

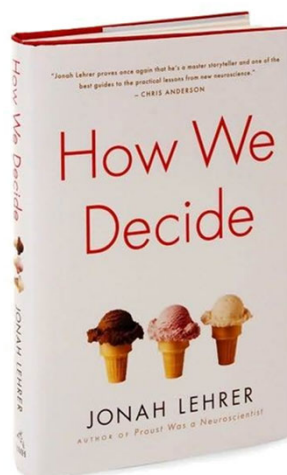


Track: Residential Natural Gas Unit #8: Consumer Preferences

Eric Burgis, Energy Solutions Center

■1

Understanding Customer Preferences



According to *How We Decide*

‘motivate’ stems from the Latin
root word ‘movere’

which means the driver behind
customer purchasing decisions is:

EMOTION!



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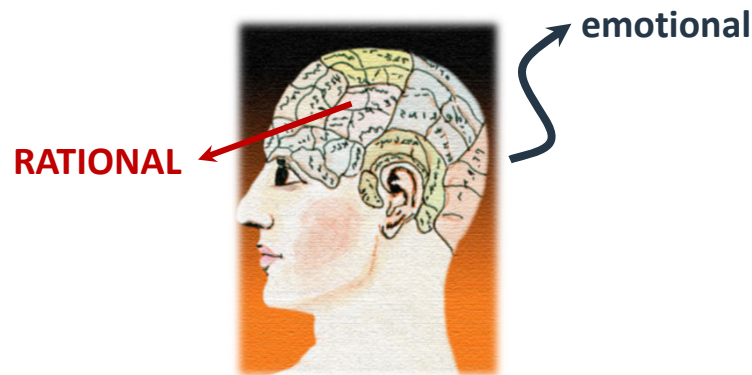
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We Know Home Buying is Rational & Emotional

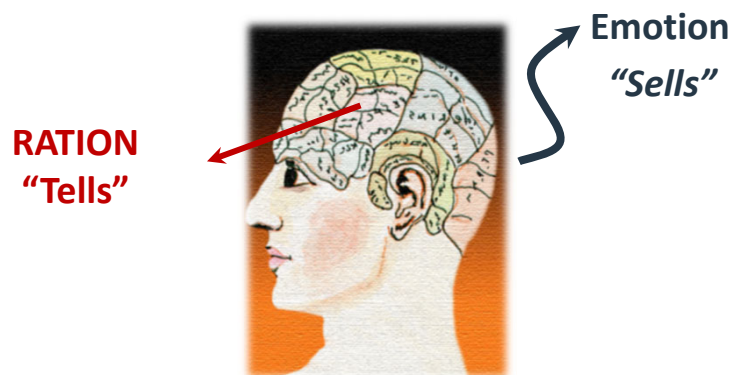


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...or another way to say it...



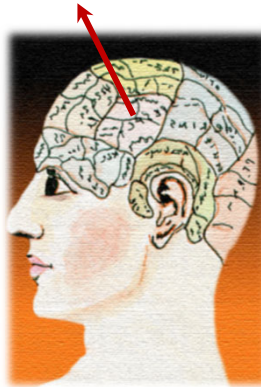
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...the same is true for Gas..

RATIONAL



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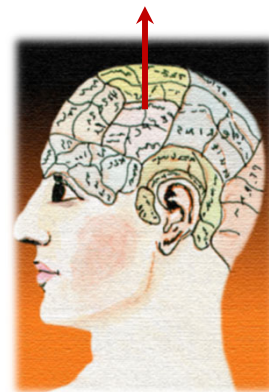
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Customers Say ...

- “Natural gas is a reliable energy source.”
- “Natural gas provides an abundant energy supply.”
- “Natural gas is an efficient energy source.”
- “Natural gas provides more continuous hot water, is the best choice for cooking and provides the most comfortable home heating.”

RATION Tells



"Customer Preference Study" conducted by Sparks Research 2025

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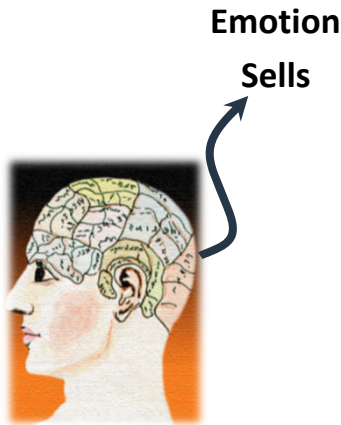
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More Importantly, Customer's Feel ...



- “Natural gas provides the most comfortable heat for the home”
- “Natural gas is the best overall value for household energy”
- “Safety and comfort”
- “Natural gas is the best choice for cooking”



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“Customer Preference Study” conducted by Sparks Research 2025

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Customer emotions describe their mind's eye



‘Human ability for visualization’



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“Gas Heat for my home is warmer!”

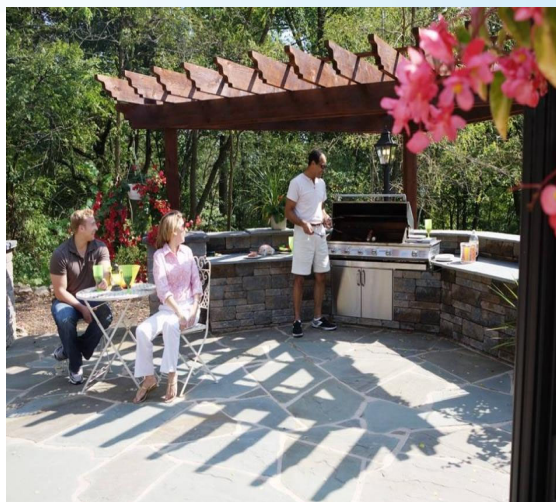


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“Gas is more dependable and cheaper.”



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“I prefer cooking on a gas stove.”



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“I love natural gas!”



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An Example of Smart Selling

- Assess customer needs first - build sales pitch upon these needs
- Show efficiency upgrade costs as positive cash flow rather than payback period
- A builder went from \$0 in HVAC upgrades to averaging \$6,000/home
- They captured their customer emotionally, then closed with solutions & education



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Let Your Upgrades Create Excitement!



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Consumer Preference Studies

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Recent Studies

- Sparks Research – Consumer Preference Study 2025
- What Home Buyers Want – 2024 report, NAHB
- AGA - Building for Efficiency: Home Appliance Cost and Emissions Comparison - 2024
- NAHB Special Report on Price Differential of Gas versus Electric Home, 2021



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Sparks Research Consumer Preference Study 2025



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Sparks Research

- A full-service marketing research firm
- Perform studies in:
 - Brand and image awareness
 - B to B research
 - Competitive Intelligence
 - Mystery Shoppers



107 Clemson Street
Clemson, South Carolina 29631
www.sparksresearch.com



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New Homeowner Energy Preference Study

- Sampled homeowners
- Identified current energy sources
- Identified preferred energy sources
- Compared current energy to preferred sources



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Methodology

- What:** A non-sponsored quantitative study among consumers (USA and Canada) who are 18 years old or older, who make/share in home energy decisions and own a condo, duplex, single family home or mobile home.
- Who:** A total of 2,000 on-line surveys utilizing an on-line panel provided by Lucid were completed. Regional sample sizes:
USA: 1,600 surveys (Northeast – 400, Southeast – 400, Central – 400, West – 400)
Canada: 400 surveys
- When:** March 19 – April 10, 2025
- Why:** To understand home energy usage, satisfaction and preference.



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- In which country do you live?
- Please select the category that contains your age.
- Are you the person in your household who makes or shares in the decisions concerning your home energy needs, such as electricity, natural gas, and propane? (Terminate if no)
- What is the zip code or postal code of your primary residence?
- Do you own or rent your current home?
- How would you classify your current home? Is it a condo, duplex, single home or mobile home



Survey Questions

1. Which energy type do you **primarily use** for your...? (Home heating, Water heating, Stovetop cooking, Oven, Clothes drying, Fireplace, Back-up generator)
2. How do you rate your **overall satisfaction** with (insert energy type) for your...? (Scale – 1 = Very Dissatisfied; 10 = Very Satisfied) (Home heating, Water heating, Stovetop cooking, Oven, Clothes drying)
3. And which energy type do you **prefer** for your...? (Home heating, Water heating, Stovetop cooking, Oven, Clothes drying) (Electricity, Natural Gas, Propane, Heating Oil, Other (please specify), Do not use, I don't know)
4. For home heating, which energy source would you recommend to a family member or friend?
5. For a water heater, which energy source would you recommend to a family member or friend?



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Survey Questions (cont'd)

Which of the following reasons would influence your home energy decisions for your primary residence (for example, changing from one energy source to another...from electricity to natural gas or natural gas to electricity)?

Choose the one energy source that best represents your opinion on the following attributes: (Electric, Natural Gas, Propane, Heating Oil, Solar, Wind)

1. Is the **most affordable** energy source
2. Is the **most reliable** energy source
3. Is the **cleanest** energy source
4. Is the energy source with the **least negative impact** on the environment
5. Is the energy source with **most negative impact** on the environment

(ask if Q1 does not mention Natural Gas) Have you ever used Natural Gas in your current home or a previous home?



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Survey Questions (cont'd)

Please rate your agreement with each of the following statements about natural gas. If you do not know, then select "NA" (Rotate Statements; Scale – 1 = Strongly Disagree; 10 = Strongly Agree)

Natural gas...

- | | |
|---|---|
| <ul style="list-style-type: none"> a. Is a safe energy source b. Is an environmentally friendly energy source c. Is a clean (produces less carbon emissions) energy source d. Is a reliable energy source e. Is an affordable energy source f. Energy prices are stable over time g. Is an efficient energy source h. Is good for the economy i. Supports our nation's energy independence | <ul style="list-style-type: none"> j. Provides abundant energy supply k. Provides abundant energy supply l. Is the best choice for cooking m. Provides more continuous hot water n. Provides the most comfortable home heating o. Costs less for water heating p. Costs less for home heating q. Is the best overall value for household energy r. Is the best energy for higher end luxury appliances s. Is energy that will help achieve carbon emission goals t. Provides the energy needed for energy companies to generate electricity u. Increases the value of your home |
|---|---|



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Survey Questions (cont'd)

Demographics

What type of water heater do you have? [Utilize images]

1. Tank
2. Tankless
3. Don't know

Is your household's total annual income before taxes?

1. Less than \$50,000
2. \$50,000 but less than \$75,000
3. \$75,000 but less than \$100,000
4. \$100,000 but less than \$150,000
5. \$150,000 but less than \$250,000
6. \$250,000 or more
7. Prefer not to answer

Please specify your ethnicity?

1. White
2. Black or African American
3. Hispanic or Latino
4. Asian or Pacific Islander
5. Native American or American Indian
6. Other
7. Prefer not to answer

Finally, what is your gender?

1. Male
2. Female
3. Other (specify) _____
4. Prefer not to answer



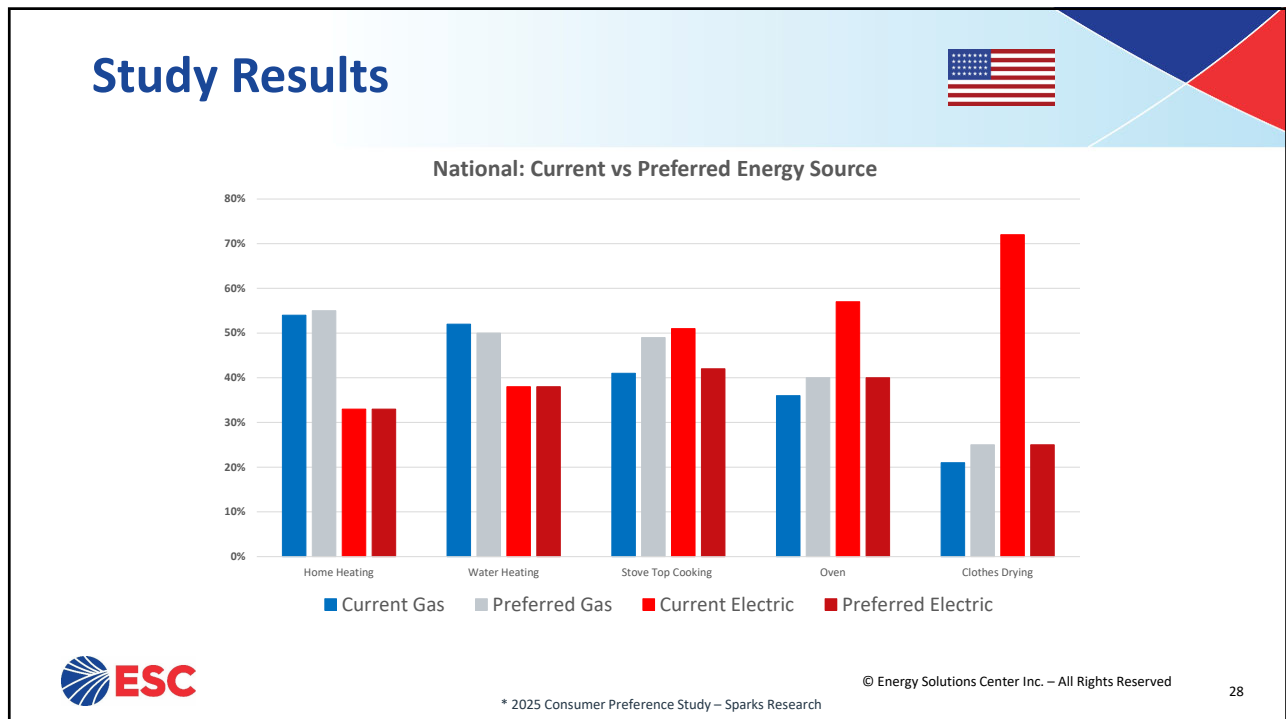
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Summary:



49% of homebuyers prefer gas for cooking



Only 42% want electric



55% of homebuyers prefer gas heat



Only 33% want electric



50% of homebuyers prefer gas water heaters



Only 38% want electric



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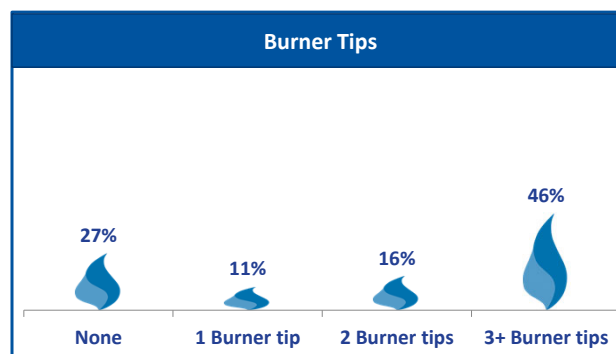
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Home Energy Usage



Slightly more than one out of four (27%) US respondents do not use Natural gas while **46%** have **three or more burner tips**.



