Natural Gas:
Fueling us into the future
FEATURE

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Renewable natural gas offers a sustainable, clean energy source.

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n cities and towns across the country, zoning boards and local governments are passing resolutions, ordinances and building codes that require all newly built homes and businesses to use only electric appliances, effectively preventing consumers from choosing other energy solutions. In many instances, these cities and towns are moving toward electrifying everything without conducting a comprehensive cost-benefit analysis or engaging in a transparent stakeholder engagement process.

These actions are part of a movement toward forced residential electrification, which seeks to achieve ambitious greenhouse gas emission reductions by generating electricity only from renewable resources and then converting all household energy use to electricity.

“Right now, these efforts are focused on new buildings, but it’s just a steppingstone in the process,” said Rick Murphy, managing director, energy markets, American Gas Association. “The next step could be a requirement that when consumers look to replace their existing natural gas equipment in their homes, they will only have electric equipment options. The opportunity for consumers to make an informed decision is in jeopardy.”

Not only will electrification eliminate consumer choice, but it’s likely to be costly, according to an AGA study conducted by ICF Inc. (continued on page 04)
The report looked at the cost to consumers and the infrastructure development needed for the electric grid to handle the incremental load associated with converting all fossil fuel residential applications to electricity.

The report estimated that electrifying the U.S. residential sector would require the power generation system to nearly double by 2035 and would increase annual energy costs between $1,060 and $1,420 per household.

While electrification would increase energy costs for most households, Murphy said it also would have only minimal environmental impact.

“Residential natural gas consumption accounts for 4% of overall greenhouse gas emissions in this country,” he said. “Yet the organizations advancing electrification are very focused on the residential market even when the greenhouse gas emissions reduction potential is small.”

**NATURAL GAS SOLUTIONS**

Two recent studies by the American Gas Foundation highlight ways emissions reductions can be achieved through natural gas solutions at a lower consumer cost than electrification. The studies indicate that natural gas can be an important part of a clean energy mix through a combination of expanded energy efficiency programs, advancing new, highly efficient natural gas appliances and renewable sources of supply.

AGA surveys consistently indicate that consumers overwhelmingly prefer natural gas in their homes, Murphy said.

“On average, there’s a new natural gas customer connected every minute of the day, so overwhelmingly, consumers are choosing natural gas options within their homes;” he said. “Consumers want and are demanding natural gas, particularly when building new homes, and yet we’re seeing policies advance that would not allow new homes to be built with natural gas in them.”

Because much of the effort to advance electrification is happening through resolutions, ordinances and building codes at the local level, most consumers don’t know much about the electrification effort.

“At the end of the day, it’s the consumer that’s going to bear the brunt of this, and the consumer is not well represented in these pro-electrification debates,” Murphy said. “At some point, their heating system is going to need to be replaced, and they’re going to find that an option they previously had for addressing their home comfort and energy affordability needs is no longer available because their local politicians or the local code officials were influenced by organizations that are pushing electrification as the only way to reduce greenhouse gas emissions.”

He said that consumers concerned about the implications of electrification need to stay informed about local government efforts and attend public forums and meetings to advocate for policies that maintain their ability to choose the energy source that works best for them.

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**2017 U.S. Carbon Dioxide Emissions, By Source**

- **Transportation**: 34%
- **Electricity**: 33%
- **Industry**: 15%
- **Residential & Commercial**: 10%
- **Other (Non-Fossil Fuel Combustion)**: 7%

Remaining GHG from all other sectors equals 96%
A
s fall ushers in chilly days and winter welcomes cold nights, the need to heat homes quickly and cost-effectively brings into focus the benefits of natural gas-heating options compared to other fuels.

Natural gas heating systems come in many sizes, types, configurations and efficiency ratings, and can heat a home by creating warm air, hot water or steam. The most common type of system in the United States is a “forced-air” central heating system that uses a natural gas burner to heat air. Then, the air is circulated through ductwork in the home by a blower or fan.

FUELS, FACTS AND FIGURES
Across the country, more than 179 million Americans use natural gas in their homes. About half the country uses natural gas for heating, while around 34% use electricity and another 6% use propane, according to HouseLogic.com, a site for homeowners who want smart solutions to enjoy, improve and maintain their home.

Although actual savings depends on an area’s fuel costs and the efficiency of a gas heater, studies show that gas heating is typically less expensive than electric heat in most parts of the country. Households

Unmatched reliability
Natural gas makes space heating easy and affordable.

