

A Beltway Outsider's View...

Natural Gas Transmission & Storage Threats & Opportunities

September 13, 2021



LDC GAS
FORUMS

MID-CONTINENT FORUM



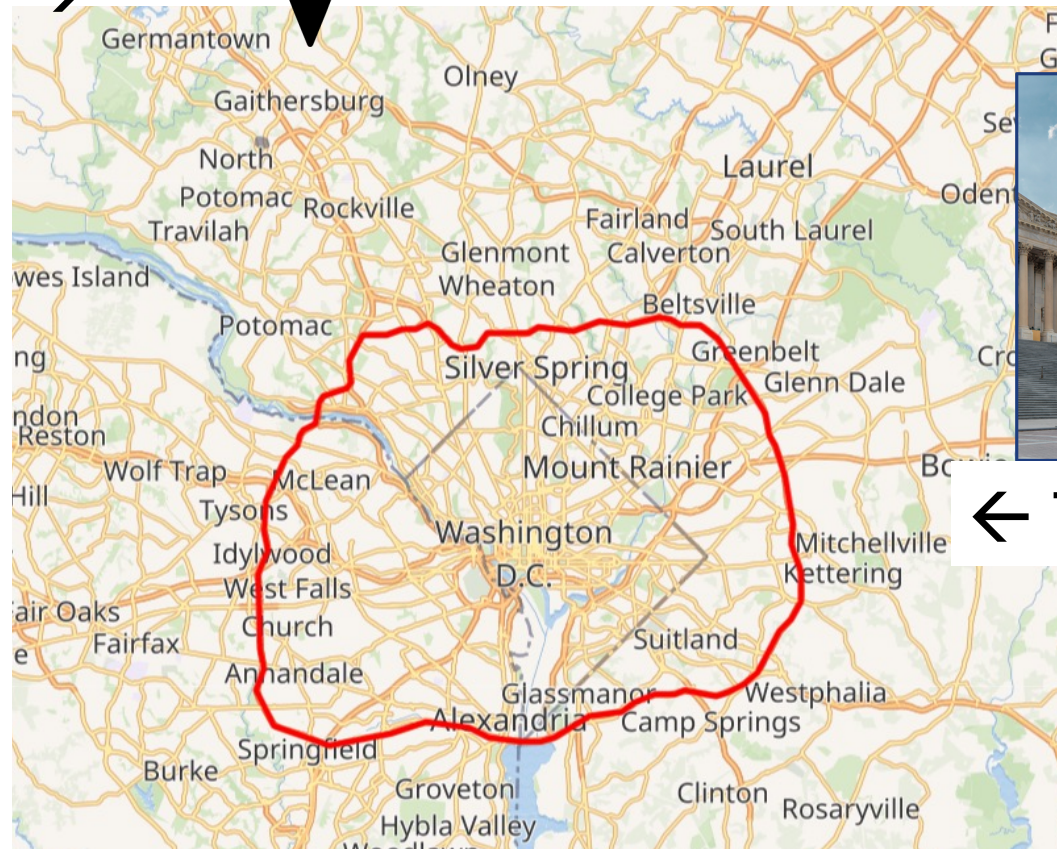
INGAA
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A view from outside the Beltway...

I live here! →



- Opening remarks
- Overview



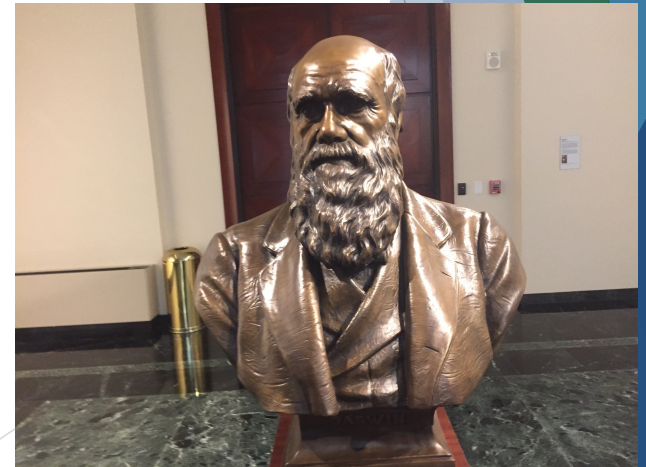
← They are here!

Natural Gas Transmission Challenge:

... it is not the strongest that survives;

but the species that survives is the one that is able best **to adapt and adjust to the changing environment** in which it finds itself.