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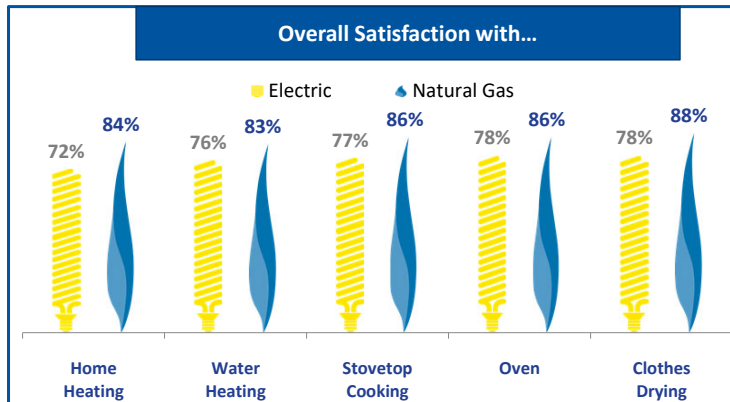
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Overall Satisfaction



Natural Gas users tend to be more satisfied with their energy source.



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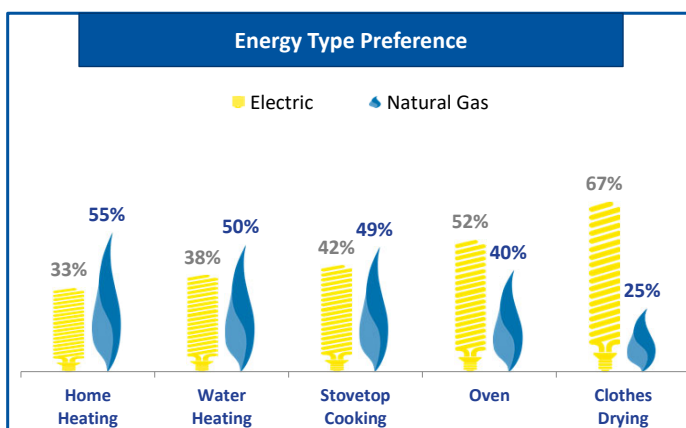
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Energy Type Preference



Natural Gas is the energy type most preferred for **home heating**, **water heating** and **stovetop cooking**.



Natural Gas preference among those already using Natural Gas is much higher than those not using Natural Gas.

	NG User		NG Non-user	
	Electric	Nat. Gas	Electric	Nat. Gas
Home heating	25%	68%	53%	19%
Water heating	27%	64%	65%	13%
Stovetop cooking	34%	59%	62%	23%
Oven	45%	50%	71%	16%
Clothes drying	61%	32%	81%	8%



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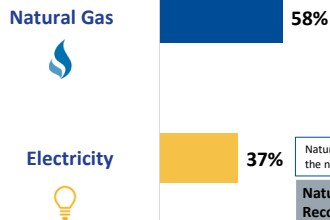
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Recommended Energy Source



Natural Gas is the energy type most recommended for **home heating** and **water heating**.

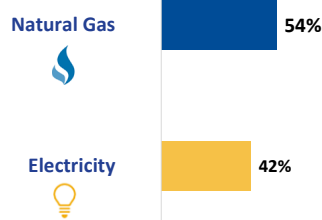
For Home Heating



Natural Gas recommendations increase with the number of burner tips.

Natural Gas Recommendation by burner tips	%
Non-Natural Gas	28%
NG – 1 burner tip	33%
NG – 2 burner tips	62%
NG – 3+ burner tips	81%

For Water Heating



Natural Gas recommendations increase with the number of burner tips.

Natural Gas Recommendation by burner tips	%
Non-Natural Gas	23%
NG – 1 burner tip	31%
NG – 2 burner tips	59%
NG – 3+ burner tips	76%



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Reasons for Home Heating Source Selection



- **Affordability** is the main reason for recommending Natural Gas.
- **Safer energy source** is the main reason for recommending Electricity.

Reason	Percent Selecting	
More affordable	47%	
Efficient	15%	
Cleaner	13%	
Most reliable	10%	
Works better	10%	
Generally positive	8%	
Less outages	7%	
Easy to use	6%	
What I'm used to	5%	
Heats quicker	5%	

Reason	Percent Selecting	
Safer	27%	
More affordable	19%	
Easy to use	16%	
Cleaner	10%	
Generally positive	9%	
Better for the environment	8%	
What I'm used to	7%	
Efficient	6%	
Most reliable	5%	
Use for all appliances	5%	



* Why would you recommend natural gas/electricity?