By Georgeann H. Ikuma
that use natural gas appliances for heating, water heating, cooking and clothes drying spend an average of $880 less per year than homes using electric appliances, according to the American Gas Association.

CONSISTENT, CLEAN AND COMFORTABLE

Using natural gas to heat a home or business offers reliability unmatched by other fuel sources. Natural gas supply pipelines are installed underground, protecting them from the weather and accidents above ground that lead to electrical outages. This reliable heating fuel can keep a family safe in the event of severe weather.

Natural gas also offers a healthier option for a household; there are no emissions of sulfur dioxide or particulate matter and far lower levels of greenhouse gases when burned.

Across the country, more than 179 million Americans use natural gas in their homes. About half the country uses natural gas for heating, while around 34% use electricity and another 6% use propane.

— Houselogic.com

CONVERTING TO COMFORT: SWITCHING TO NATURAL GAS IS AS EASY AS 123.

Ready to convert your home’s heating system to clean and comfortable natural gas? The first step with any conversion is to contact your local natural gas utility. It will ensure that natural gas is available and assist you with the process.

Regardless of which fuel you convert from, there are two stages to the connection process for natural gas: outside the house and inside. The utility company will run an underground pipe from the gas main in the street to the home, where it will install a meter. Your heating, ventilation and air conditioning contractor will handle the second part of the job, piping the gas from the meter to the home’s heating equipment. When you are ready to switch to natural gas, the steps to convert can be quite simple.

ELECTRIC TO GAS

The two most common types of fuel used for home heating are electricity and natural gas. For many people, however, gas is the go-to fuel for home heating. With gas to electric conversion, new heating equipment will need to be purchased. If a home is currently using an electric furnace or heat pump, the existing ductwork can most likely be used with a new gas heating system. This will save both time and money on the installation of a gas furnace.

If a home is currently utilizing an electric boiler with radiators, the radiators can most likely be used, but a new gas boiler will need to be purchased. According to Husky Heating and Air Conditioning, a natural gas boiler can be connected to an existing radiator system; that will help save money. Depending on efficiencies, natural gas can save from one-third to one-half in annual operating costs over electric.

OIL TO GAS

There is an additional step with oil to gas conversion; the existing oil tank will need to be removed or rendered useless. If the existing oil heating equipment is fairly new, it may be able to be converted to natural gas. However, if the equipment is older, it is most likely worth purchasing a new and more efficient natural gas unit.

Since 2002, according to Houselogic.com, oil heat has averaged 30% to 50% more than gas every year.
According to HVAC.com, a company that connects homeowners with local contractors, of all fossil fuels, natural gas is the cleanest option. Use of natural gas lowers the amount of greenhouse gases and carbon emitted by your household, generating less carbon dioxide than other heating fuels: 45% less than coal, 30% less than oil and 15% less than wood. Not only is natural gas cleaner, it also makes you feel more comfortable. Compared to electric heating, a gas furnace can produce air temperatures up to 25 degrees warmer. The average temperature produced by a gas heating system delivered to your living spaces is around 130 degrees. And, gas heating systems have efficiencies as high as 97% while the highest efficiency for an oil furnace is 87%.

A SIZE FOR EVERY SPACE
Don’t need to heat the entire house? Natural gas space heaters are a good choice for rooms that are not often used, areas of a home that need a heating boost and room additions. These units are fairly small and can be mounted on a wall or baseboard units. They can be sized to heat one or more rooms, and are often directly vented to the outside using conventional chimneys or flue vents, but unvented models are also available.

For more info on space heaters, visit empirezoneheat.com.

Regardless of the size, style or solution of the natural gas space heater you choose, one thing is for certain — no matter where one lives in the country, warm days and nights are forecast for this winter.

Use of natural gas lowers the amount of greenhouse gases and carbon emitted by your household, generating less carbon dioxide than other heating fuels.

— HVAC.com

PROPANE TO GAS
If a home is currently using propane, the conversion to natural gas can be very simple. There is a high probability that the existing equipment can still be used and can easily be converted to natural gas. And, in most cases, the existing piping can also be used. Your HVAC contractor will be able to verify what needs to be changed. However, if the existing propane heating equipment is older and not as efficient, it may be time purchase new equipment.

Once converted to natural gas, the propane tank has to be adequately disposed. If the propane tank was leased, the supplier will remove the container. If the tank was owned, you can either ask your local natural gas utility or a local propane supplier how to dispose of it properly. Natural gas is about one-half of the cost of propane, so homeowners should see a decrease in their home heating costs.

