The Future of the Natural Gas Industry

July 13, 2021

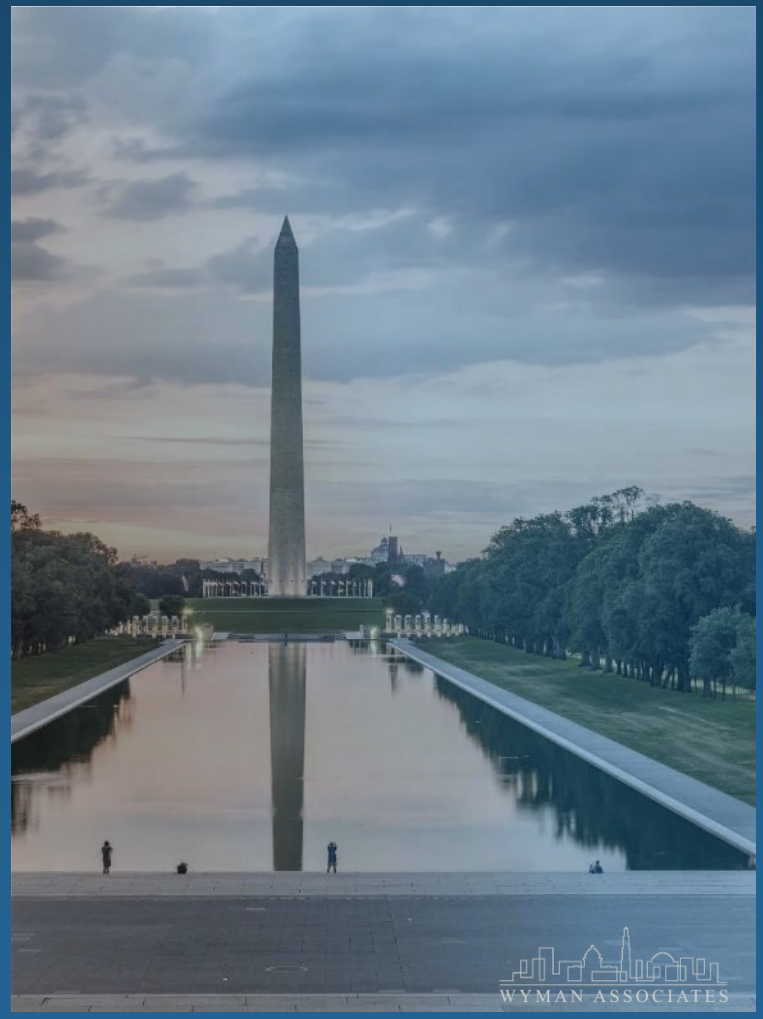
UCT / UtiliTech

Nashville, Tennessee

WYMAN ASSOCIATES

Panelists

- Frank Canavan, American Gas Association
- Stuart Saulters, American Public Gas Association
- John Fluharty, Quanta Services
- Randy Knapp, Plastics Pipe Institute
- Eben Wyman, Distribution Contractors Association



The American Gas Association, founded in 1918, represents more than 200 local energy companies that deliver clean natural gas throughout the United States. There are more than 76 million residential, commercial and industrial natural gas customers in the U.S., of which 95 percent — more than 72 million customers — receive their gas from AGA members. Today, natural gas meets more than 30 percent of the United States' energy needs.