Quotation attributed to
Charles Darwin (1809 - 1882)
Origin of Species



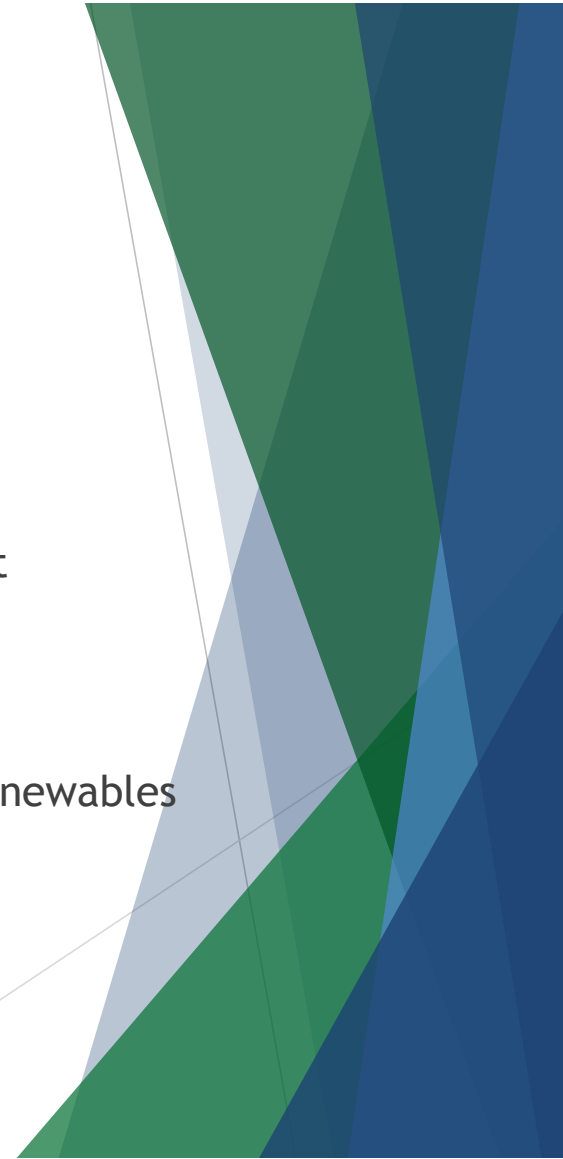
Natural Gas Transmission & Storage: Threats & Opportunities

Generalized threats:

- ▶ Legislative
- ▶ Regulatory
- ▶ Climate Policy

Industry Opportunities:

- ▶ Non-traditional Gas Transport
- ▶ CO₂ Capture & Transport
- ▶ Grid Reliability / Enabling Renewables
- ▶ LNG Exports
- ▶ Economic Reality



Actions of the Biden Administration



BRIEFING ROOM

Executive Order on Tackling the Climate Crisis at Home and Abroad

JANUARY 27, 2021 • PRESIDENTIAL ACTIONS



BRIEFING ROOM

National Security Memorandum on Improving Cybersecurity for Critical Infrastructure Control Systems

JULY 28, 2021 • STATEMENTS AND RELEASES



BRIEFING ROOM

FACT SHEET: President Biden Sets 2030 Greenhouse Gas Pollution Reduction Target Aimed at Creating Good-Paying Union Jobs and Securing U.S. Leadership on Clean Energy Technologies

APRIL 22, 2021 • STATEMENTS AND RELEASES



BRIEFING ROOM

Executive Order on Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis

JANUARY 20, 2021 • PRESIDENTIAL ACTIONS



BRIEFING ROOM

Paris Climate Agreement

JANUARY 20, 2021 • STATEMENTS AND RELEASES

Natural Gas Transmission & Storage: Legislative Threats

Narrow Democrat Majority:
(Reconciliation Bill)

- ▶ Methane Fee proposal
- ▶ Clean Electricity Performance Program



Natural Gas Transmission & Storage: Regulatory Threats

- ▶ Council on Environmental Quality - NEPA rules
- ▶ Federal Energy Regulatory Commission permitting & oversight:
 - Commissioner Appointment | Certificate Policy Statement | Algonquin “briefing order” | Office of Public Participation | Upstream / Downstream GHG Impact Assessment
- ▶ Environmental Protection Agency
 - Clean Water Act Section 401 & Methane Rule
 - Social Cost of Carbon
 - Environmental Justice & Equity
- ▶ ACOE Nationwide Permit(s)
- ▶ Transportation Security Administration
 - Cyber-security Directive