Regardless of which conversion is being considered, Furnacecompare.com advises homeowners to seek potential money-saving opportunities. For example, many natural gas suppliers offer rebates for customers who convert to natural gas. In most cases, that can be determined with just one quick call to your local utility. If you purchase an ENERGY STAR®-certified appliances, you may qualify for an additional rebate. You can search for Energy Star rebates at www.energystar.gov/rebate-finder?s=mega.

And don’t stop at converting just the heating equipment. A homeowner can realize additional savings by converting the water heater, range and clothes dryer to economical and efficient natural gas.
Turning waste to energy

Renewable natural gas offers a sustainable, clean energy source.

By Tonya McMurray

Landfills, wastewater treatment plants and dairy farms might not seem like energy producers – but they provide an abundant source of methane that can be converted to clean energy.

Renewable natural gas (RNG) is created from methane, or biogas, that is produced from the breakdown of organic waste. The biogas is then treated and upgraded to blend with or substitute for traditional natural gas in the pipeline, creating a clean, carbon-neutral fuel. Biogas can come from landfills, wastewater treatment plants, commercial food waste facilities and agricultural operations such as dairy or hog farms.

RNG is fully interchangeable with traditional natural gas and uses the same infrastructure and end-use equipment.

“Whether it’s your cooktop or your furnace, industrial applications or transportation fuel – anything you can use natural gas for, you can use renewable natural gas for,” said David Cox, director of operations, Coalition for Renewable Natural Gas (RNG Coalition).

Harnessing the power of methane

“Methane is both a powerful greenhouse gas and a source of energy,” said Grant Zimmerman, CEO Amp Americas LLC, which launched the country’s first dairy biogas-to-fuel project in 2011. “Landfill operators understood the value in capturing this energy and harnessed it to create electricity and RNG.”

The first RNG project was in 1982 at the 2,200-acre Fresh Kills Landfill in Staten Island, New York, where landfill operators used natural gas treating technology to upgrade its biogas to pipeline quality.

The industry grew slowly at first but began to expand in 2011 after the RNG Coalition was founded to advocate for the development and use of RNG. Through efforts to create public policy supporting RNG development and education about RNG benefits, the industry has grown significantly since then, Cox said.

There are currently 112 RNG production facilities throughout the U.S. and Canada, with 38 more under construction and 62 more in development. In addition, more than 500 operations collect RNG and use it to generate power on-site at industrial plants or other facilities or to generate electricity to power homes and businesses.

Fueling transportation

The largest market for RNG is the transportation industry where RNG comprises 39% of the compressed natural gas (CNG) and liquid natural gas used for transportation fuels, Cox said. The federal renewable fuel standard and the low carbon fuel standards in California, Oregon and British Columbia have driven the use of RNG in the transportation industry. The California Air Resources Board and the U.S. Environmental Protection Agency both recognize RNG as the cleanest transportation fuel on the market — cleaner even than electric vehicles.

About 85% of RNG today is used for transportation fuel with the remainder going to electricity generation, Cox said. But industry experts

RNG Impact (2015-2019)

Put into perspective, RNG as a transportation fuel is...

- Lowering GHG emissions equivalent to 18,568,079,404 miles driven by the average passenger car
- That’s equal to 745,676 trips around the earth
- Reducing CO₂ emissions equal to 842,009,227 gallons of gasoline consumed
- That’s equal to the total amount of fuel used by 63,171 transit buses every year
- Sequestering carbon equal to growing 123,731,931 tree seedlings for 10 years
- or 9,772,367 acres of U.S. forests for one year

Note: Assumes 7,482,936 metric tons of CO₂e reduced over the last five years through increased RNG usage calculated using CARB’s LCFS carbon intensity numbers. GHG equivalency results calculated using the U.S. EPA’s calculator. Transit bus fuel use provided by U.S. DOE AFDC.
expect that mix will change over the next several years as natural gas utilities begin to incorporate RNG into their fuel mix to meet consumer demand for cleaner energy sources.

“A lot of utilities have set very ambitious goals to get RNG to their customers,” Cox said. “In the near term, many utilities are planning to start delivering RNG to customers within the next year or two. In the long term, many have goals that more than 20% of their gas delivery will be renewable natural gas by 2040.”

**CARBON-FREE ENERGY**

When calculated on a lifecycle basis, RNG qualifies as a carbon-negative fuel source.