AVERAGE HOME SIZE

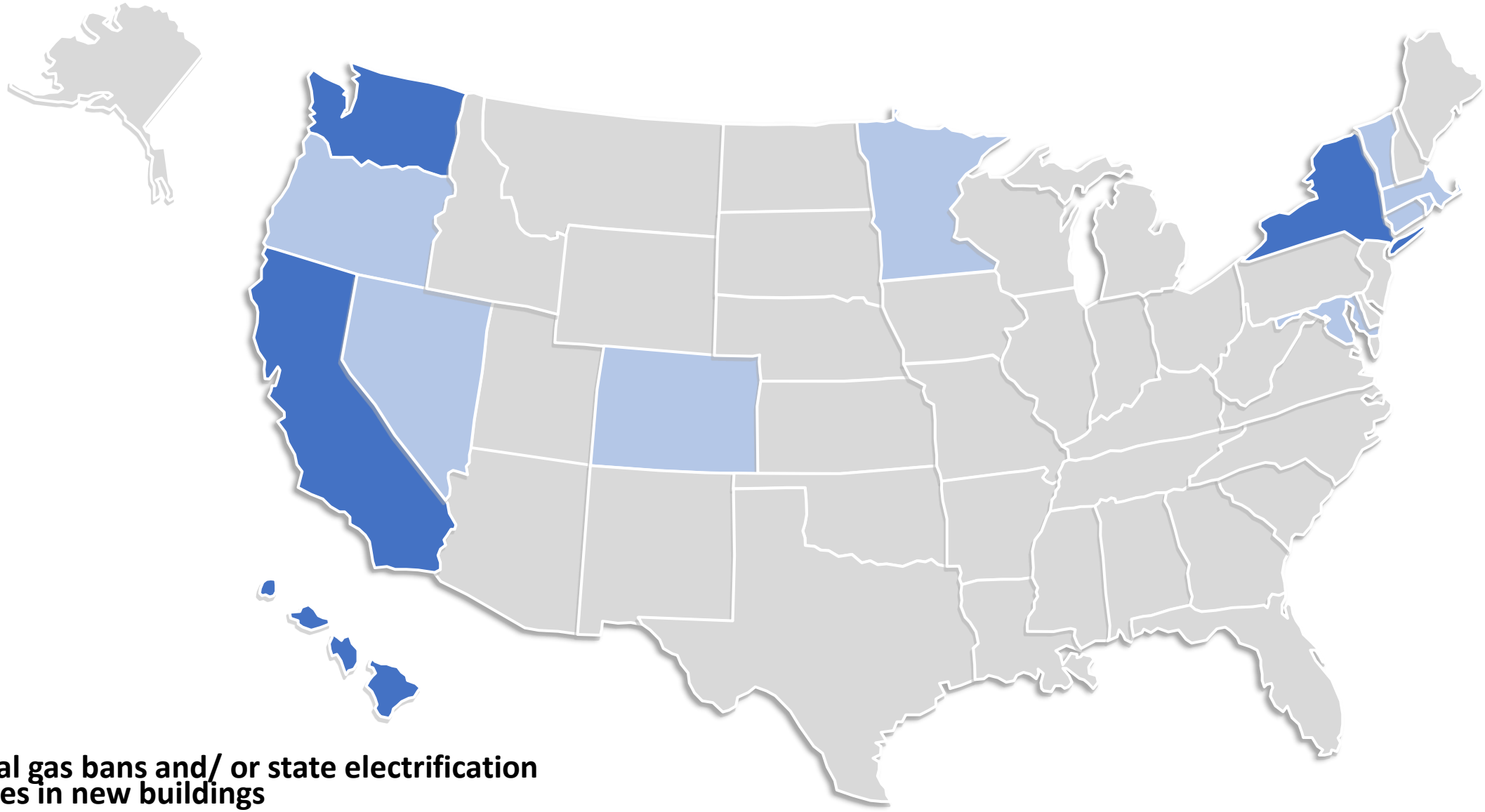
CARBON EMISSIONS

HELPING CUSTOMERS

Reduce Their Carbon Footprints

Carbon emissions from the average natural gas home decline 1.2 percent per year

The total number of residential natural gas customers in the U.S. has grown by 86 percent in the past 40 years, but overall residential natural gas demand has remained steady. Residential customers today use half of the volume of natural gas that they used in 1970 despite consistent growth in the average size of homes.



Local gas bans and/ or state electrification codes in new buildings

Adopted

Proposed

Grounded in Reality: The Impacts of Electrification

$271.4M Plunge in GDP and Nearly 6,000 Jobs Lost

The local economy would be impacted by higher commercial energy costs and less discretionary spending by consumers, which reduces competitiveness and leads to a $271.4 million hit to Columbus' GDP by 2040.

The loss of local dollars would destroy 5,710 Columbus jobs by 2040. Nearly 1,900 of which would disappear by 2025.

24% — 24% of jobs lost are in Healthcare and Social Assistance

16.9% — 16.9% of losses are from Professional and Business Services

13.6% — 13.6% of jobs lost are in Retail

12% — 12% are in Accommodation and Food Services

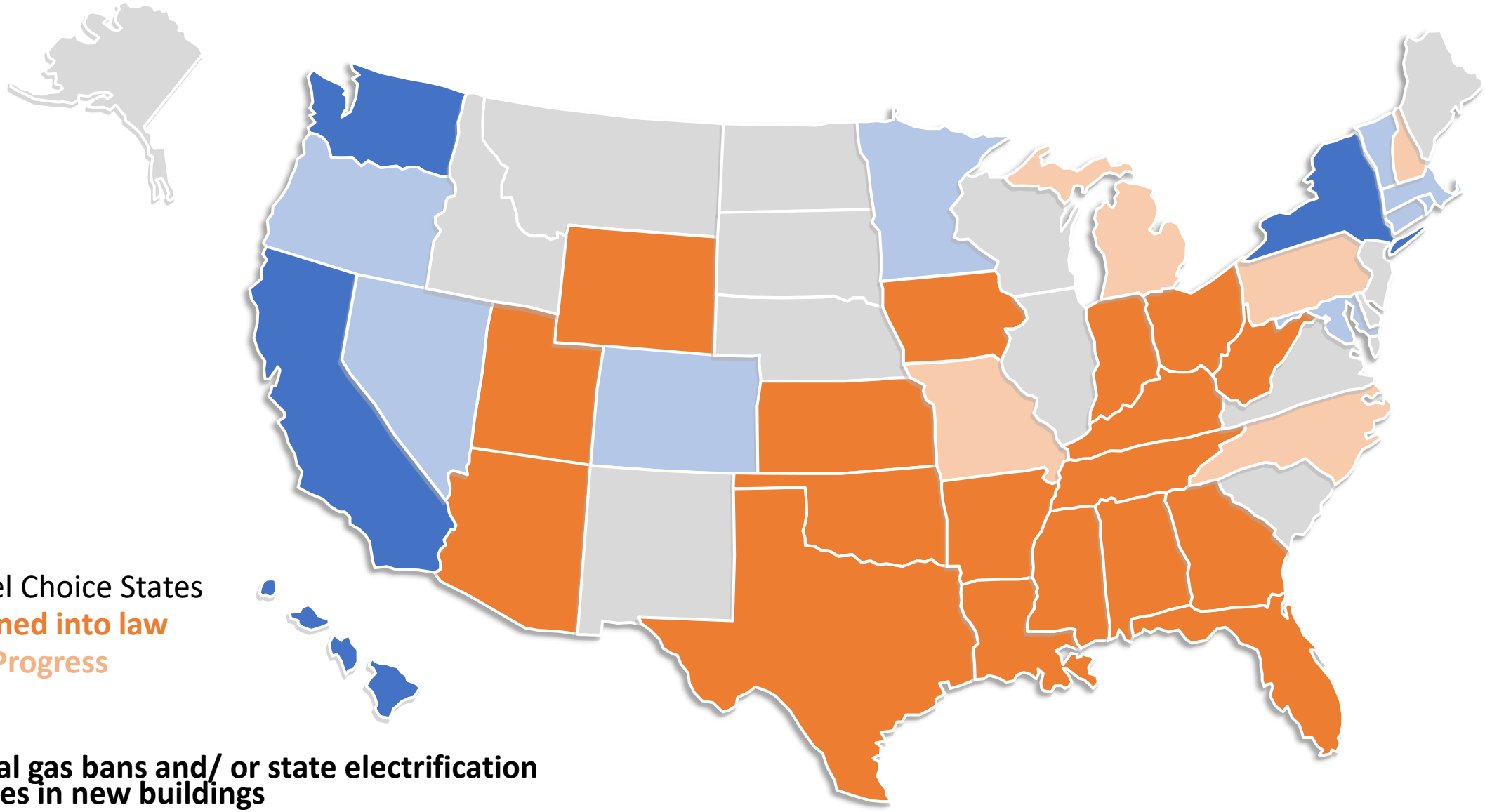
Forced electrification is an energy tax, making long term economic recovery after COVID that much harder.