**US Army Corps
of Engineers®**



**Transportation
Security
Administration**

Natural Gas Transmission & Storage: Climate Policy Threats

- ▶ Net Zero Commitments / ESG related
- ▶ Alternate Low or No-Carbon Fuels
 - Renewable Natural Gas
 - Hydrogen Blending on existing pipes
 - Blue / Green Hydrogen
- ▶ Carbon Capture & Utilization



Natural Gas Transmission & Storage: Opportunities

- ▶ Transporting non-traditional products:
 - Renewable Natural Gas
 - Hydrogen Blending
 - Blue / Green Hydrogen
- ▶ Carbon Capture & Utilization
- ▶ LNG Export
- ▶ Grid Reliability / Resiliency
 - Enable Renewable Power Generation

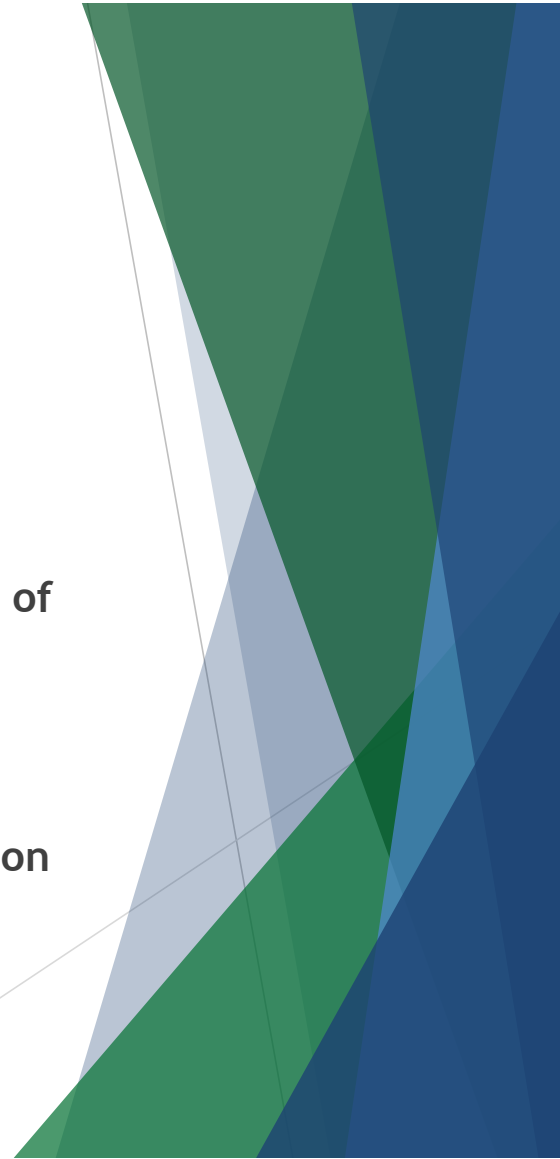


Examples of Optimism:

► The Role of Natural Gas in the Transition to a Lower-Carbon Economy

- Published by The INGAA Foundation, Inc. - May 7, 2019
(Black & Vetch Management Consulting)

The evolving role of natural gas continues to be at the forefront of US energy industry developments. This evolution to a lower carbon economy, including how growing renewable power generation and battery storage will affect gas-fired power generation, and the resulting effect on the utilization of midstream natural gas infrastructure is an important consideration for natural gas midstream operators and the value chain supporting the construction and operation of midstream infrastructure.



Examples of Optimism:

► Investing in the US Natural Gas Pipeline System to Support Net-Zero Targets

Published by Columbia University – Center for Global Energy Policy - April 22, 2021
(Erin M. Blanton, Dr. Melissa C. Lott and Kirsten Smith)

Studies by energy agencies, universities, and the industry that model future US natural gas consumption consistently show continued use of natural gas for at least the next 30 years, even in scenarios where the country achieves net-zero targets by midcentury. There is no quick replacement for gas in the US energy mix. And for many of the needs natural gas currently meets, the eventual replacement may be zero-carbon gaseous fuels (e.g., hydrogen, biogas). These fuels may play a significant role in supporting reliability and making the energy transition more affordable—but they, too, will require a pipeline network for efficient delivery to markets and end users.