“By harnessing methane emissions, the industry actually causes a direct reduction in greenhouse gas emissions,” Zimmerman said. “When we use this energy, we replace fossil fuel demand. Together, the impact is not just preventing the greenhouse gas emissions, but actually cutting them.”

Cox agreed. “Renewable natural gas takes recycling to a whole other level,” he said. “It takes the discarded material that can’t otherwise be put to use, breaks it down to the molecular level and delivers energy.”

The International Energy Agency estimates that RNG could eventually supply as much as 20% of the country’s natural gas demand. RNG production has tripled over the past five years, and the industry continues to grow at a rapid pace, Zimmerman said.

“Almost as many new facilities are under construction and in development as there are currently operating,” he said. “That suggests that the market is preparing to double again from today’s production level.”

Zimmerman said there is already a strong foundation to support future RNG growth.

“There are thousands of landfills, wastewater treatment plants and farms in the U.S. and Canada that are potential candidates for RNG projects,” he said.

The prospect for continued RNG expansion, along with its energy-saving benefits, means RNG is increasingly achieving recognition as a viable energy solution, Cox said.

“People still think about wind and solar when you talk about renewables, but in the not too distant future, renewable natural gas is going to be in the same sentence when we think about renewables,” he said. “I think, increasingly, people will see that we are very relevant to the future of the country’s energy portfolio.”

“Whether it’s your cooktop or your furnace, industrial applications or transportation fuel – anything you can use natural gas for, you can use renewable natural gas for.”

— David Cox, director of operations, Coalition for Renewable Natural Gas

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**2019 NGV Fuel Use**

**717 Million GGE Total**

In 2019, **39%** of all on-road fuel used in natural gas vehicles was RNG

<table>
<thead>
<tr>
<th>Conventional Natural Gas</th>
<th>Renewable Natural Gas</th>
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<td>440 Million GGE</td>
<td>277 Million GGE</td>
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**“Methane is both a powerful greenhouse gas and a source of energy. Landfill operators understood the value in capturing this energy and harnessed it to create electricity and RNG.”**

— Grant Zimmerman, CEO Amp Americas LLC

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**RNG Production Facilities**

- 110 in operation
- 40 under construction
- 58 in development

Note: in U.S. and Canada as of 4/1/20
People have been drawn to the warmth and beauty of gas fireplaces since they arrived on the scene more than a century ago. Today, exciting new trends in customization are attracting consumers in search of coziness, practicality and that special look.

Whether it’s achieving elegant new styling or refreshing a traditional look, a variety of technologies and styles is available. The versatility of aesthetics is one more plus when it comes to natural gas, which is clean, safe, convenient and cost-effective.

“The most significant trend in gas fireplaces right now is flexibility,” said Kyle Grant, marketing director with Regency Fireplace Products. “Fireplaces are increasingly becoming more customizable, allowing you to pick and choose the exact features you want to create the look you want.”

Fireplaces are so popular that about one-third of U.S. households have one, according to the U.S. Energy Information Administration. About half of new construction, single-family homes include at least one fireplace, and 33% of homeowners are thinking about remodeling their fireplace or hearth.

Why the love affair with fireplaces – particularly the gas variety? Natural gas has long been recognized for being energy-efficient and environmentally friendly. A significant advantage of gas over a wood fireplace is convenience. A gas fireplace’s temperature can be easily adjusted to create just the right warmth and atmosphere.

“Our attraction to fire is inherent to one of our most basic needs, warmth,” Grant said. “Fire is soothing, mesmerizing and calming.”  

(continued on page 12)
Fireplaces bring all those elements into a room, creating a warm, calming environment. There is something primal about our love of fire, and the ability to have that in your home daily can lead to tremendous comfort.”

Consumers typically mention one of three benefits to upgrading to a gas fireplace, he said. First, homeowners like the convenience of turning a gas fireplace on or off with the push of a button and easily adjusting the temperature. For those moving from wood to gas, this simplicity is a bonus, with no more hauling logs and cleaning up afterward. Second, a gas fireplace is safer than a wood-burning fire since there are no sparks and embers to worry about, as well as no creosote buildup in the chimney. Finally, people will appreciate the energy efficiency of natural gas as compared to other fuels. In terms of home improvements, updating a fireplace provides one of the highest returns on investment.