$815/yr For residential gas homes

$1,562/yr For all-electric households

JOB LOSSES INCLUDE:

Higher energy prices reduce consumer spending and increase energy costs for businesses. Under a natural gas ban, the Denver metro economy would lose $220 million in GDP and nearly 6,000 jobs by 2041.



Fuel Choice States
Signed into law
In Progress

Local gas bans and/ or state electrification codes in new buildings
Adopted
Proposed

American Public Gas Association

- **APGA is focused on protecting consumers' energy choice.**
  - Best solution for the environment.
  - Maintains affordability.
  - Ensures safety.
  - Preserves resilience and reliability.
  - Continues access to preferred energy.

- **Public Gas Infrastructure, both workforce and pipelines, aim to play a role in America's clean energy future**

Who is the Plastics Pipe Institute

North American based trade association founded in 1950 and headquartered in Irving, TX

- 155+ member companies
- pipe manufacturers
- resin manufacturers
- machinery manufactures
- consultants
- affiliated associations
- international affiliates

Technologies

PPI
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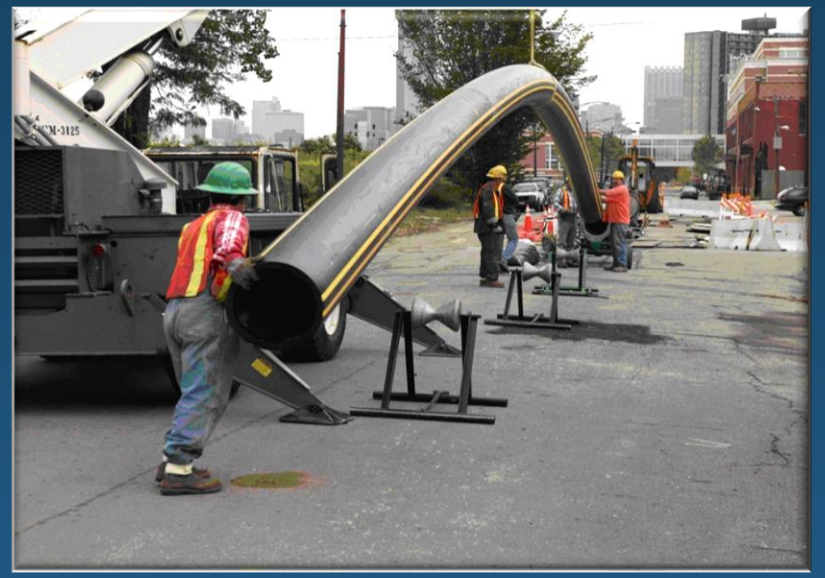
ENERGY PIPING SYSTEMS

- Gas distribution
- Oil & gas gathering
  - multi-phase
  - liquid hydrocarbons
  - gas
  - non-potable water
- LPG distribution
- Materials: PE, PA12, Composites



Changing Landscape for Energy Piping

- **Methane mitigation efforts on par with system safety**
  - PHMSA advisory bulletin – update inspection and maintenance plans by YE
  - Likely NPRM later this year
- **A worldwide push to reduce greenhouse gas emissions – net zero by 2050**
- **Columbia University report found that investing in the natural gas pipeline network could be crucial to helping the U.S. reach the 2050 zero emission goals**
  - Fortifying and upgrading the system could prepare the infrastructure to transport zero-carbon fuels and, in the mean-time, reduce methane leaks
  - A 20% blend rate would utilize 40% more capacity than is currently available in the U.S. pipeline network – we will need more pipelines
- **The existing network of gas piping provides a vast system for storing and delivering energy produced from a variety of sources**
- **Look for PHMSA climate change and alternative fuel workshop this fall**

