Natural Gas and the 2020-21 Winter Heating Season

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Committed to utilizing America’s abundant, domestic, affordable and clean natural gas to help meet the nation’s energy and environmental needs.
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Despite disruptions to global energy markets and hurricanes in the Gulf Coast, the natural gas market in terms of flowing gas supplies remains relatively stable.
Market stability is evident with natural gas demand as well. Total demand including exports is down 0.4% from 2019.

US Total Natural Gas Demand, Year-to-Date (Including Mexico/LNG exports)
Bcf per day

Source: S&P Global Platts Bentek Data
Natural Gas Year-to-Date Demand

Year-to-Date Demand Averages, 2019 v 2020
Bcf per day

Power Generation:
- 2019: 31.6
- 2020: 32.7

Industrial:
- 2019: 22.6
- 2020: 21.9

ResComm:
- 2019: 24.5
- 2020: 22.3

Exports to Mexico + LNG Feedgas:
- 2019: 10.4
- 2020: 11.9

Source: S&P Global Platts Bentek Data
Storage inventories will begin the winter season above the five-year average in every region.

Working Gas in Underground Storage Lower-48 States (billion cubic feet)

Source: Energy Information Administration. Forecast: October 2020 Short-Term Energy Outlook
Natural gas prices have remained low compared with history

Source: Energy Information Administration
Natural gas prices are low and stable when examining a longer history of prices.
Expectations for 2020-2021 Winter Weather

NOAA Forecast
November-January

NOAA Forecast
January-March

Source: National Weather Service Climate Prediction Center
Temperatures are the key variable that will drive consumption

- NOAA’s forecast is expected to be below normal in terms of total heating degree days.
- Estimated usage for 2021 based on an AGA survey of its members suggests an increase in throughput of 4-5 percent.

National Heating Degree Data from Past Winters

[Bar chart showing heating degree days for 2017 to 2021 with Actual Winter HDD and Normal HDD compared to NOAA estimate.]

Total Residential Natural Gas Consumption During Winter Heating Season (MMcf)

[Bar chart showing total residential natural gas consumption for 2017 to 2021 with thousands of MMcf for each year.]
Survey of AGA Members

• Question:
  • Do you expect normalized residential heating bills to go up this winter compared to last?

• Response:
  • 58 percent said yes, 42 percent said no.

• Question:
  • By what percent will bills and throughput change compared to last winter?

• Response:
  • 5 percent *increase* in bills and 4 percent *increase* in throughput. Averages weighted by number of customers.
## EIA’s Current Winter Heating Outlook (Residential)

### Natural Gas Winter Heating Season

<table>
<thead>
<tr>
<th></th>
<th>16-'17</th>
<th>17-'18</th>
<th>18-'19</th>
<th>19-'20</th>
<th>20-'21</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Consumption (Mcf)</strong></td>
<td>52.9</td>
<td>57.6</td>
<td>60.2</td>
<td>55.5</td>
<td>59.9</td>
</tr>
<tr>
<td><strong>Price ($/Mcf)</strong></td>
<td>$10.06</td>
<td>$9.82</td>
<td>$9.72</td>
<td>$9.73</td>
<td>$9.55</td>
</tr>
<tr>
<td><strong>Expenditures ($)</strong></td>
<td>$533</td>
<td>$565</td>
<td>$586</td>
<td>$540</td>
<td>$572</td>
</tr>
</tbody>
</table>

### Electric Winter Heating Season

<table>
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<tr>
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<th>16-'17</th>
<th>17-'18</th>
<th>18-'19</th>
<th>19-'20</th>
<th>20-'21</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Consumption (kWh)</strong></td>
<td>8,424</td>
<td>9,049</td>
<td>9,256</td>
<td>8,764</td>
<td>9,431</td>
</tr>
<tr>
<td><strong>Price ($/kWh)</strong></td>
<td>$0.125</td>
<td>$0.126</td>
<td>$0.127</td>
<td>$0.129</td>
<td>$0.128</td>
</tr>
<tr>
<td><strong>Expenditures ($)</strong></td>
<td>$1,055</td>
<td>$1,142</td>
<td>$1,174</td>
<td>$1,128</td>
<td>$1,209</td>
</tr>
</tbody>
</table>

| Heating Degree Days (Oct - Mar Only) | 3255 | 3610 | 3788 | 3433 | 3611 |

Sources: Energy Information Administration, Winter Fuels Outlook 10/9/2020
Findings show, homes heating with natural gas this winter could save between 46% and 71% compared to an electrical alternative. These findings are consistent with EIA’s own winter fuels forecast.
When space heating matters most...