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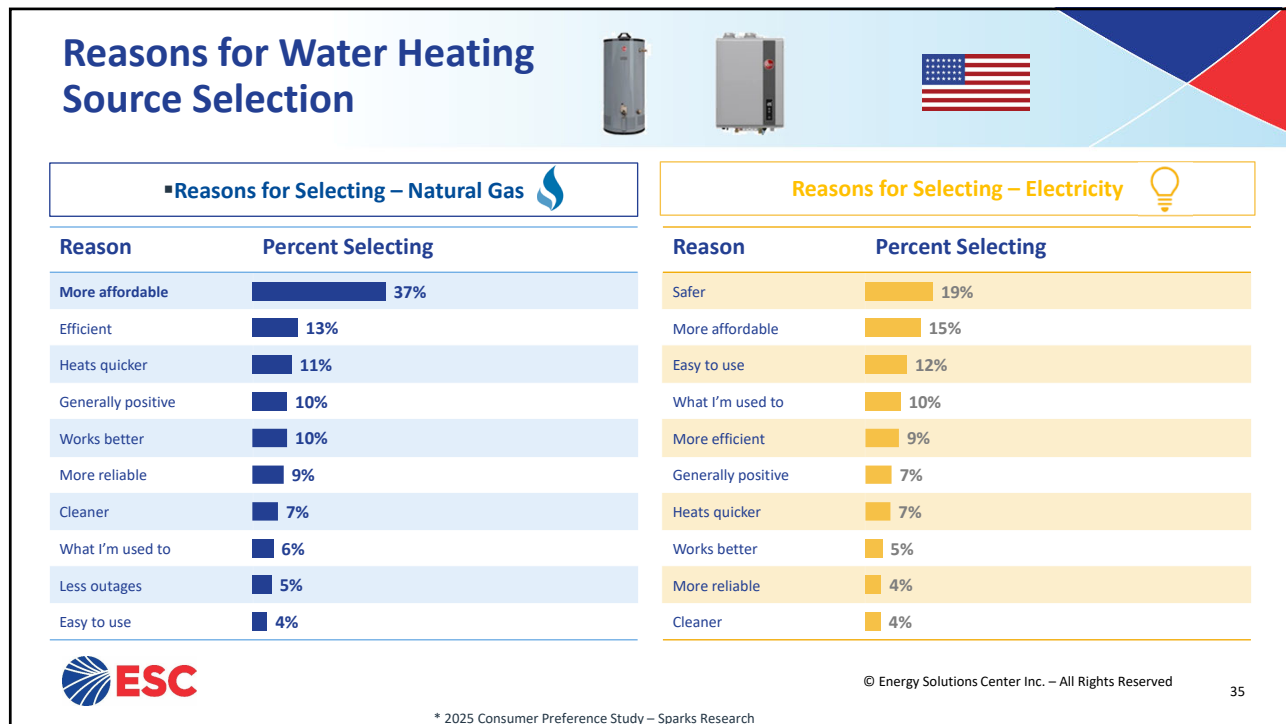
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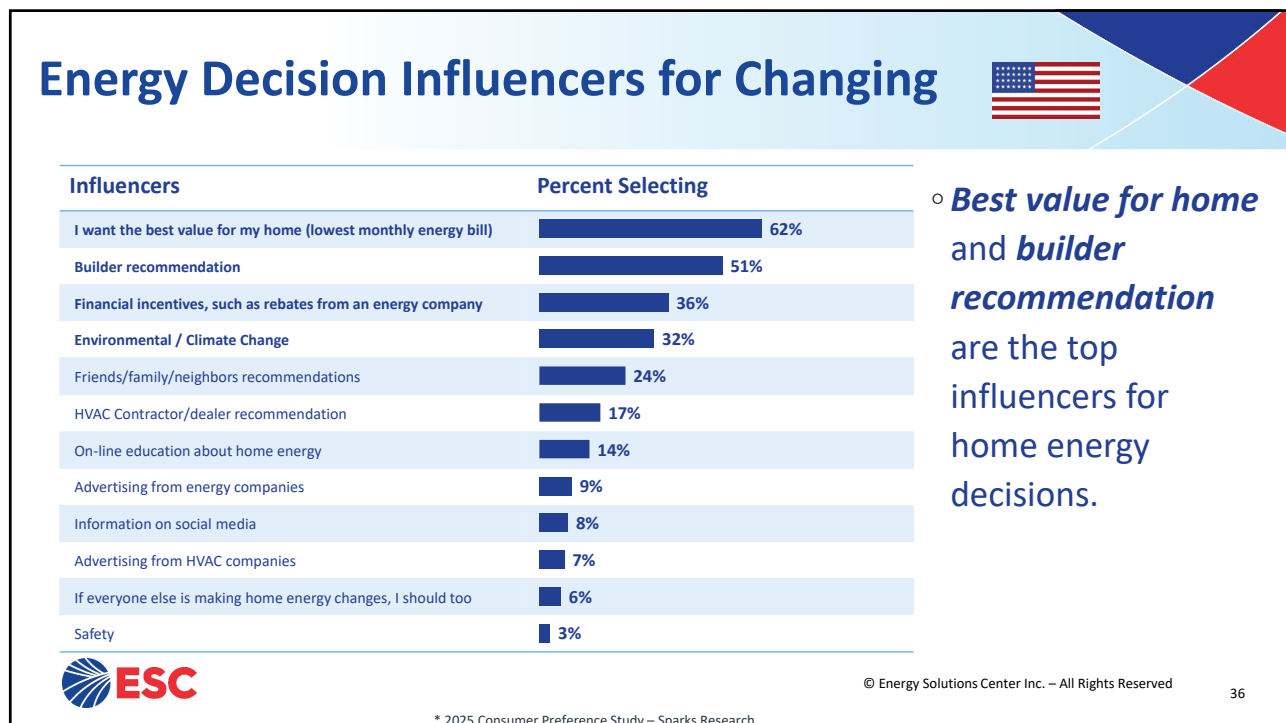
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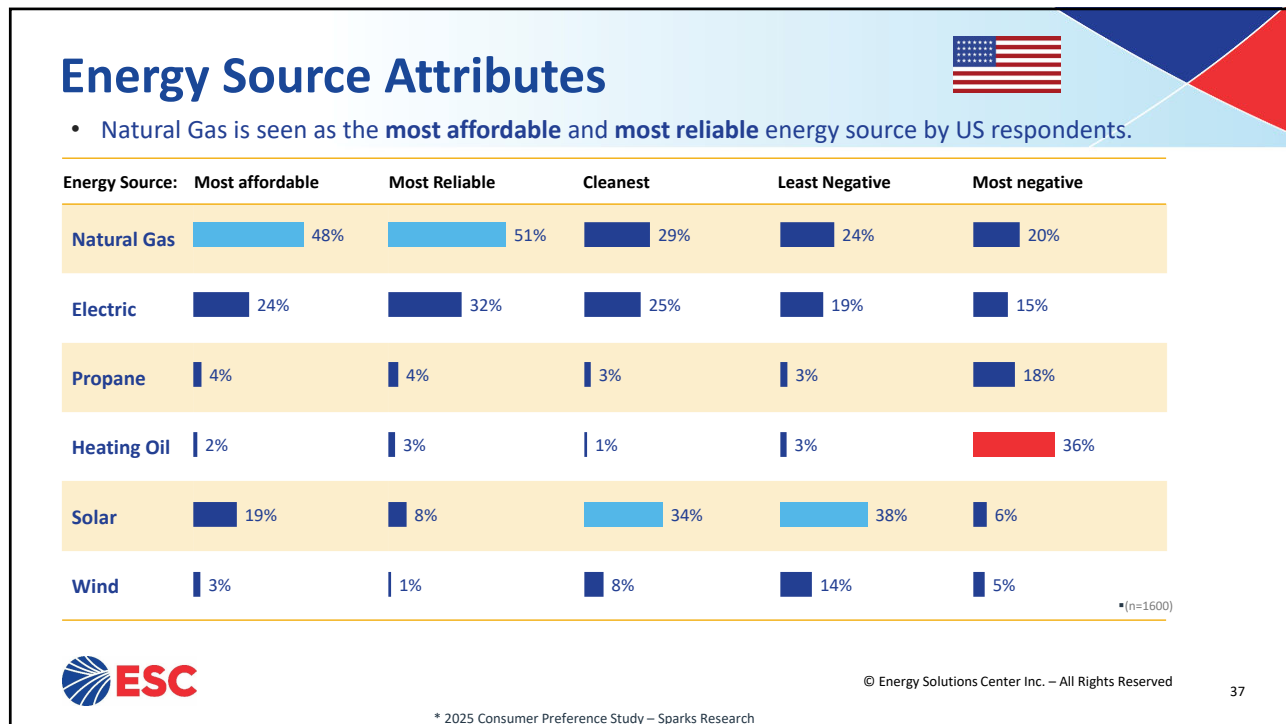
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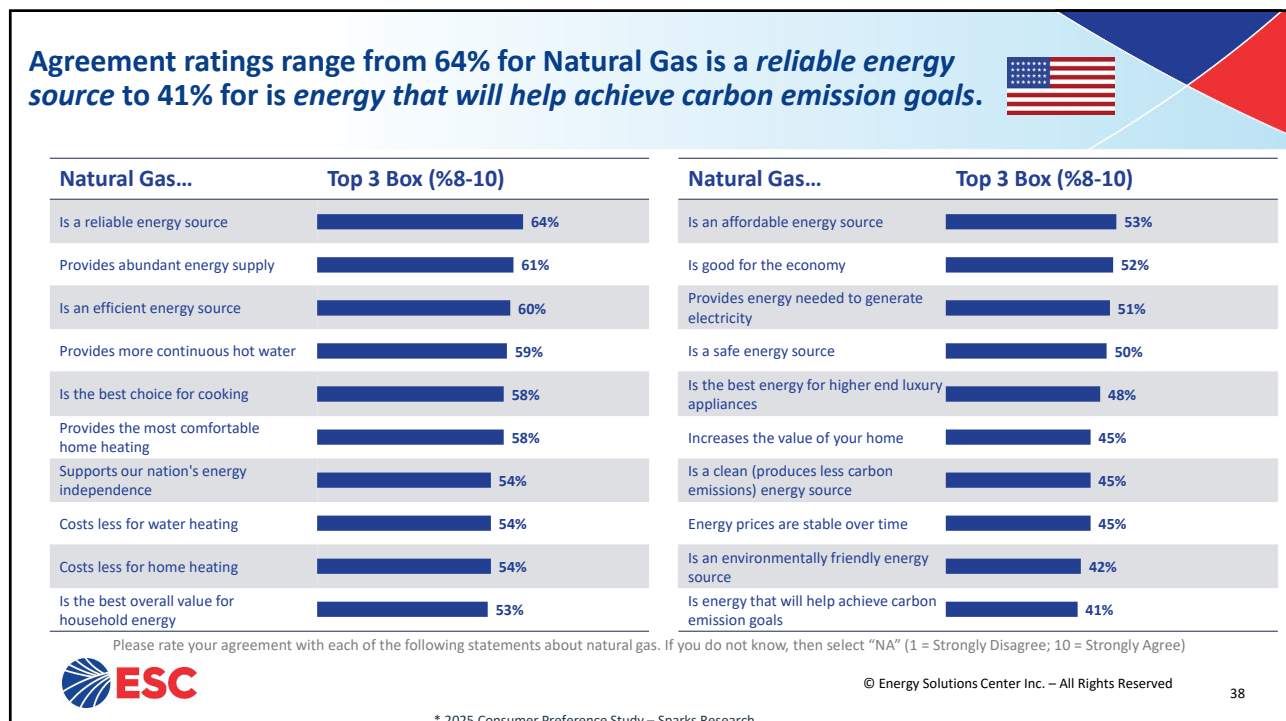
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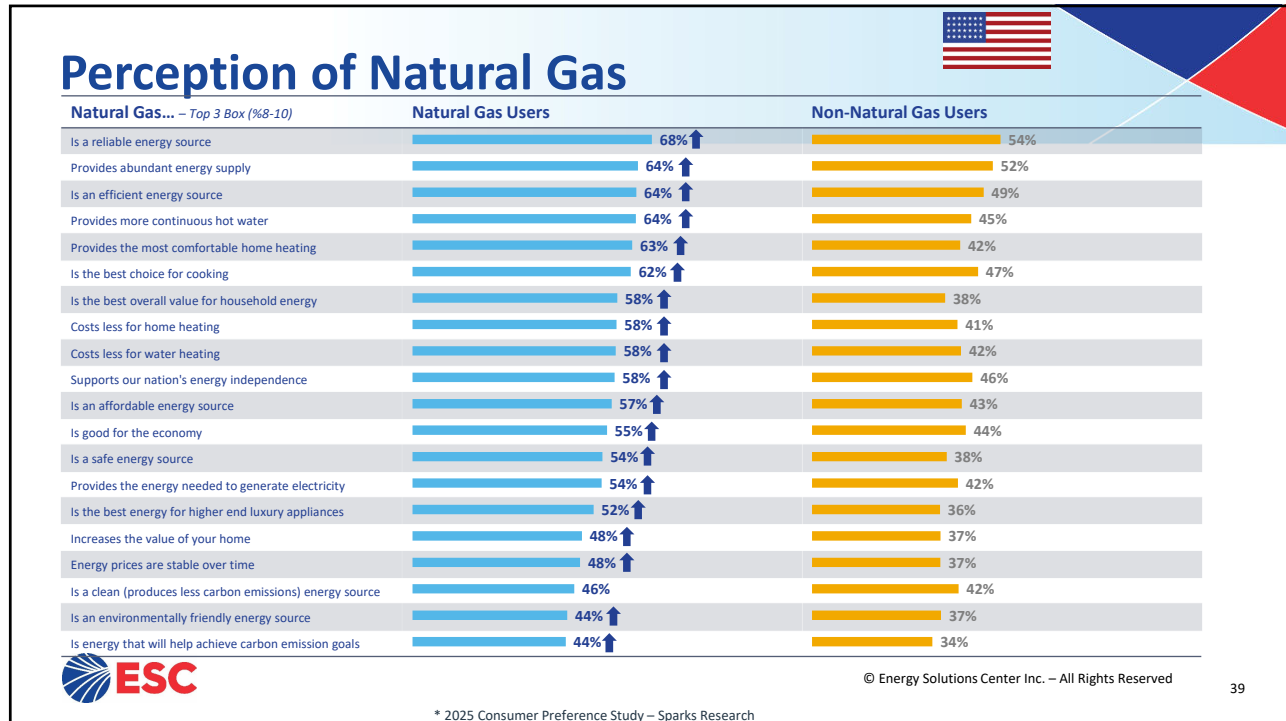
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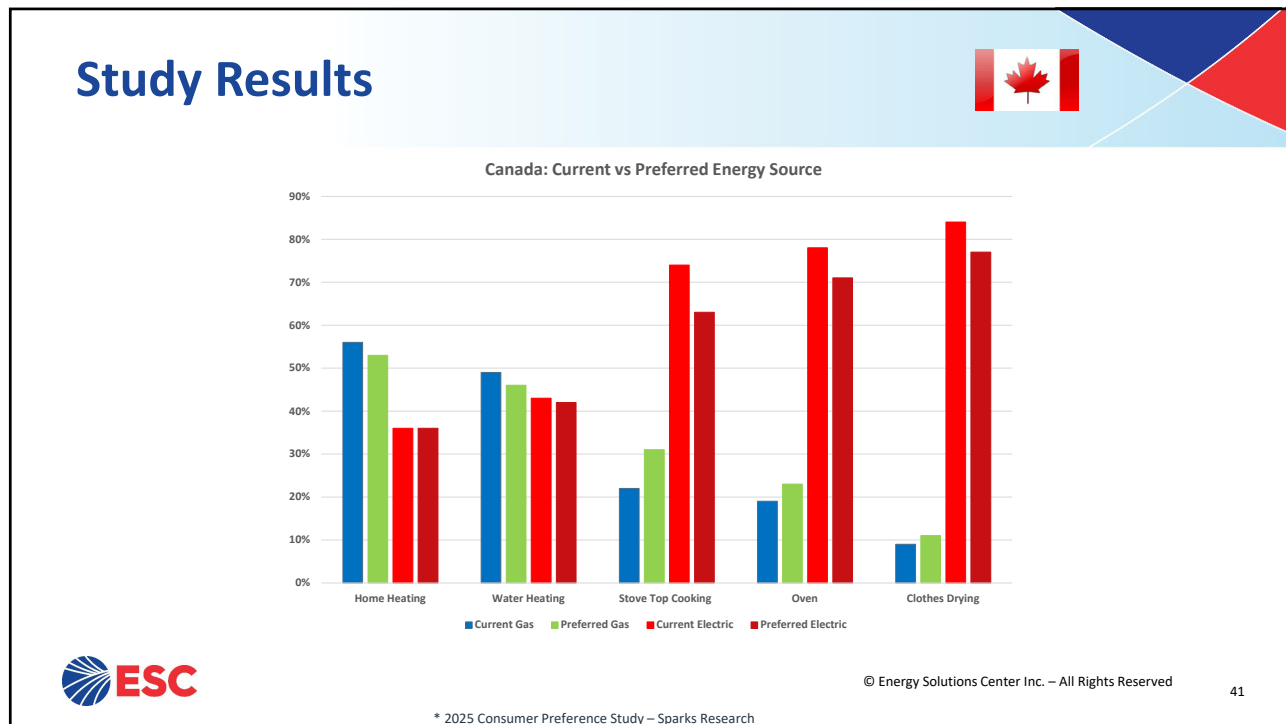
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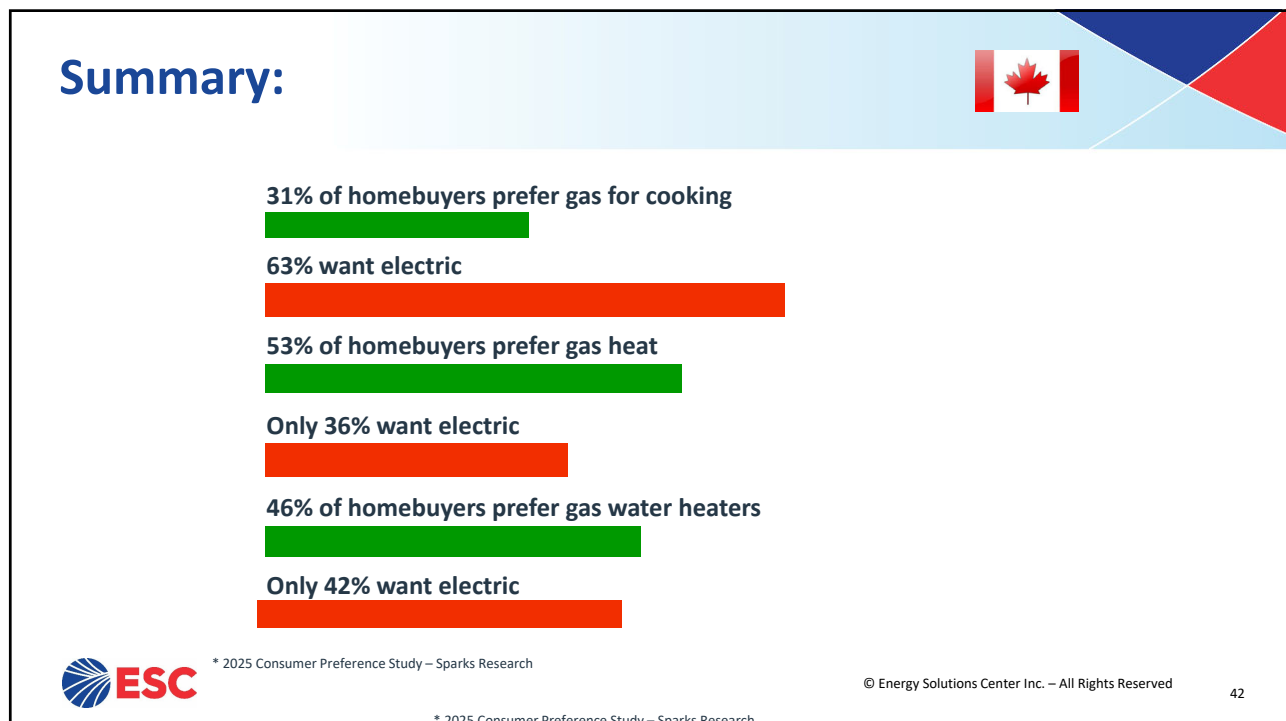
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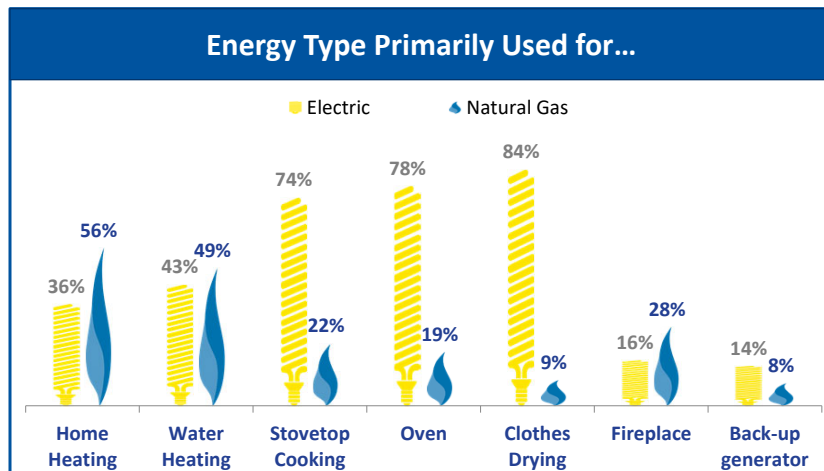


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Home Energy Usage



Natural Gas is the energy type most used for **Home Heating** and **Water heating**.