Hydrogen Increasingly Important

- Hydrogen provides a great capacity to store and transport renewable energy
- NG/H2 blends can utilize the existing gas infrastructure
- PPI has formed a H2 TF
  - Increase understanding of potential impacts of H2 on plastics and polymers
  - Support for ongoing industry efforts at CSA and AGA
  - Develop Q&A and technical documents
  - Support research efforts

HYDROGEN TECHNOLOGY CENTER

H-Mat SM Hydrogen Materials Compatibility Consortium

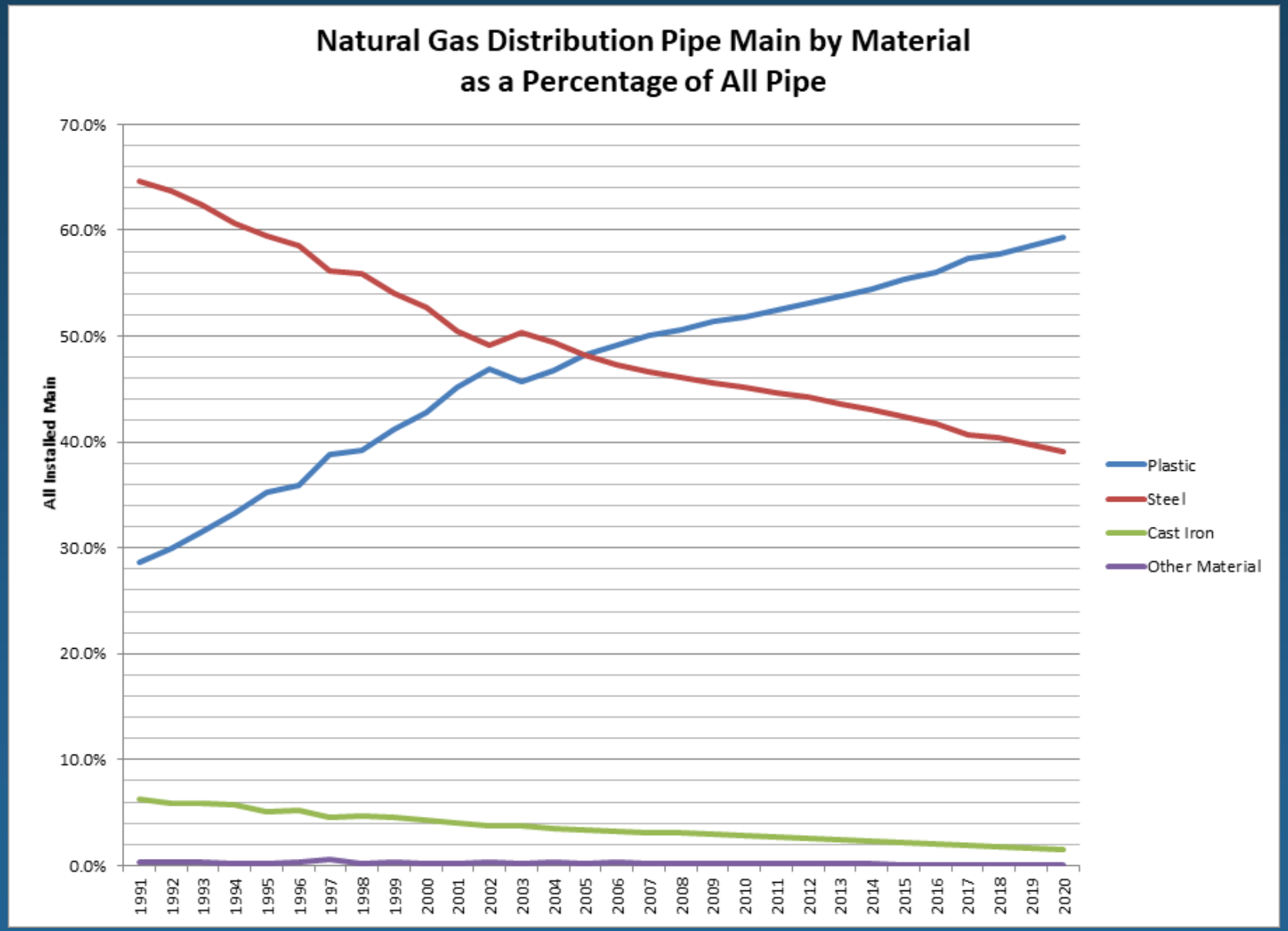
H2@Scale SM U.S. Department of Energy

Plastic Piping's Critical Role

- Plastic piping has already been proven to help eliminate leaks and reduce emissions in gas distribution
- Plastic piping is compatible with alternative energy choices like H2, RNG, and Biomethane
- Plastic piping can be sued to support increased carbon dioxide (CO2) capture efforts and reduce flaring at the source
- The existing network of gas piping provides a vast system for storing and delivering energy produced from a variety of sources
- Regulations are supporting the use of larger diameters (up to 24 inch) and higher operating pressures for plastic gas distribution piping (up to 125 psig and 250 psig for PE and PA respectively)
- Plastic is increasingly being used in gas distribution and can help future-proof the system