Households heating with gas could see a **January heating bill of just $111 vs. $277** with an Energy Star air sourced 8.8 HSPF heat pump. For many heat pump customers, January contributes to almost 1/3 of the entire winter heating season bill.

Source: AGA Based on 2018 Winter Heating Data
The average gas household could have a **carbon footprint that is 19% lower** this winter compared to an Energy Star rated heat pump; **50% lower emissions** compared to an electrical resistance furnace.

### Estimated Winter Heating Emissions by Furnace Type

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<tr>
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</thead>
<tbody>
<tr>
<td>Northeast</td>
<td>3.3</td>
<td>2.9</td>
<td>3.3</td>
<td>5.2</td>
</tr>
<tr>
<td>Midwest</td>
<td>3.4</td>
<td>3.0</td>
<td>5.1</td>
<td>7.8</td>
</tr>
<tr>
<td>South</td>
<td>2.1</td>
<td>1.9</td>
<td>2.5</td>
<td>4.6</td>
</tr>
<tr>
<td>West</td>
<td>1.4</td>
<td>1.2</td>
<td>1.2</td>
<td>2.4</td>
</tr>
<tr>
<td>National</td>
<td>2.5</td>
<td>2.3</td>
<td>3.1</td>
<td>5.1</td>
</tr>
</tbody>
</table>

**Average Percent Savings with Gas**

- 19%
- 50%

Source: AGA model based on 2018 winter heating data; Emission factors based on 2018 EPA eGrid NERC regional data
AGA Outlook for Winter Bills

- On average, residential natural gas bills will be around 4 to 6 percent higher than the previous winter based on AGA survey of members and EIA’s current winter heating outlook.

**Characteristics of 2021 Heating Season:**

- **Weather:** Warmer than normal winter based on NWS 2020-2021 winter forecast (3,611 HDD vs 3,816 normal HDD) but colder than last winter (3,433 HDD)
- **Consumption:** Average use per customer is expected to increase slightly compared to the 2019-2020 winter heating season
- **Price:** Relative to past years, price of natural gas remains historically very low
- **Supply:** Abundant storage and production available to meet supply and peak demand concerns

Natural gas will continue to be the lowest-cost energy option for home heating.

Sources: National Oceanic and Atmospheric Administration, Energy Information Administration
How much of the final bill accounts for the cost of gas?

- Cost to Purchase Natural Gas, 29.0%
- Storage & Transportation, 9.1%
- Distribution, 8.3%
- Administrative & General, 11.4%
- Depreciation & Amortization, 12.5%
- Cust. Accounts & Services, 6.1%
- Local, State & Federal Taxes, 12.1%
- Net Interest, 5.6%
- Net Income, 5.9%

Source: AGA Gas Facts, 2016 Data
One in three U.S. households faces a challenge in meeting energy needs

Households that experienced energy insecure situations, 2015
percent of households
- reported any household energy insecurity
- reduced or forwent basic necessities to pay energy bill
- received disconnection notice
- kept home at unhealthy or unsafe temperature

Source: U.S. Energy Information Administration, Residential Energy Consumption Survey 2015
Energy Assistance Programs

Natural gas utilities offer and participate in several energy assistance programs to help customers in need.

- **LIHEAP, State, and Local Funds** – Energy cost assistance for low income households.

- **Budget Billing** – Customers spread cost equally across 12 months, effectively prepaying a portion of heating season bills during the cooling season.

- **Weatherization Assistance** – Provides qualifying customers with weatherization assistance to ensure household is winter ready.

- **Payment plans** – Customers may spread high bills over several months.

- **Voluntary Non-terminations** – Certain utilities do not terminate customers during the heating season.
Natural gas utilities spent $365.34 million on low-income efficiency programs in 2018.

2018 Efficiency Programs by Customer Segment
105 Utility Participants

- Residential: 97
- Low Income: 78
- Multi-Family: 49
- Commercial: 91
- Separate Industrial: 15

2018 Natural Gas Efficiency Program Expenditures in North America by Sector

- Residential: 42%
- Industrial: 4%
- Multi-Family: 21%
- Other: 6%
- Commercial: 25%
- Low-Income: 2%
AGA Member Winter Heating Season Survey

Source of Peak Day Gas Supplies 2018-19
68 LDCs total, different sources can be counted more than once

Pipeline Storage
Citygate for Transp...
Firm Transportation
Citygate Purchases
LNG Propane-Air
On-system Underground...
Local Production
Other
Interruptible Transportation

Number of respondents

0 10 20 30 40 50 60
Number of Companies Using Gas Pricing Mechanisms for Underground Storage
LDC 2018 Storage Refill Season, (69 LDCs)

- First-of-the-Month
- Daily (Spot or Index Price)
- Fixed
- NYMEX
- Other
- Average Last 3 Days
- Weekly