Which energy type do you primarily use for your...?

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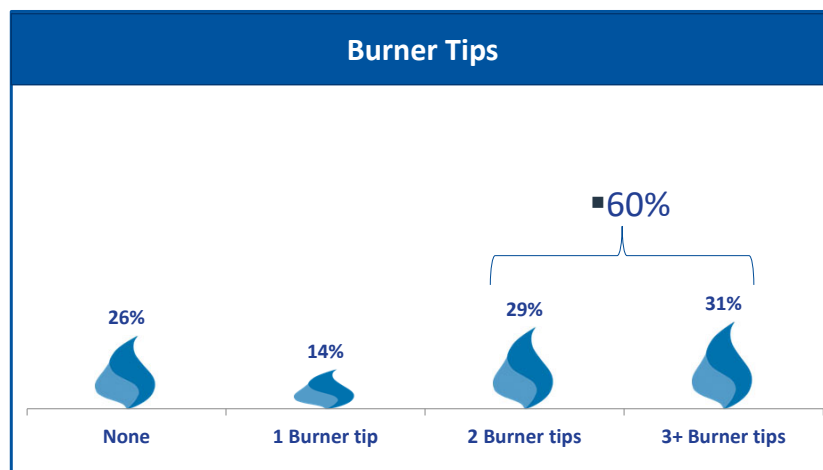
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Home Energy Usage



- One out of four (26%) Canadian respondents do not use Natural gas while **60%** have **two or more burner tips**.



Which energy type do you primarily use for your...?

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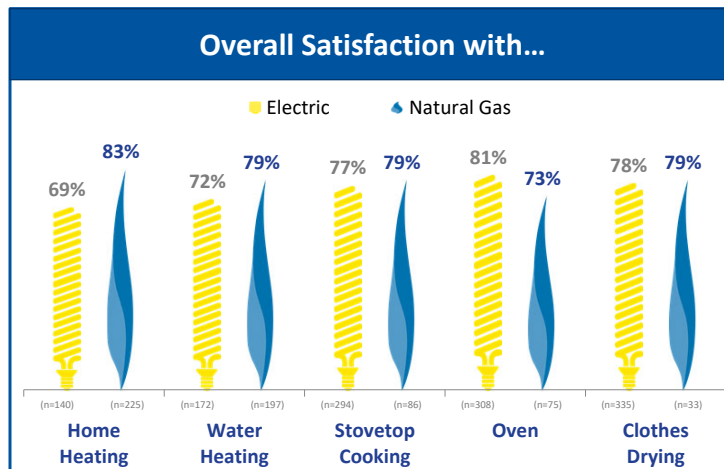
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Overall Satisfaction



Canadian Natural Gas users tend to be more satisfied with their **Home Heating and Water Heating** sources.



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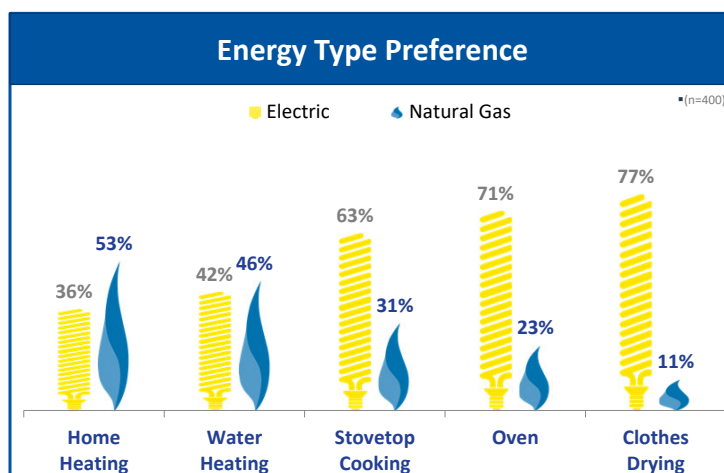
* 2025 Consumer Preference Study – Sparks Research

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Energy Type Preference



Natural Gas is the energy type most preferred for **home heating and water heating**.



Natural Gas preference among those already using Natural Gas is much higher than those not using Natural Gas.

	NG User		NG Non-user	
	Electric	Nat. Gas	Electric	Nat. Gas
Home	23%	68%	73%	9%
Water	29%	58%	78%	13%
Stovetop	57%	36%	79%	17%
Oven	66%	27%	85%	11%
Clothes drying	73%	13%	88%	6%