As of 2019
~ 771,841 miles of plastic mains

~ 51.2 MM plastic services

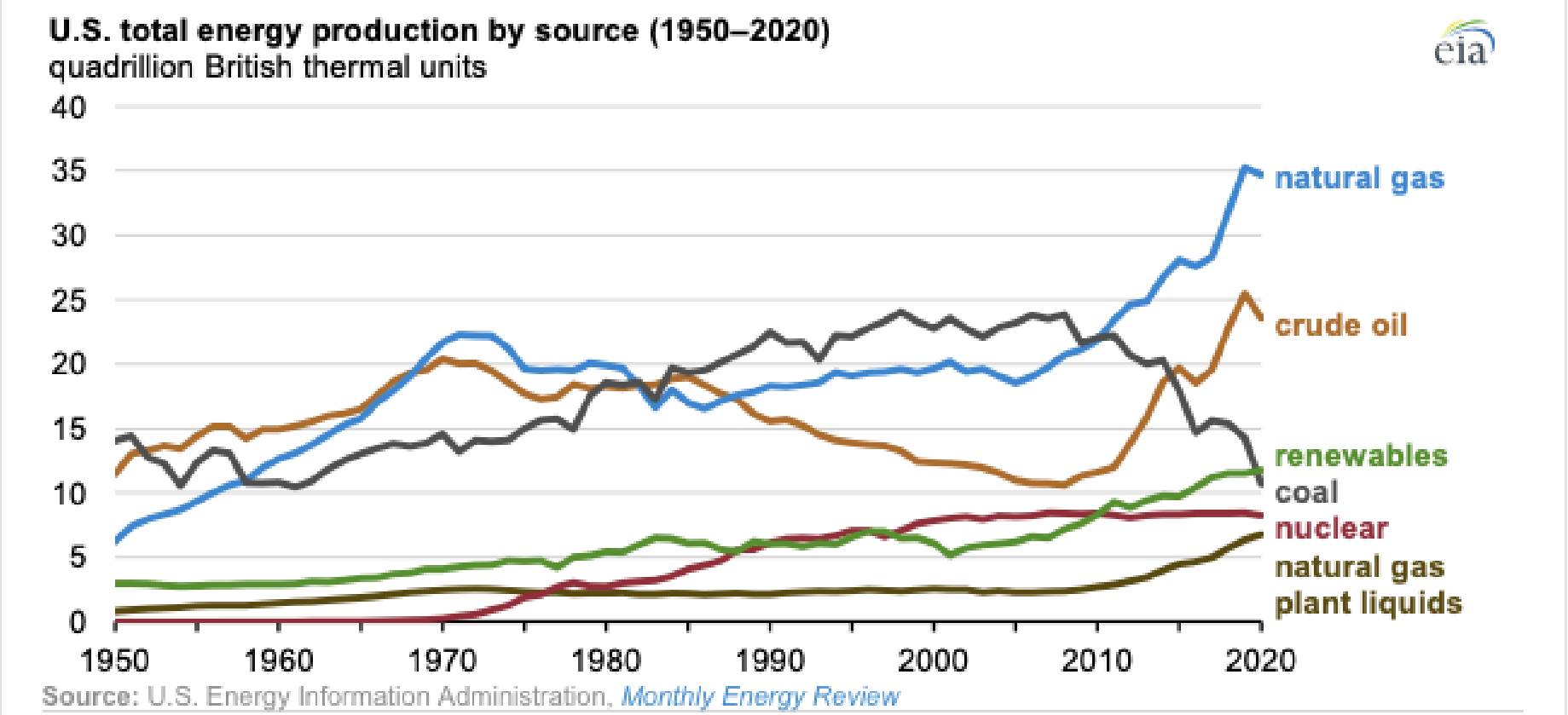


Source: AGA 2021 (using PHMSA 2020 Annual Data)

Plastics Under Attack

- **In line with the attacks on natural gas there has been an increase in anti-plastics legislation – while mostly directed toward single use items plastic piping is getting pulled into the mix**
- **Legislation like the CLEAN Futures Act (Sect. 902) – would pause new permits for plastics facilities or the raw materials used to make plastics with the following impact:**
  - Hurt the plastics industry ability to expand (already in short supply)
  - Have the unintended consequence of reducing investments in net zero manuf. goals
  - Reduce the capacity to produce plastic piping that is the backbone of our energy infrastructure and needed to upgrade our infrastructure for all forms of energy
  - Push manufacturing and jobs overseas
  - Reduce the industry's ability to further commercialize new advanced recycling programs