Today's gas fireplaces offer more flexibility, better installation options, updated styling and realistic-looking flames that appear to dance effortlessly between the logs, casting an orange hue across the room. From a design perspective, some consumers want larger glass and are more focused on the fireplace's aesthetic than just the flame. In that way, fireplaces are expanding to become larger and squarer instead of rectangular, or extra-long and linear.

Corner and multisided fireplaces are another way to integrate a fire-

Because natural gas is a popular energy source for heating, generating electricity and fueling a multitude of appliances, it’s good to know there is a plentiful supply for today – and in the future.

The United States has been the world’s top producer of natural gas since 2009, according to the U.S. Energy Information Administration. In fact, the nation’s total natural gas production increased 12% from 2017 to 2018, and that upward swing continues, the organization reports.

“Not only does clean-burning natural gas heat about half of American homes, but it also generates more than one-third of the nation’s electricity and is used to manufacture a wide range of products,” said Nichole Francis Reynolds, vice president, government and public affairs, Interstate Natural Gas Association of America. “With proper infrastructure, the growth in domestic natural gas production can continue to bolster America’s economy while helping the nation meet its environmental goals.”

Fortunately, while demand for natural gas increases, the resource base is also growing. Plentiful natural gas formations exist throughout the country. That growing resource base is attributable to shale gas, which is now accessible through innovation.

“These new resources have been known in the past, but they couldn’t be tapped into without today’s new technologies,” said Rick Murphy, managing director, energy markets with the American Gas Association.

Natural gas is a more efficient energy source than electricity because very little energy is consumed in transmitting it along pipelines and into homes. It’s all about site-to-source efficiency.

Site energy measures energy consumption at the point of use – for example, an appliance. Source energy measures energy consumption through the entire energy supply chain, whether it’s a gas molecule from the ground to burner tip or an electron from generation to use. Source energy captures the entire efficiency of an appliance because it considers how effective energy is used in the whole process, not just at the endpoint of use.

“When measured using source energy, natural gas is 90% efficient,” said Audrey Casey, editorial and marketing director with American Public Gas Association. “Very little energy is lost in getting energy from the source to the end user. This results in lower energy bills for consumers and less energy wasted.”

Because natural gas is provided through an efficient production and delivery network, it is three times more efficient than electricity from source to point of use, Casey said.

“The direct use of natural gas in homes and businesses reduces demand for other more carbon-intensive forms of energy, and results in net carbon emission reductions,” she said.

The natural gas industry is continuing to look for ways to be even more efficient and sustainable. That includes using waste streams from landfills or agricultural sites
place into a bigger room. Gas fireplace inserts – the units that are placed inside an existing masonry chimney – provide another option to allow homeowners to add a gas fireplace to virtually any home or room.

Consumers can customize their fireplace further by choosing the appropriate media. A contemporary look can be created using crushed glass, driftwood, crystals or smooth river stones. For a more traditional look, a (continued on page 15)

and converting it to a usable energy source for homes and commercial sites. (See related story on Page 08).

Energy-efficient natural gas is also helping to create thousands of American jobs in many industries, including energy production and manufacturing. The industry’s economic and environmental benefits are an ideal foundation for providing energy security into the future. ■
Raking leaves is probably the first chore that comes to mind when homeowners think about fall maintenance. But landscapers and home maintenance professionals advise paying attention to a range of household chores to protect homes from the elements and prepare your yard for a return to healthy growth next summer.

**FALL LAWN CARE**

Removing leaves is important for lawn health and protecting water quality, according to the National Association of Landscape Professionals (NALP). Freezing and thawing cycles can cause leaves, dead grass and plants to release phosphates and nitrates, which can be carried in runoff from spring rains and snowmelt and end up in surface water.

Pulling weeds now means fewer in the spring, according to NALP. Fall is also a good time to seed any dead spots in your yard and fertilize grass to help create a lush, healthy lawn for next spring and summer.

Prune plants and cut perennials close to the ground. Landscape professionals recommend pulling up any plants remaining in a vegetable garden to avoid decaying plants that can harbor pests and diseases. Spring bulbs should be planted in October in colder climates and in November in warmer areas.

**OUTSIDE MAINTENANCE**

Home maintenance professionals recommend cleaning and repairing gutters to avoid leaks and ice dams. Disconnect garden hoses, shut off exterior faucets and drain water from outdoor pipes, valves, and
sprinkler heads to protect against burst pipes.

Cover outside vents and openings to prevent insects, birds and rodents from crawling inside to nest. For those living in areas prone to snow, make sure to keep appliance vents and gas meters free from snow and ice buildup.