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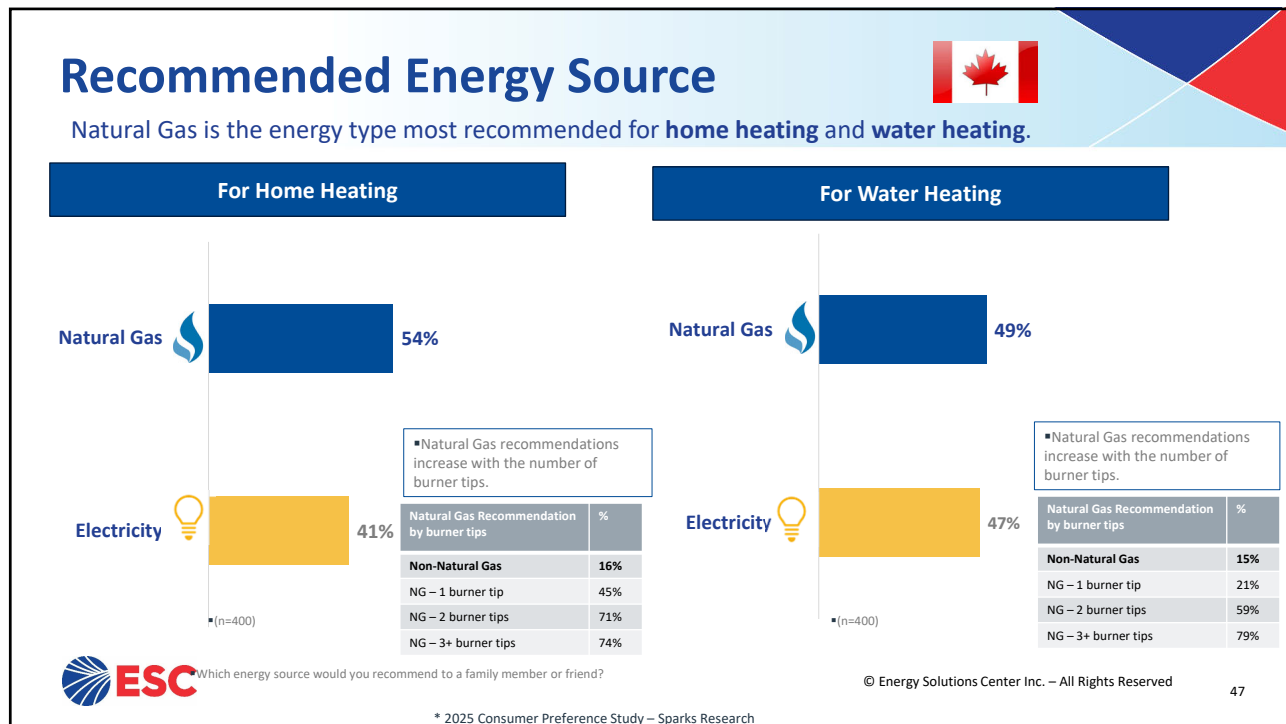
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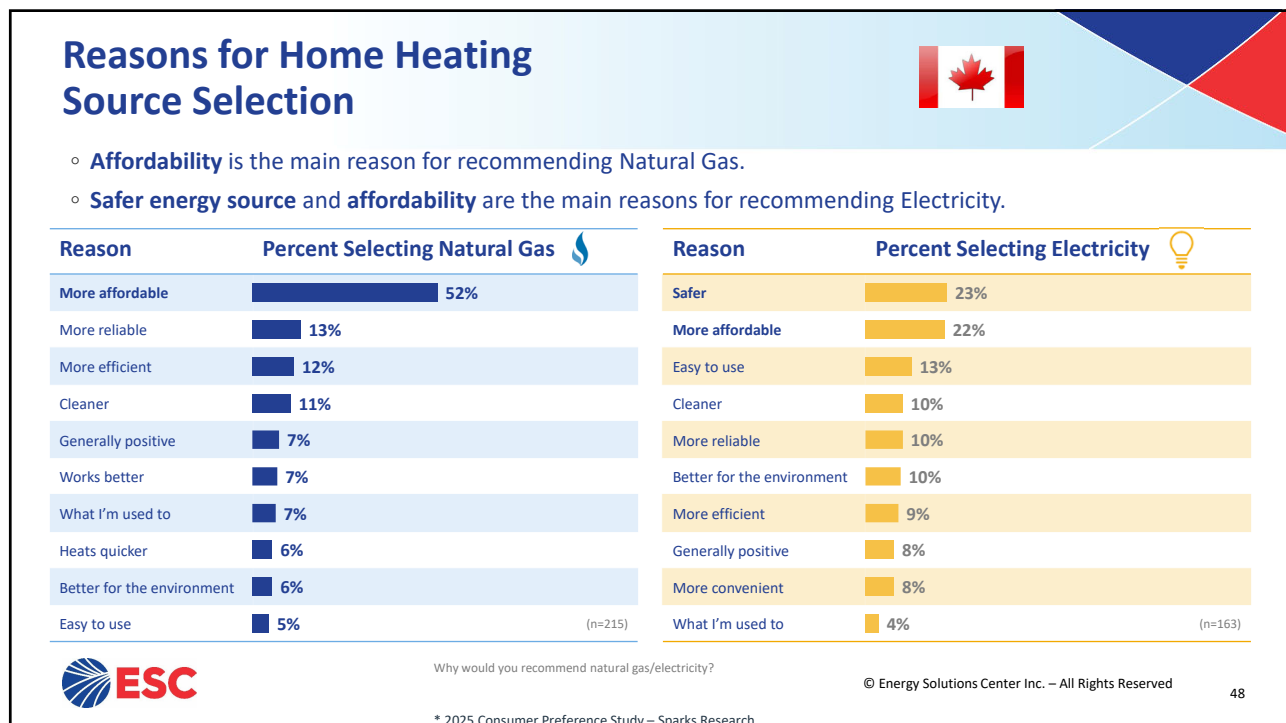
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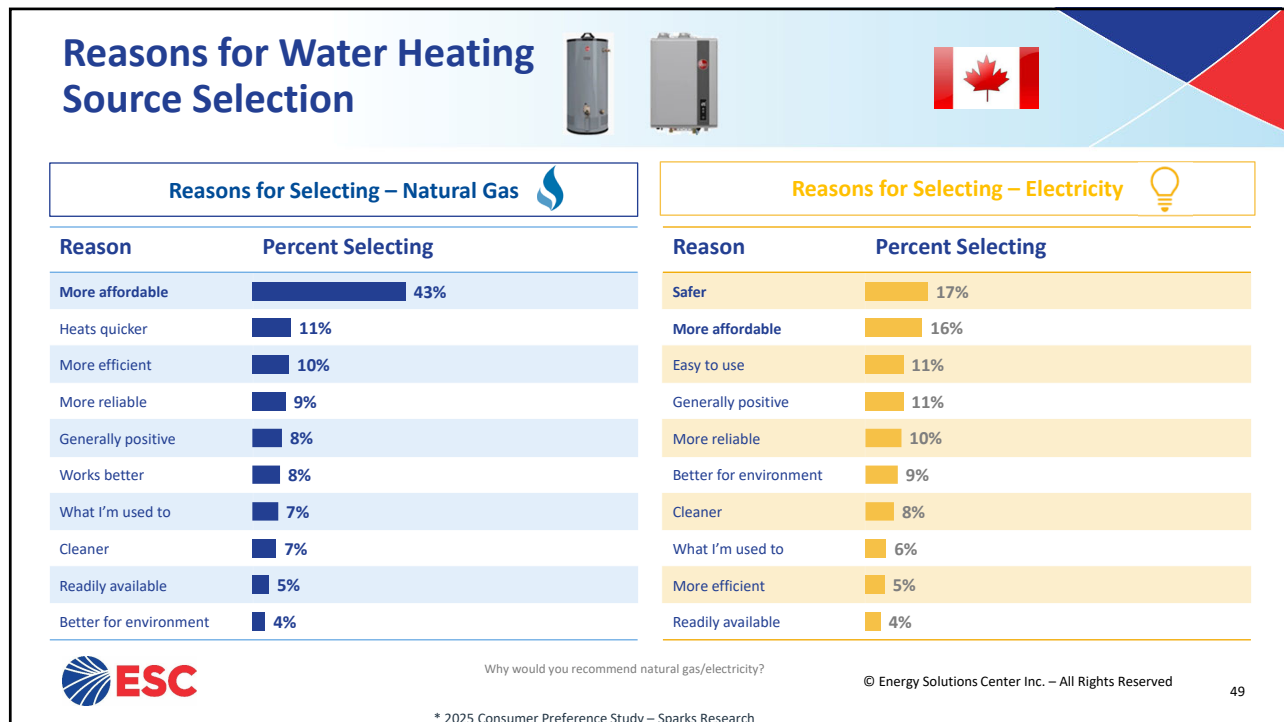
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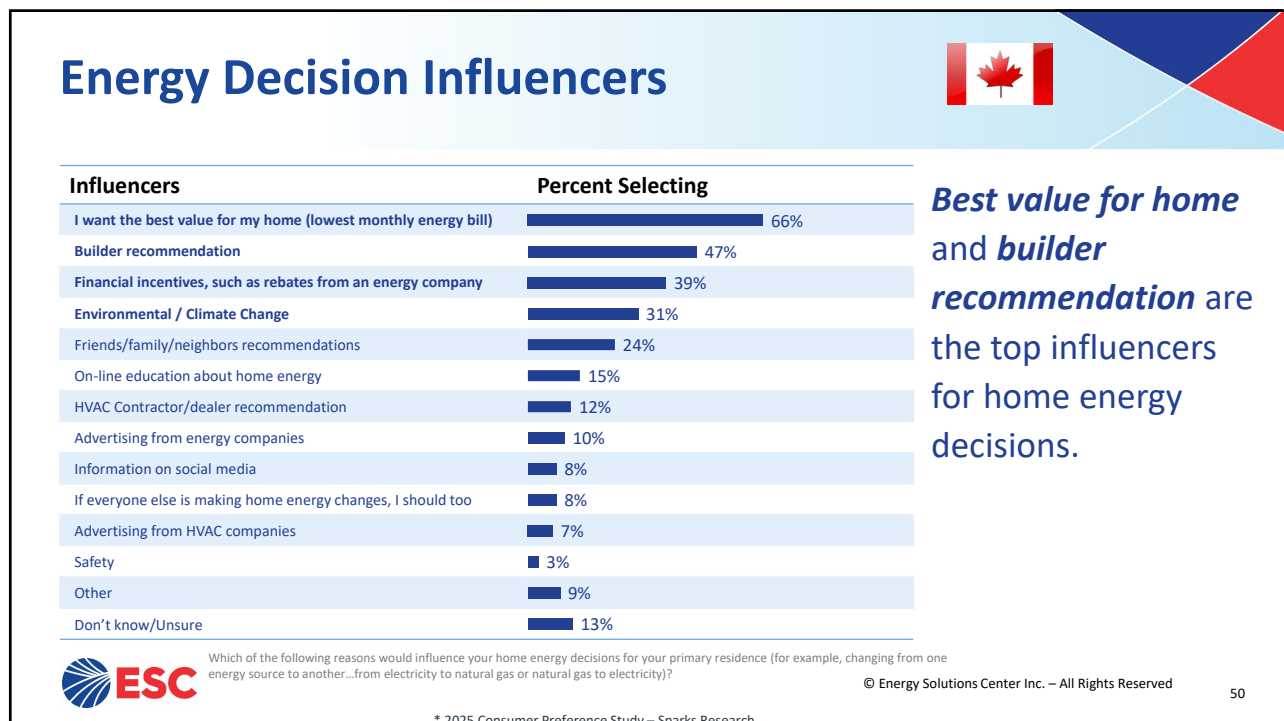
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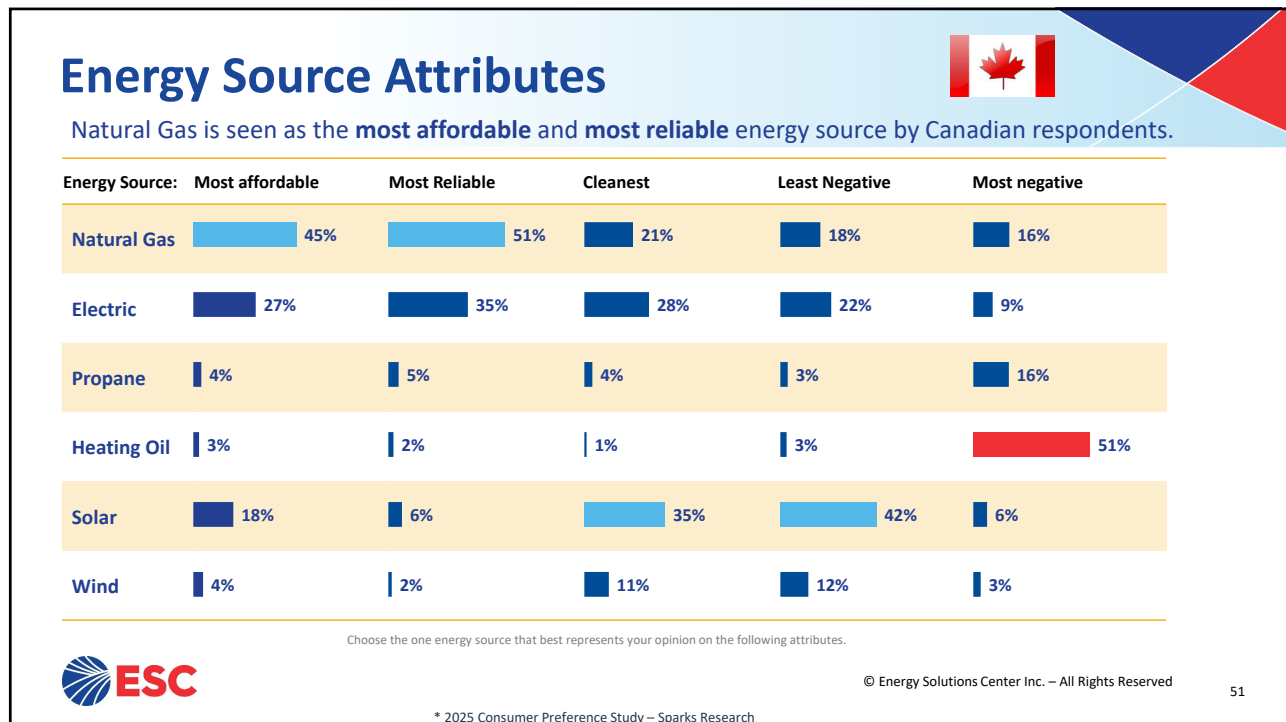
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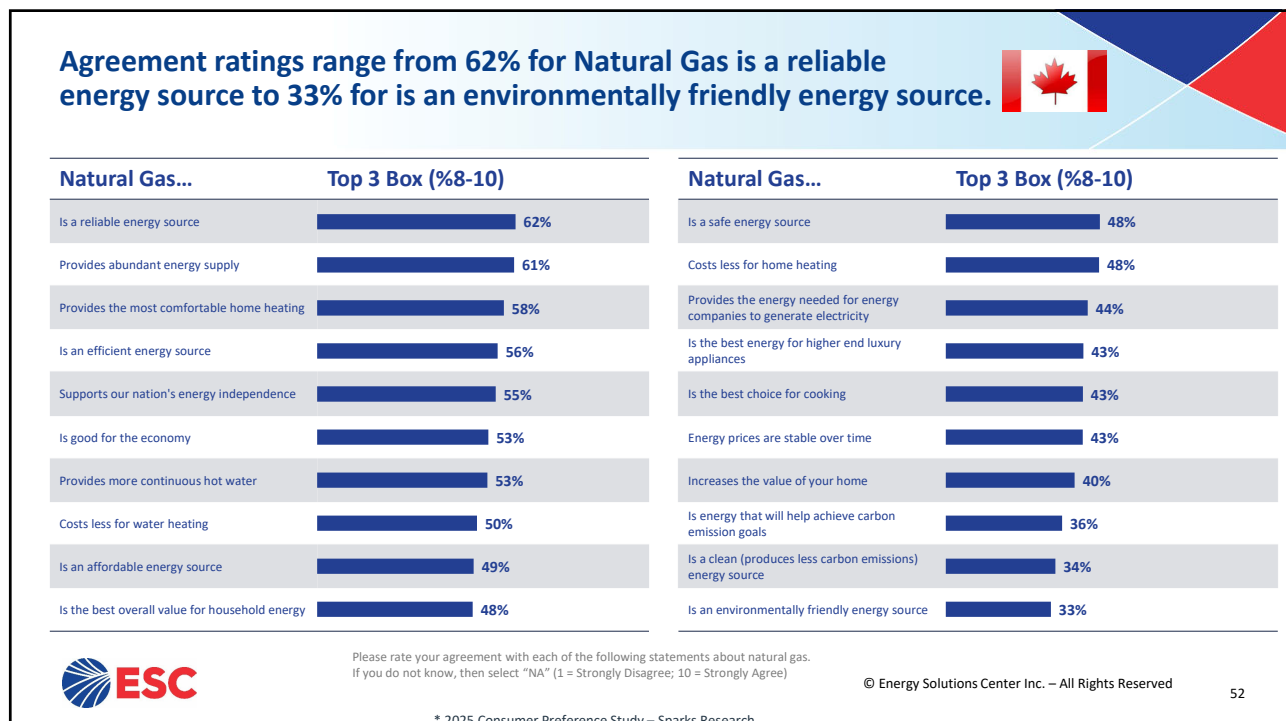
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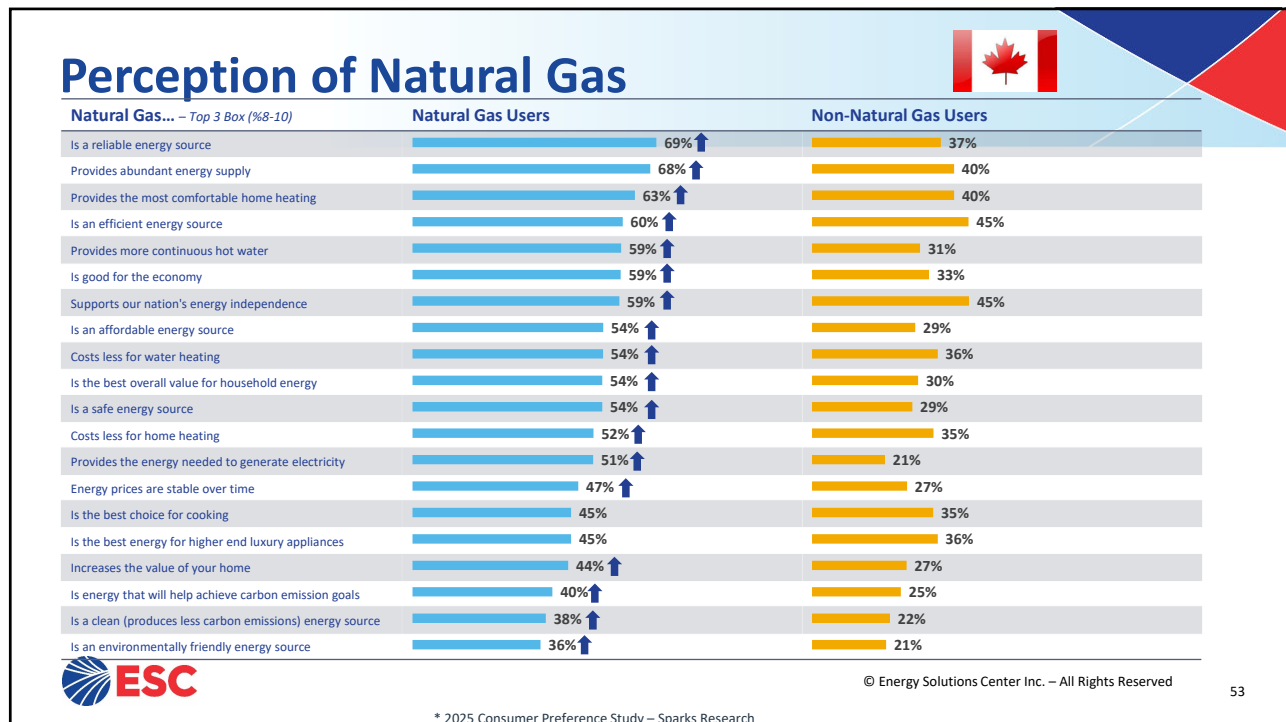