<https://www.energypolicy.columbia.edu/research/report/investing-us-natural-gas-pipeline-system-support-net-zero-targets>



Examples of Optimism:

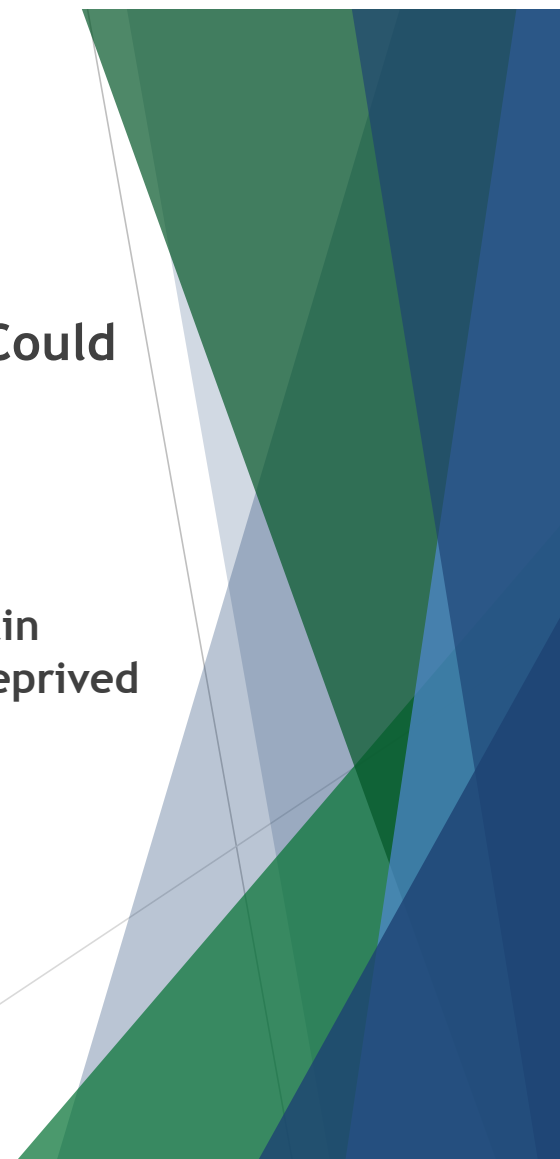
► Carbon-Neutral LNG: Another Reason Why Natural Gas Could Win ‘The Energy Transition’

Forbes – July 25, 2021

(Jude Clemente)

Carbon-neutral LNG is just one of many reasons why you should remain bullish on natural gas. The world is simply too poor and too energy-deprived for gas demand to go anywhere but up.

<https://www.forbes.com/sites/judeclemente/2021/07/25/carbon-neutral-lng-another-reason-why-natural-gas-could-win-the-energy-transition/?sh=3a6ec99842ff>



Examples of Optimism:

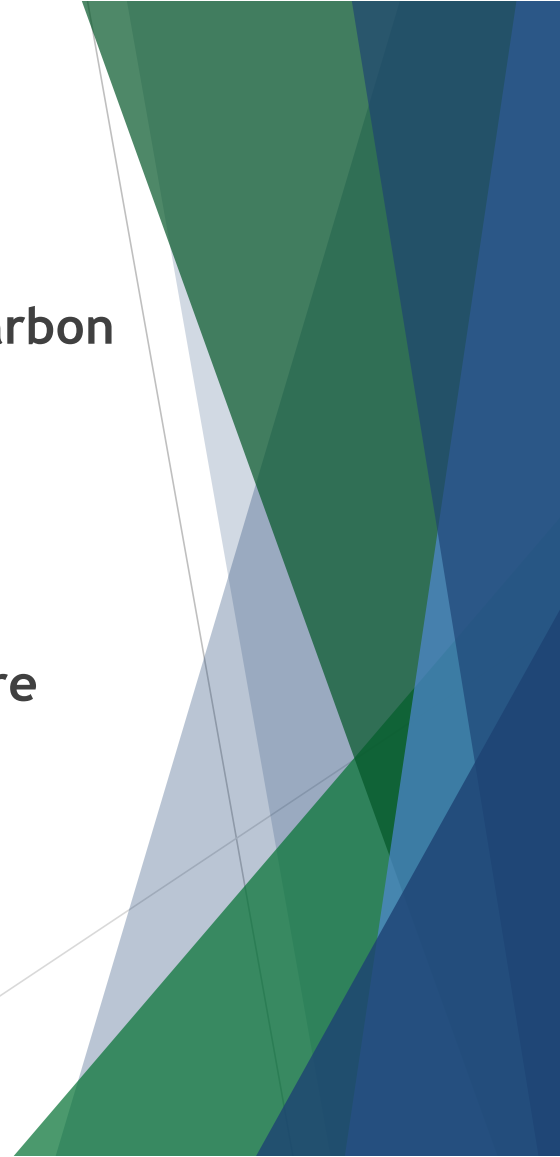
- ▶ **Oil and gas pipeline groups attempt reinvention with carbon capture plans**

