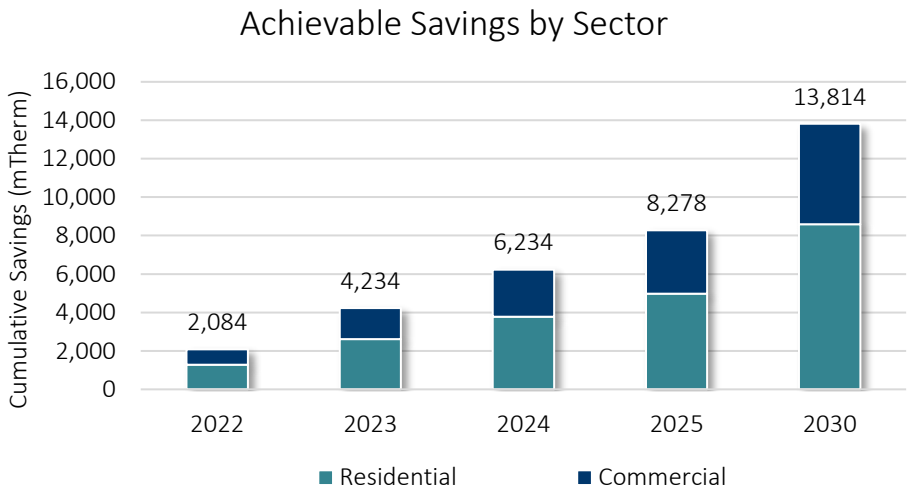
- Achievable Potential is 8,278 mTherm (3.6%) after 4 program years and 13,814 mTherm (6%) after 9 years, 2030



Summary of Energy Savings (mTherm), Selected Years	2022	2023	2024	2025	2030
Reference Baseline (mTherm)	226,171	226,847	227,586	228,233	231,648
Cumulative Savings (mTherm)					
Achievable Potential	2,084	4,234	6,234	8,278	13,814
Economic Potential	4,353	8,614	12,896	17,153	32,593
Technical Potential	6,981	13,777	20,515	27,149	54,053
Savings as % of Baseline					
Achievable Potential	0.9%	1.9%	2.7%	3.6%	6.0%
Economic Potential	1.9%	3.8%	5.7%	7.5%	14.1%
Technical Potential	3.1%	6.1%	9.0%	11.9%	23.3%

NSG SUMMARY OF POTENTIAL BY SECTOR
Cumulative Savings

By 2030, Residential savings account for about 62% of total savings



Achievable Potential by Sector	2022	2023	2024	2025	2030
Cumulative Savings (mTherm) - Total	**2,084**	**4,234**	**6,234**	**8,278**	**13,814**
Residential	1,284	2,623	3,787	4,974	8,589
Commercial	801	1,611	2,447	3,303	5,225
Energy Savings (% of Baseline) - Total	**0.9%**	**1.9%**	**2.7%**	**3.6%**	**6.0%**
Residential	0.6%	1.2%	1.7%	2.2%	3.7%
Commercial	0.4%	0.7%	1.1%	1.4%	2.3%

THANK YOU!