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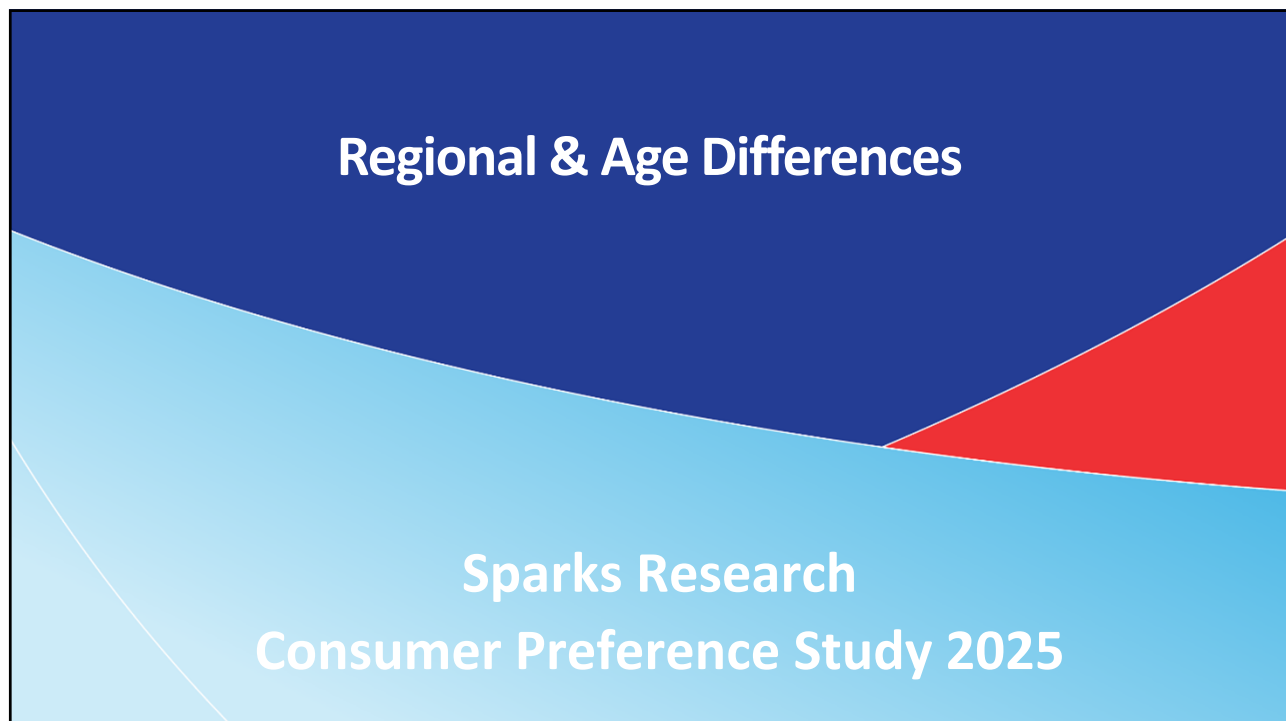
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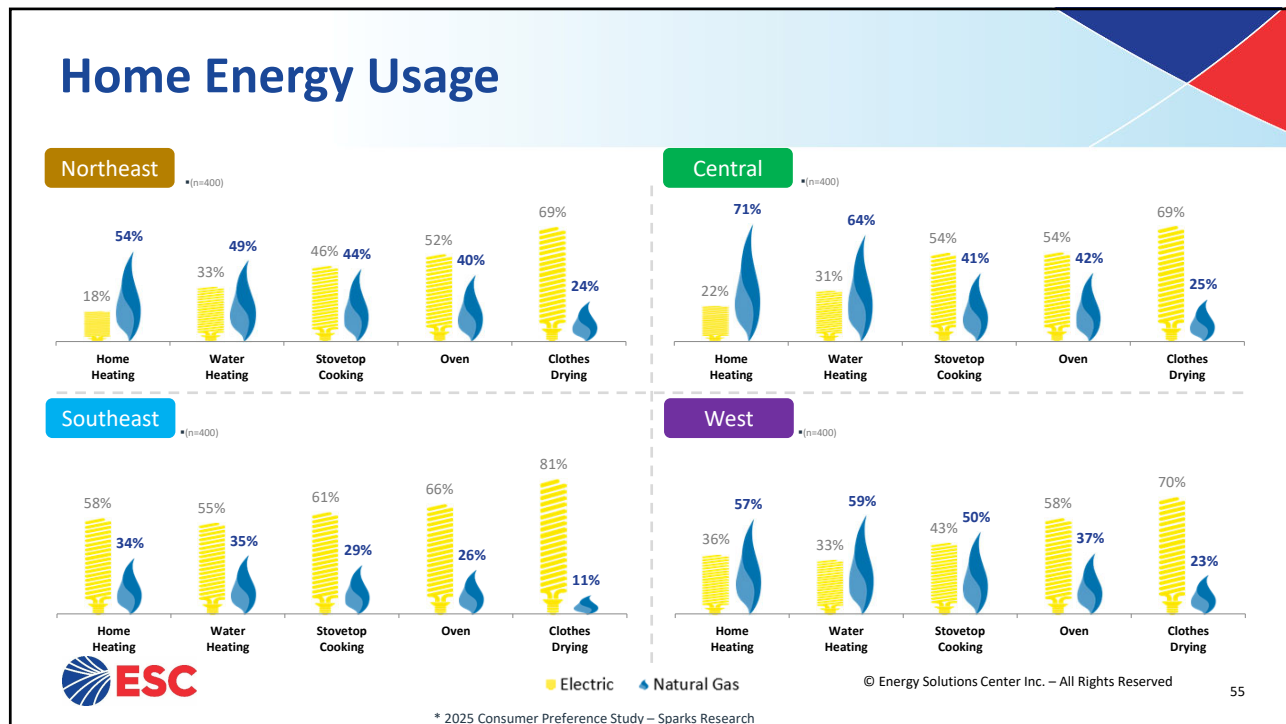
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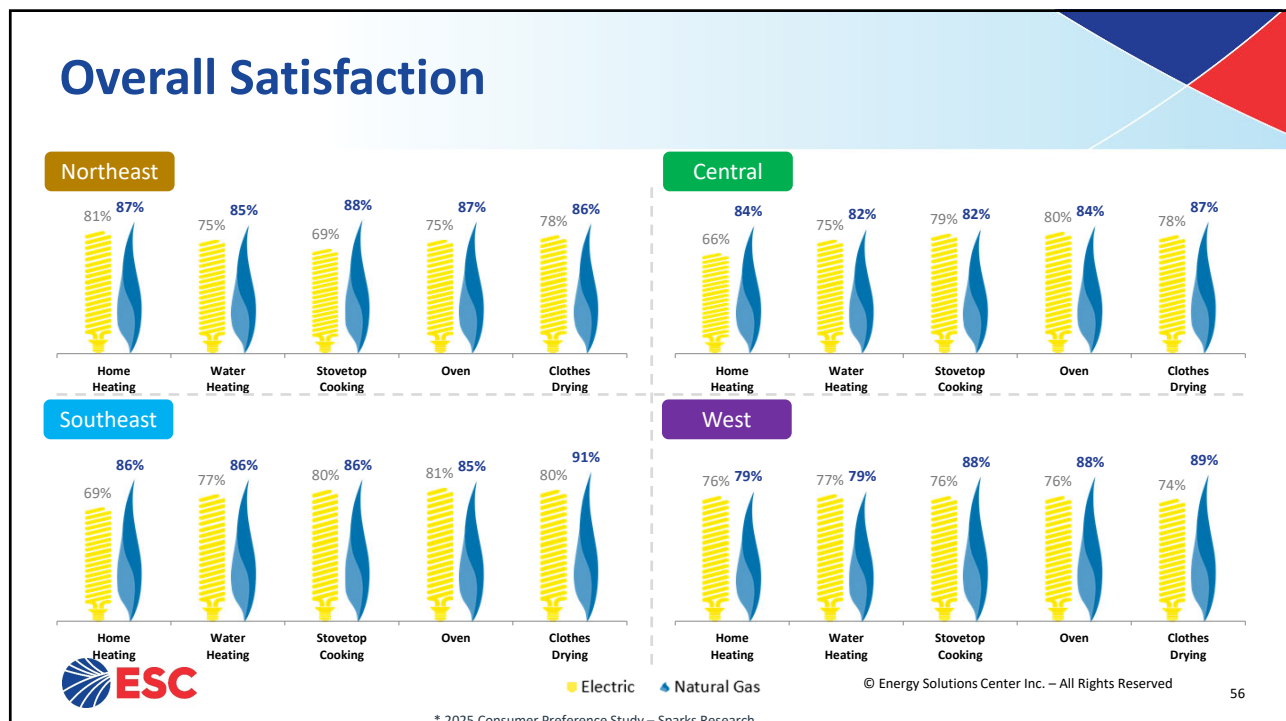
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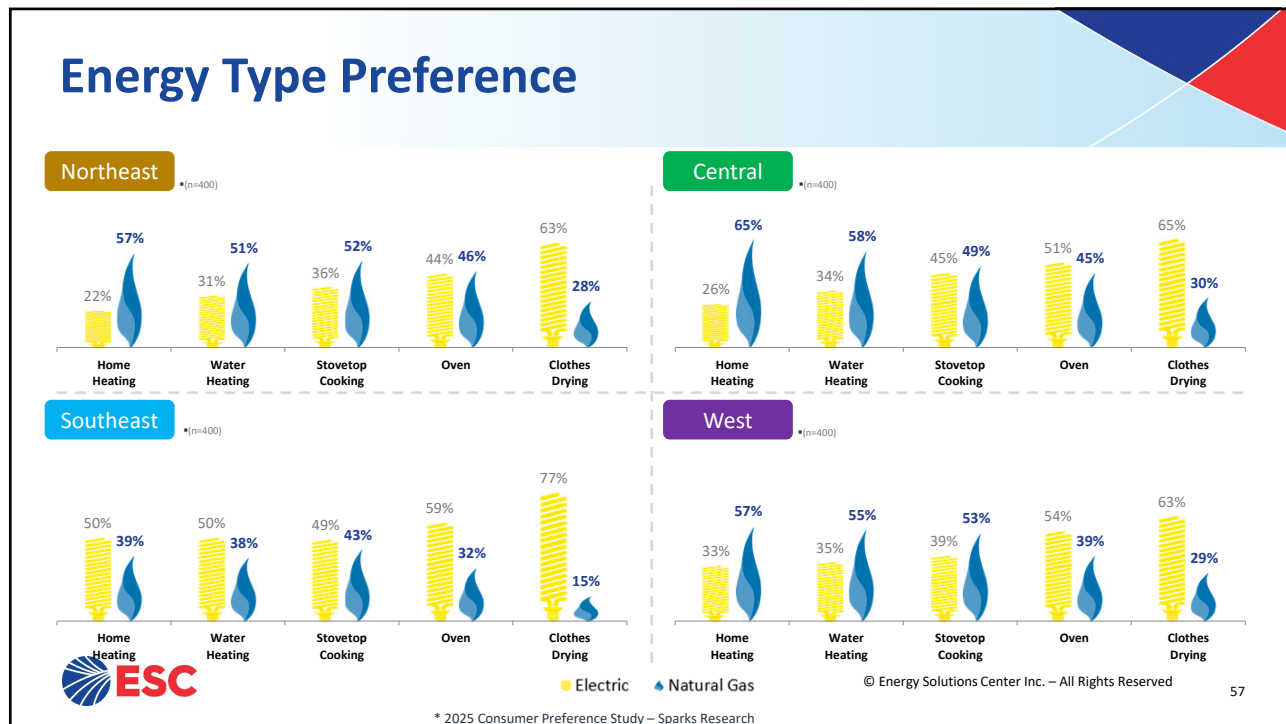
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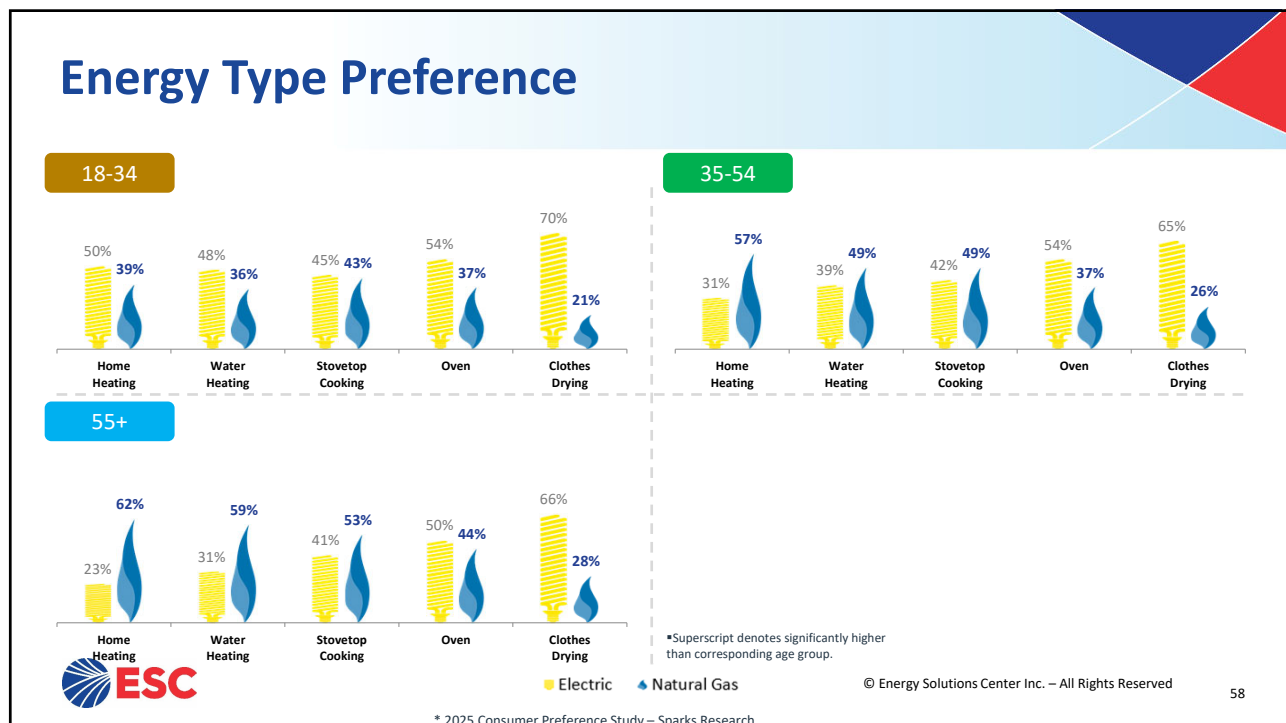
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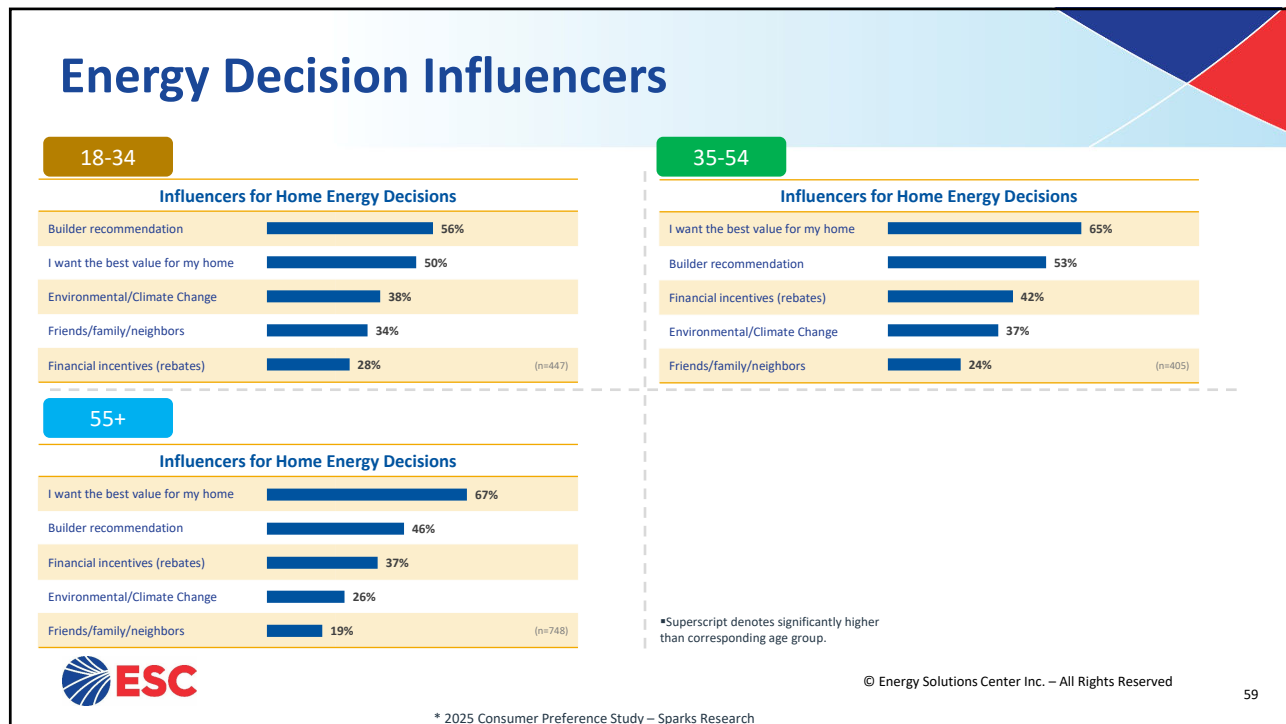
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National Association of Home Builders