Natural Gas Critical to Today's Energy Production

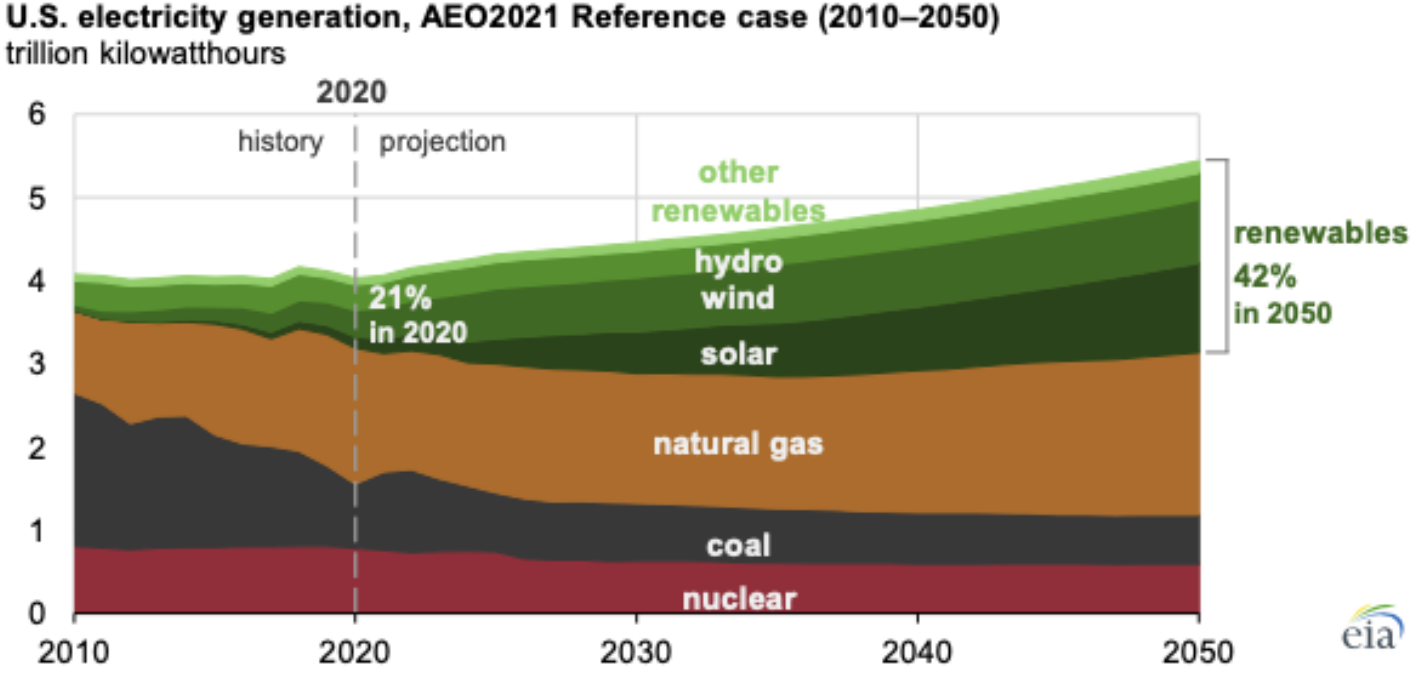


Note: In 2019 renewable energy production surpassed coal for the 1st time

Natural Gas Critical to Future Energy Production

FEBRUARY 8, 2021

EIA projects renewables share of U.S. electricity generation mix will double by 2050



Source: U.S. Energy Information Administration, *Annual Energy Outlook 2021* (AEO2021)

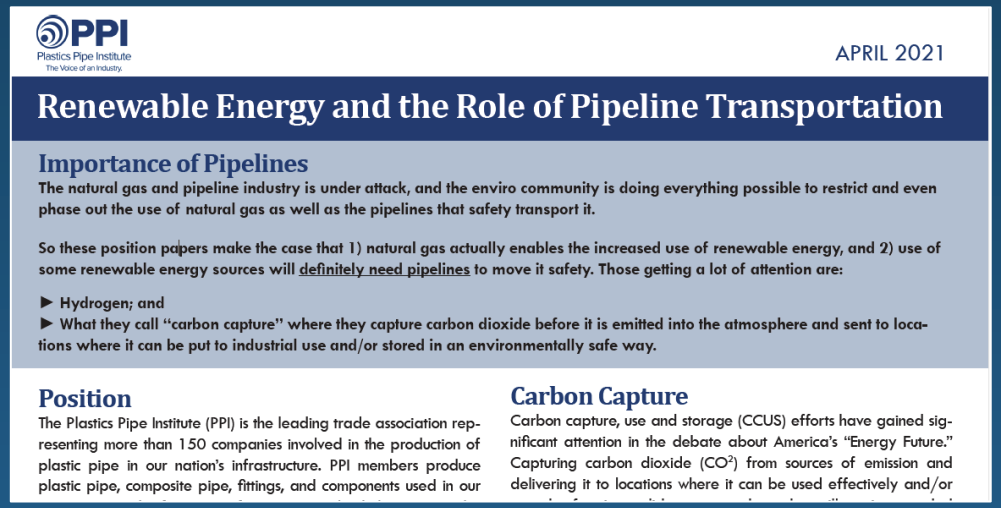
PPI Energy Position

PPI supports efforts to reduce greenhouse gas emissions through innovation in plastic piping processing and materials along with smart energy choice to provide affordable, safe and reliable energy. PPI believes these goals can be accomplished by:

- Providing piping systems and developing technical information to support the increased use and transport of renewable natural gas, synthetic natural gas, and hydrogen
- Increasing the oil & gas piping capacity to reduce flaring by capturing methane at the source
- Developing and offering piping materials that support the responsible use of renewable energy options such as: wind, solar, and geothermal
- Continuing to expand the use of plastic piping to support the leak free distribution and use of natural gas as an affordable, safe, and clean energy source
- Support mechanical and advanced plastic recycling efforts through enhanced member company recycling programs

PPI Position Papers & Letters

Latest Position Paper (*Submit for Fly-In*)



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The Voice of an Industry.

APRIL 2021

Renewable Energy and the Role of Pipeline Transportation

Importance of Pipelines

The natural gas and pipeline industry is under attack, and the enviro community is doing everything possible to restrict and even phase out the use of natural gas as well as the pipelines that safety transport it.