Financial Times – August 26, 2021
(Justin Jacobs)

Funneling CO₂ from power plants, cement factories and refineries a potentially immense business opportunity

US government says 68,000 miles of new CO₂ networks are needed to reach emissions goals

<https://leaderpost.com/financial-times/oil-and-gas-pipeline-industry-tries-to-reinvent-itself-with-carbon-capture-plans>



Examples of Economic Reality:

Natural Gas Bans May Hit \$100B Roadblock — Report



Policymakers aiming to ditch natural gas in homes across the United States could encounter a nearly \$100 billion barrier in the form of electrical panels that are ill-suited for a conversion to electric heat, according to a new analysis. Published by Austin-based clean energy research and testing firm Pecan Street Inc. this week, the report concluded that about 48 million single-family households across the United States would need to spend thousands to upgrade their homes' electrical panels before they can "fully electrify," or abandon the use of natural gas for everything from water and space heating to cooking, while trading in gas cars for electric vehicles. On average, the upgrades would run around \$2,000 per household, although the cost could go as high as \$5,000 in some cases, according to Pecan Street's estimates. Undertaken on all 48 million homes that currently rely on natural gas in some capacity, the price tag would come out to \$96 billion.

<https://www.pecanstreet.org/2021/08/panel-size/>

In Closing...

- ▶ Stay focused on what we do best -
 - ❖ Creating and maintaining a safe and reliable natural gas pipeline system to serve the energy needs of North America
 - ❖ Adapt to our future challenges
- ▶ Become an Advocate for our industry:
 - ❖ Exercise your 1st Amendment “right to petition government for redress of grievances”
 - ❖ Abundant & Affordable energy, enables our economy
 - ❖ Natural gas is a foundational fuel in partnership with renewables, in the transition to a low-carbon future

The Benefits of Natural Gas **INGAA**

While many people think of furnaces and stoves when they hear about natural gas, its daily applications extend much further than heating and cooking. Not only does clean-burning natural gas heat about half of American homes, it also generates more than one-third of the nation's electricity and is used to manufacture a wide range of products. 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.

Cleaner, Reliable Electric Generation

14%↓
Energy-related carbon dioxide emissions, 2005-2017

According to the U.S. Energy Information Administration, from 2005 to 2017, U.S. energy-related carbon dioxide emissions declined by 14 percent, largely because of the increased use of natural gas for power generation. Natural gas also supports the growth of renewable energy sources, ensuring we have a reliable mix of energy resources and an on-demand source because renewable power generation is variable.

Natural Gas power plants are available on-demand, providing critical support to renewable resources in the absence of wind or sunlight.

Consumers Save with Natural Gas

\$874
Annual energy savings for consumers using natural gas to heat their homes, as of 2018

American consumers continue to benefit greatly from the resurgence in domestic natural gas production. Additionally, homeowners who use natural gas for heating, cooling and clothes drying save an average of \$874 per year on energy bills compared to homeowners who use electricity, according to a 2018 American Gas Association report.

In addition to these economic benefits of natural gas, the increased efficiency of appliances and homes has meant that its use for heating and cooking have also become more efficient. Even as more households directly use natural gas, consumption per household has decreased.

The commercial uses of natural gas include heating buildings and water, refrigeration and cooling equipment, cooking, drying clothes and outdoor lighting. The use of natural gas in 5.5 million commercial buildings has translated into over \$7.5 billion dollars of savings to the commercial sector since 2009 – savings which are passed along to consumers as they fuel economic competition.

Manufacturing

Natural gas is driving a resurgence in domestic manufacturing, both as an integral ingredient in products we use daily and as a fuel or heating source manufacture these products.

Natural Gas...

- Is clean burning, affordable and efficient
- Fuels our economy and our way of life
- Has afforded American families and businesses lower utility bills and lower costs for goods and services
- Is integral to American manufacturing, used to produce automobiles, textiles, plastics, steel, chemicals and more
- Has helped to create thousands of American jobs in the energy production and pipeline sectors, as well as the manufacturing industry
- Continues to significantly lower greenhouse gas emissions in the United States
- Is abundant in the United States, providing energy security

Did you Know?

Natural gas is responsible for the majority of energy used in manufacturing automobiles, plastics, glass, brick and other key sectors.

www.ingaa.org | 202-216-5000

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PHOTO: Two men in suits examining a large red engine component.

Thank You!

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