The Hearth, Patio and Barbecue Association recommends moving your gas grill closer to the house or to an area that provides shelter from the wind so you can continue using it throughout the winter.

**STAYING WARM**

A natural gas heating system makes winter preparation easy. Heating equipment, fireplaces, chimneys and flues should be inspected to ensure they are ready to provide safe and comfortable heat, but because natural gas burns cleanly, equipment typically needs less maintenance, and there is less need for chimney cleanings.

Seal any leaks, holes or tears in seals surrounding windows and doors by applying tape, foam or felt weather stripping to doors and caulking the joints around windows frames and between the frame and wall.

Consider investing in a natural gas generator to power your home during power outages. Because natural gas is delivered to the home via underground pipelines, it is less susceptible to weather disruptions, so a natural gas generator can provide a reliable secondary energy source.

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log set designed to resemble wood-burning fireplaces can be used. Some consumers are even choosing to mix and match, combining crushed glass with logs or beads and stone.

New gas fireplaces are contributing to increased home heating management and efficiency. A fireplace insert can help to seal an open chimney better, keeping the home warmer in the winter and cooler in the summer. A fireplace is a zone-heating appliance. Zone heating allows homeowners to turn down the furnace and heat the rooms where they spend more time. Additionally, products like the Regency Heat Wave kit allow for heat from the fireplace to be ducted into adjacent rooms.

Modern gas fireplaces also offer even more sophisticated electronic ignition systems, with thermostatic remote controls to start the fire. The remote automatically adjusts the flame based on the temperature of the area where it is placed. Smart remotes allow homeowners to maintain a consistent temperature and can be set to turn on and off at specific times. This saves fuel costs – and lowers emissions – because the pilot light isn’t left on when the fireplace is not in use.

New technologies are constantly being developed to make installing a fireplace easier and more accessible than ever. One example is Regency’s patented Cool Wall System, which reduces installation costs by eliminating the need for expensive steel framing or noncombustible materials. The fireplace can be finished in any material, including wood or wallpaper, and placed directly to the edge of the fire. Another innovation is power venting, which allows the fireplace to be installed in previously inaccessible areas.

With so many exciting innovations, it’s no wonder gas fireplaces are a major focal point in today’s home. Because of the installation requirements of many fireplaces, it’s important to consult with a qualified installer who can assess the living space and identify appropriate options in a range of prices. The installer will also provide the appropriate heat output (measured in British Thermal Units, or BTUs) for maximum comfort.

“The most significant trend in gas fireplaces right now is flexibility. Fireplaces are increasingly becoming more customizable, allowing you to pick and choose the exact features you want to create the look you want.”

— Kyle Grant, marketing director, Regency Fireplace Products
GRILLED PUMPKIN WITH A CINNAMON-WHiSKEY GLaze

INGREDIENTS

For the Pumpkin
1 pie pumpkin
Spray oil

For the Seasoning
1 tablespoon light brown sugar
1 teaspoon roasted ground cinnamon
1/4 teaspoon grated nutmeg
1/4 teaspoon ground ginger
1/4 teaspoon dried orange zest (optional)
1/8 teaspoon ground allspice

For the Cinnamon Whiskey Glaze
1 cup chicken stock
1/2 cup light brown sugar
1 tablespoon cornstarch
1 tablespoon cold water
1-2 ounces cinnamon whiskey

DIRECTIONS

1. Put the chicken stock in a small pot over the side burner at medium heat and bring to a simmer. Reduce heat and simmer until reduced to a half cup, about 15 minutes.

2. Add in the brown sugar and whisk until blended. Reduce heat to low.

3. Make a slurry by whisking the cornstarch and water together. Whisk into the stock mixture until blended, just 1 to 2 minutes. Add in the cinnamon and whiskey to taste.

4. Mix together the seasoning ingredients.

5. Preheat your grill to medium-high heat.

6. Clean the pumpkin. Wash and then slice in half with a large chef’s knife. Scrape out the seeds and pulp (the seeds are great for roasting). Slice the pumpkin into 3/4-inch to 1-inch wedges. Clean the inside edges with a vegetable peeler.

7. Spritz the slices with oil and then sprinkle them evenly with seasoning. Grill the slices over direct heat for 5 minutes per side.

8. Brush the slices on both sides with the cinnamon-whiskey glaze and place on the upper rack of your grill. Cook for 5 more minutes.

9. Remove from the grill and serve while warm.

SOURCE: WWW.CHARBROIL.COM