So these position papers make the case that 1) natural gas actually enables the increased use of renewable energy, and 2) use of some renewable energy sources will definitely need pipelines to move it safety. Those getting a lot of attention are:

- **Hydrogen; and**
- **What they call "carbon capture" where they capture carbon dioxide before it is emitted into the atmosphere and sent to locations where it can be put to industrial use and/or stored in an environmentally safe way.**

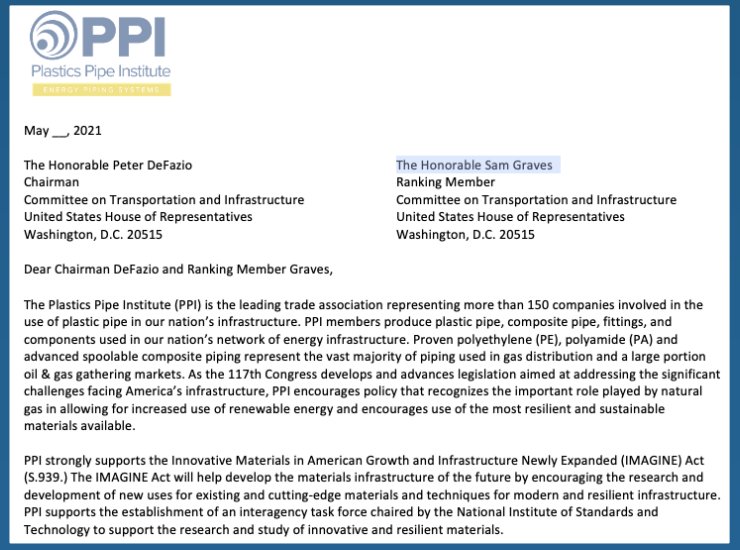
Position

The Plastics Pipe Institute (PPI) is the leading trade association representing more than 150 companies involved in the production of plastic pipe in our nation's infrastructure. PPI members produce plastic pipe, composite pipe, fittings, and components used in our

Carbon Capture

Carbon capture, use and storage (CCUS) efforts have gained significant attention in the debate about America's "Energy Future." Capturing carbon dioxide (CO^2) from sources of emission and delivering it to locations where it can be used effectively and/or

Response to IMAGINE Act (*Submitted*)



PPI
Plastics Pipe Institute
ENERGY PIPING SYSTEMS

May __, 2021

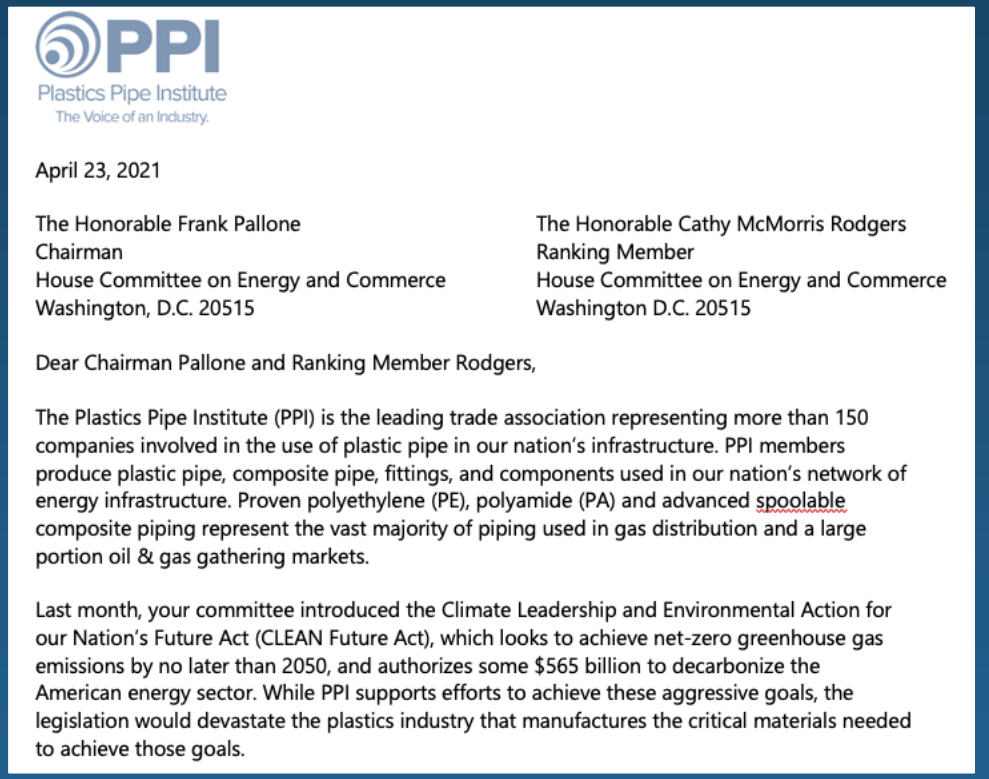
The Honorable Peter DeFazio
Chairman
Committee on Transportation and Infrastructure
United States House of Representatives
Washington, D.C. 20515

The Honorable Sam Graves
Ranking Member
Committee on Transportation and Infrastructure
United States House of Representatives
Washington, D.C. 20515

Dear Chairman DeFazio and Ranking Member Graves,

The Plastics Pipe Institute (PPI) is the leading trade association representing more than 150 companies involved in the use of plastic pipe in our nation's infrastructure. PPI members produce plastic pipe, composite pipe, fittings, and components used in our nation's network of energy infrastructure. Proven polyethylene (PE), polyamide (PA) and advanced spoolable composite piping represent the vast majority of piping used in gas distribution and a large portion oil & gas gathering markets. As the 117th Congress develops and advances legislation aimed at addressing the significant challenges facing America's infrastructure, PPI encourages policy that recognizes the important role played by natural gas in allowing for increased use of renewable energy and encourages use of the most resilient and sustainable materials available.