- NAHB is a trade association that helps promote the policies that make housing a national priority
- NAHB's various groups analyze policy issues, work toward improving the housing finance system, and analyze and forecast economic and consumer trends



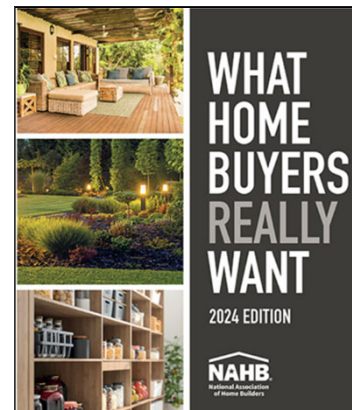
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What Home Buyers Really Want Study

- The NAHB conducts an annual survey of recent and prospective homebuyers
- The purpose of the study is to examine the ever-evolving home buyer preferences
- We will examine some of the highlights of the 2024 study



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Home Buyers Want Better, Not Bigger Homes

- Average home size has been decreasing since 2022
- Square footage has declined from 2,479 in 2022 to 2,411 in 2023
- This is the smallest average size in 13 years
- Buyers are looking for homes around 2,070 sf, down from 2,260 sf 20 years ago



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Builder Reaction to Home Buyer Preferences

- 38% built smaller homes in 2023
- 26% plan to build smaller in 2024
- Plan to address affordability
 - Cutting home prices
 - Providing sales incentives
 - Offering more affordable finishes
- New homes dropped 7% in 2023, average of \$427,000
- Existing home prices increased by 1% over the prior year, averaging \$394,600



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Design Preferences Change Too

- No more “cookie-cutter” designs
- Seeking to personalize their home
- Significant differences from their neighbors
- Sense of uniqueness



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A Consumer Preference for Energy Star Remains

Home Features at the Top of Buyers' Wish List

- | | |
|------------------------------|---------------------------------|
| • Laundry room | • Hardwood floor |
| • Patio | • Front porch |
| • Energy Star windows | • Main floor full bath |
| • Exterior lighting | • Energy Star appliances |
| • Ceiling fan | • Walk-in pantry |
| • Garage storage | • Landscaping |
| | • Table space in kitchen |



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Technology Features

- There has been an increase in the popularity for technology, most notably:
 - Security cameras
 - Wired home security systems
 - Programmable thermostats
 - Video doorbells
 - Multizone HVAC systems
 - Energy management systems



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Features That Have Grown in Popularity

- These features have experienced a strong growth in popularity over the past 10 years:
 - Quartz or engineered stone for kitchen countertops
 - Lighting control systems
 - Outdoor fireplaces
 - Outdoor kitchens
 - Built-in kitchen seating
 - Exposed beams



* What Home Buyers Want – 2024 report

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AGA - Building for Efficiency: Home Appliance Cost and Emissions Comparison - 2024



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AGA

- AGA is an energy trade association that represents more than 200 local energy companies that deliver clean natural gas throughout the U.S.
- Focuses on the advocacy of natural gas issues that are priorities for its membership
- Assists members in managing and responding to customer energy needs, regulatory trends, natural gas markets, capital markets and emerging technologies



400 N. Capitol St
Washington, D.C. 20001

www.aga.org



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Building for Efficiency: Home Appliance Cost and Emissions Comparison

- AGA conducted a study in 2024
- The evaluates energy costs and emissions for typical new single-family homes for different appliances and fuels using a full-fuel-cycle methodology to examine energy use and greenhouse gas emissions.



American Gas Association, 2024 Building for Efficiency Study



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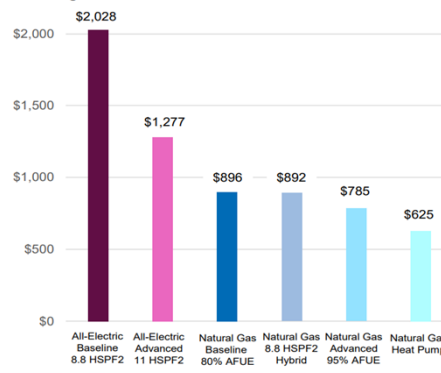
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Lowest Cost and Often Lowest GHG Emissions

Cost Savings: A baseline natural gas new home costs \$1,132 per year less than an equivalent baseline all-electric household.



Cost Comparison of Gas and Equivalent Electric Appliances
Average Annual Cost in Dollars



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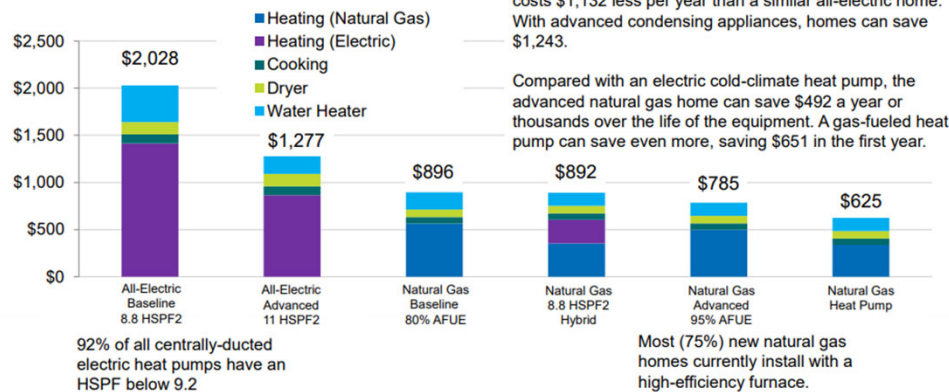
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Annual Energy Costs for Gas or Electric Uses (\$/yr)

Annual Energy Costs for Gas or Electric Uses
Dollars per Year



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Lowest Cost and Often Lowest GHG Emissions



Preference for High Efficiency Gas Products: Over 75% of new homes with natural gas install a 90%+ efficient furnace. In moderate to cold climates, customers prefer gas to electric heat pumps by 5:1.



Greenhouse Gas Reductions: A condensing natural gas furnace installed today in an all-gas home can cut lifetime emissions by 17% compared to the typical all-electric household.



New Solutions: Natural gas heat pumps, hybrid gas-electric systems, and renewable natural gas options can provide cost and emission reductions more cost-effectively



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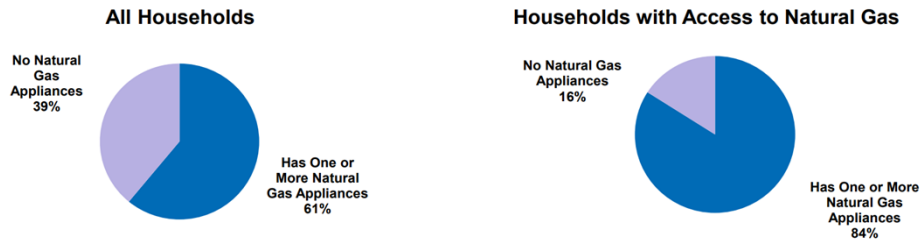
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Preference for Gas



- Wherever gas is available, most homes use it because of the cost benefits
- 84% of homes with access to natural gas use it for one or more appliances
- Most of the growth in high-efficiency heat pumps has occurred where gas is not available



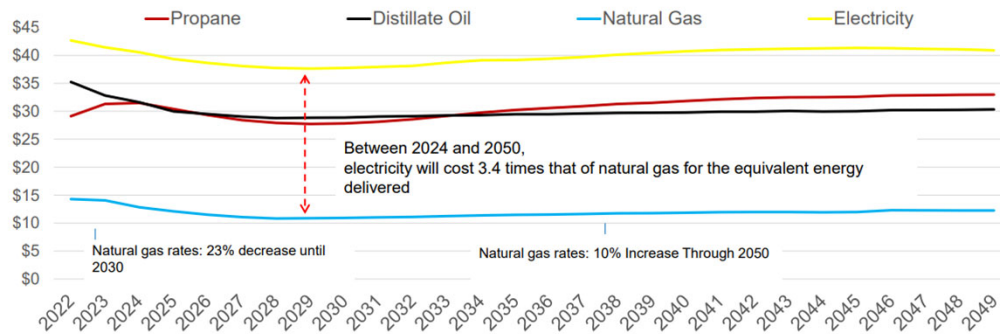
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Natural Gas Retains Price Advantage

Residential Retail Energy Prices
Dollars (2022\$) per MMBtu



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Source: Energy Information Administration, Annual Energy Outlook, October 2023

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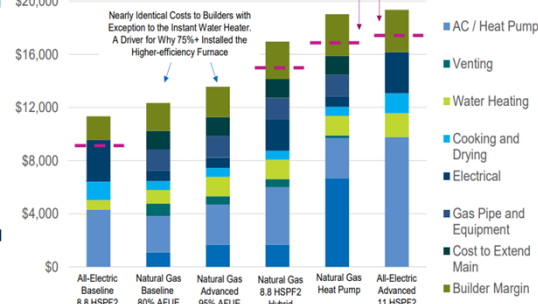
Upfront Cost and Impact on Builders

Upfront Costs and Impact on Builders

- Costs to builders to install non-condensing and condensing gas furnaces are nearly the same, helping explain why most new households install higher-efficiency condensing equipment.
- All-electric options can cost less to build but result in higher operating costs. Based on builder and homeowner preferences, this is only happening in the warmer US climates.
- Cold-climate electric heat pump installation costs are higher than natural gas and may have higher operating costs.
- Gas heat pumps (even in smaller homes) and hybrids can be a more cost-efficient alternative than the advanced all-electric.

New Residential Installation Costs

Dollars (2022\$)



Row houses, mixed-use, and multi-family buildings can affect installation costs, particularly with condensing equipment.

Source: Home Innovation Research Labs - Cost and Other Implications of Electrification Policies on Residential Construction 2021



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NAHB Special Report on Price Differential of Gas versus Electric Home, 2021



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Price of Gas versus Electric Homes

- The survey questionnaire was sent electronically to 3,000 builder members of NAHB
- Received 360 responses or 12%
- This report analyses responses by the four census regions and by the number of for-sale units started by the builder in 2020



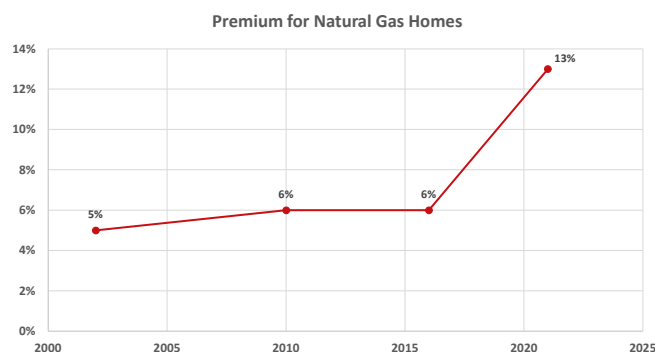
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* NAHB Special Report on Price Differential of Gas versus Electric Home, 2021

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Study Results

- Homes built with natural gas sell for about 13% more than a comparable electric home
- Days on the market were close to the same for both gas and electric homes



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* NAHB Special Report on Price Differential of Gas versus Electric Home, 2021

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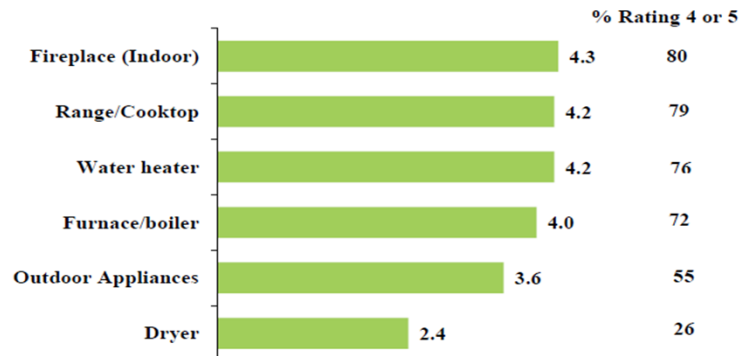
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Buyer Preference for Gas Appliances

**Exhibit 13: Likelihood prospective home buyers request appliances be installed or plumbed for natural gas (1= Not at all likely and 5=Very likely)
(Average Rating)**



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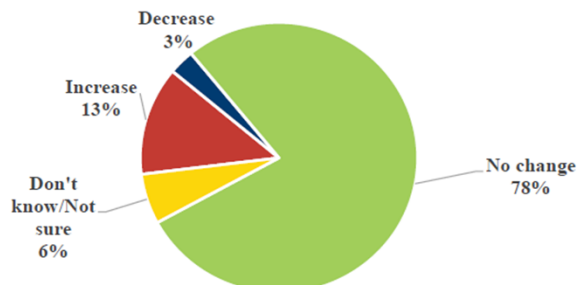
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* NAHB Special Report on Price Differential of Gas versus Electric Home, 2021

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Change in Buyer Preference for Gas in the Past Year

**Exhibit 16: During the past year, have you noticed an increase or decrease in buyers' preference for natural gas?
(Percent of Respondents)**



- Over 75% of builders reported seeing no change
- 13% noticed an increase
- Only 3% reported seeing a decrease



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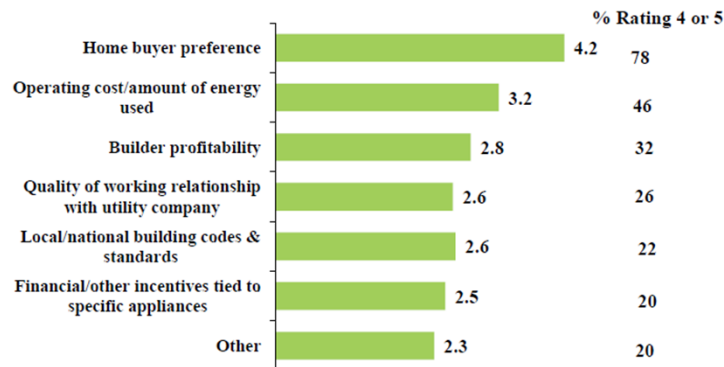
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What Influences Builders?

Exhibit 18: Influence of factors on decision to install electric vs. gas appliances
 1=Not at all influential and 5=Very Influential.
 (Average Rating)



* NAHB Special Report on Price Differential of Gas versus Electric Home, 2021

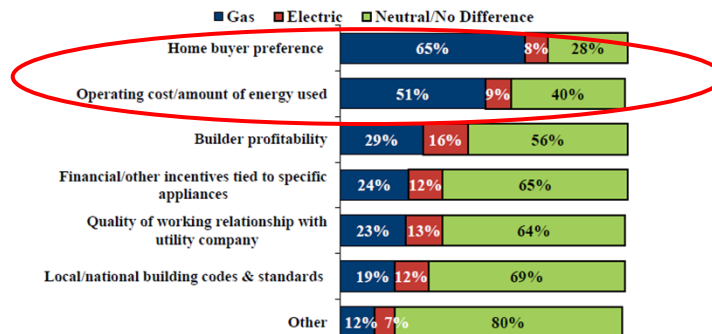
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If Builders Could Choose Based on One Factor

Exhibit 20: If you could choose fuel type based solely on each one of these factors individually, which one would you install?
 (Percent of Respondents)



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What About Green Technologies

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The Importance of Eco-Friendly Housing

- People have concern for the environment
 - 64% of people express concern about sustainability
 - 61% of Americans say that global climate change is affecting their community
 - 27% are willing to invest in products that favor sustainability
- Over 80% of homebuyers consider climate risks when searching for a home
 - The green features Americans want most are solar panels (83%), energy-efficient appliances (74%), and high-efficiency HVAC systems (67%)¹
 - They are willing to spend an additional \$50,000 over budget for an eco-home.



2023 Payless Power survey

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The Importance of Eco-Friendly Housing (cont'd)

- Millennials and Gen Z are focused on sustainability
 - 60% of millennials are willing to pay more for a sustainable housing
 - Green living is an integral part of life for millennials and Gen Z
 - Nearly half (48%) of Americans aged 18 – 29 believe the US should rely exclusively on renewables
 - The remainder believe in a mix of energy sources
 - Gen Z are more likely to rent, and they seek energy efficient rentals
- Upgrades like LED lighting, efficient appliances, shorter showers, and fixing leaks save the average homeowner \$320 on energy bills



2023 Payless Power survey

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The Importance of Eco-Friendly Housing (cont'd)

- Homes listed as “eco-friendly” sell 9 days faster, on average
- Energy Star homes sell even faster
- This growing trend is supported by the National Association of Realtors (NAR)
- Eco-friendly can save money now and can result in a higher resale price in the future



2023 Payless Power survey

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Today's Buyer

- First time buyers decreased to 24% of market share
 - This is the lowest figure since this data started to be collected back in 1981
- First time buyer age increased to 38
- Typical repeat buyer age increased to 61
- 62% of buyers were married couples
- 20% of buyers were single females
- 8% of buyers were single males
- 6% were unmarried couples



Source: National Association of Realtors – Profile of Home Buyers 2024 © Energy Solutions Center Inc. – All Rights Reserved

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Today's Buyer

- 73% if buyers did not have a child under 18 in their home
- 17% of home buyers purchased a multi-generational home
 - 36% for cost savings
 - 25% to care for aging parents
 - 21% due to children over 18 or other relatives moving back home
 - 20% due to children over the age of 18 who never left home



Source: National Association of Realtors – Profile of Home Buyers 2024

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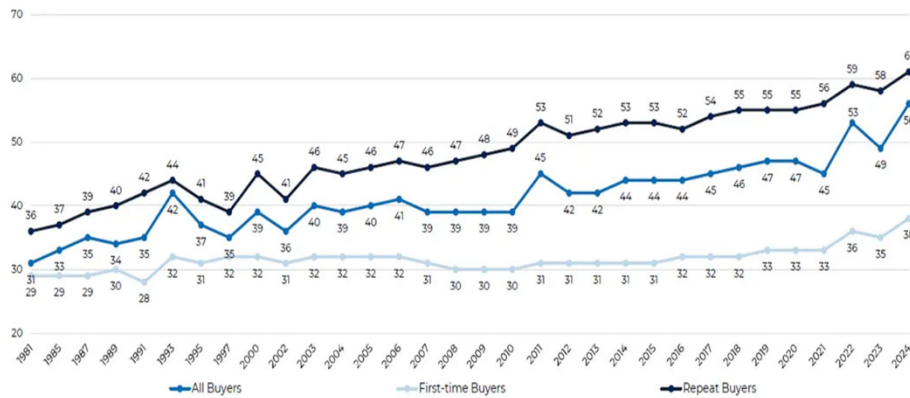
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Median Age of Homebuyers 1981 - 2024



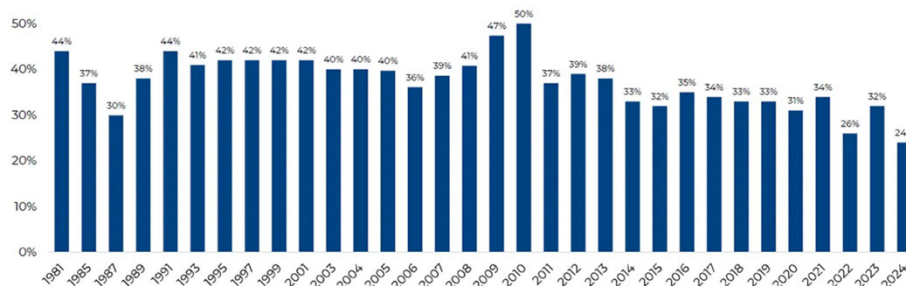
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Source: National Association of Realtors – Profile of Home Buyers 2024

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First-time Homebuyers 1981 - 2024



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Source: National Association of Realtors – Profile of Home Buyers 2024

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Summary

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Summary

- Home buying is both a Rational and Emotional exercise
- In Customer Preference Surveys it was obvious that consumers understand the Rational benefits of gas over electric
- Preferences are different by age group
- Experience with energy sources greatly influences the purchase decision



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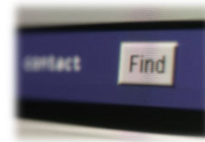
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Summary

- Utilities need to communicate using different medias to reach the different customer bases
- Messages need to be different to make an impact
 - Not everything Green is perceived as green
 - The internet is where customers find information
 - You can't change peoples experiences with past appliances



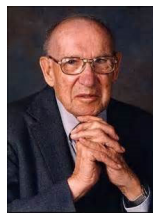
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Conclusion

“Customer research may be more important than market research – but far more difficult.”



Peter Drucker

the founder of modern management



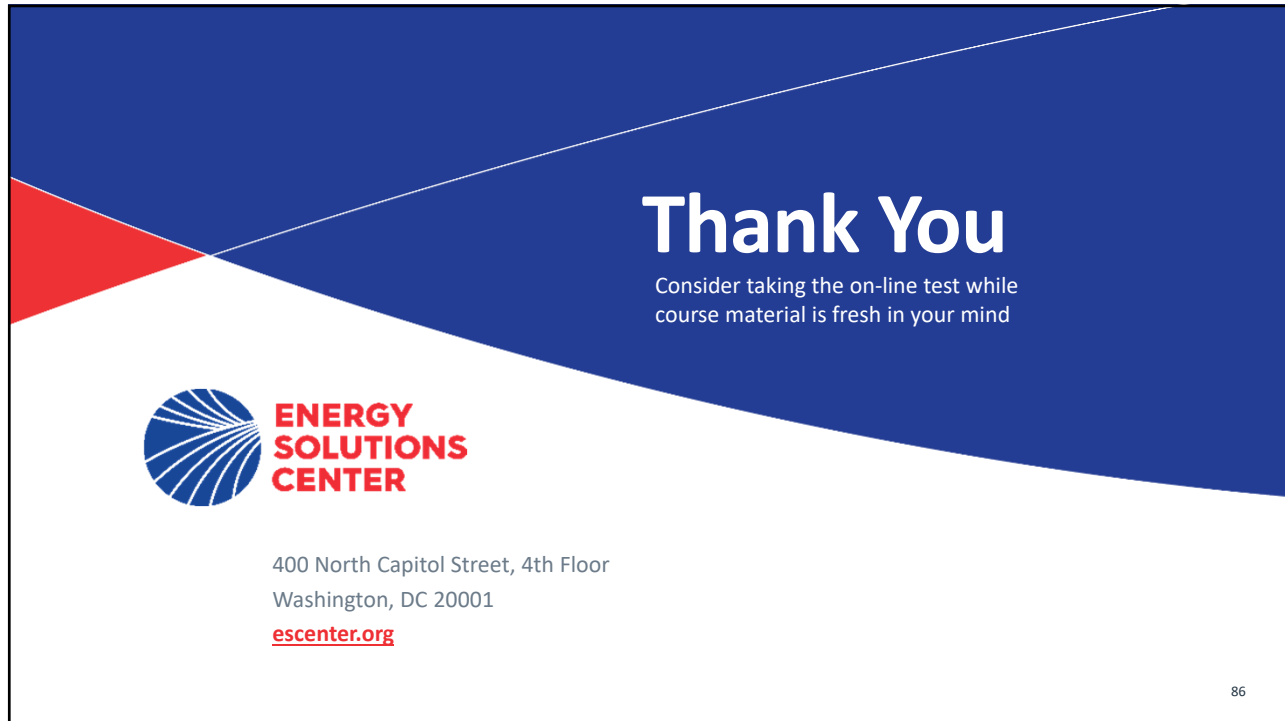
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