PPI strongly supports the Innovative Materials in American Growth and Infrastructure Newly Expanded (IMAGINE) Act (S.939.) The IMAGINE Act will help develop the materials infrastructure of the future by encouraging the research and development of new uses for existing and cutting-edge materials and techniques for modern and resilient infrastructure. PPI supports the establishment of an interagency task force chaired by the National Institute of Standards and Technology to support the research and study of innovative and resilient materials.



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The Voice of an Industry.

April 23, 2021

The Honorable Frank Pallone
Chairman
House Committee on Energy and Commerce
Washington, D.C. 20515

The Honorable Cathy McMorris Rodgers
Ranking Member
House Committee on Energy and Commerce
Washington D.C. 20515

Dear Chairman Pallone and Ranking Member Rodgers,

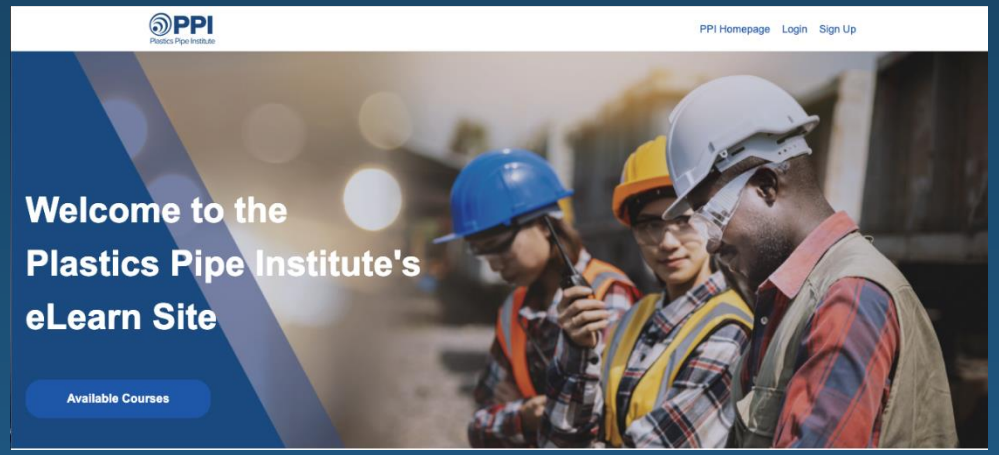
The Plastics Pipe Institute (PPI) is the leading trade association representing more than 150 companies involved in the use of plastic pipe in our nation's infrastructure. PPI members produce plastic pipe, composite pipe, fittings, and components used in our nation's network of energy infrastructure. Proven polyethylene (PE), polyamide (PA) and advanced spoolable composite piping represent the vast majority of piping used in gas distribution and a large portion oil & gas gathering markets.

Last month, your committee introduced the Climate Leadership and Environmental Action for our Nation's Future Act (CLEAN Future Act), which looks to achieve net-zero greenhouse gas emissions by no later than 2050, and authorizes some $565 billion to decarbonize the American energy sector. While PPI supports efforts to achieve these aggressive goals, the legislation would devastate the plastics industry that manufactures the critical materials needed to achieve those goals.

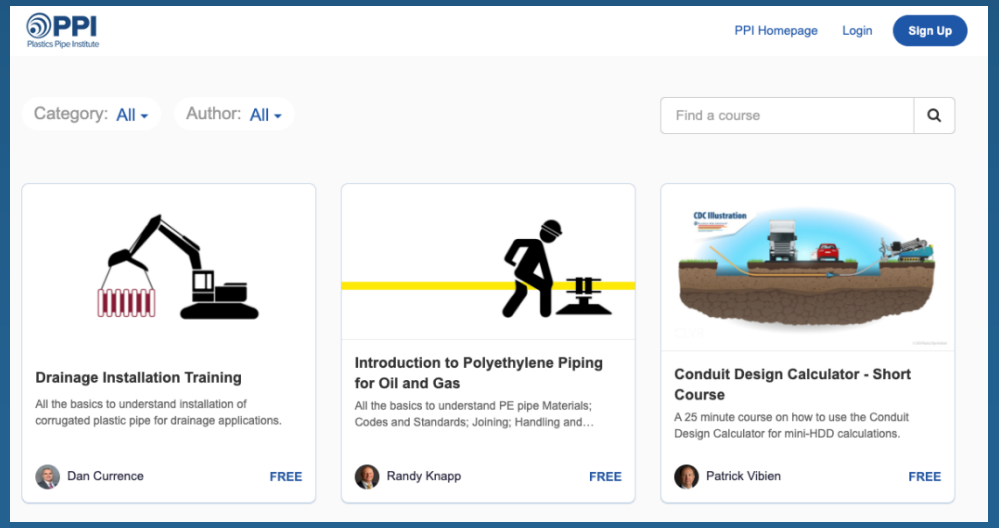
Response to Clean Futures Act (*Submitted*)

Visit: https://plasticpipe.org/energy/energy-piping-systems-governmental-affairs.html

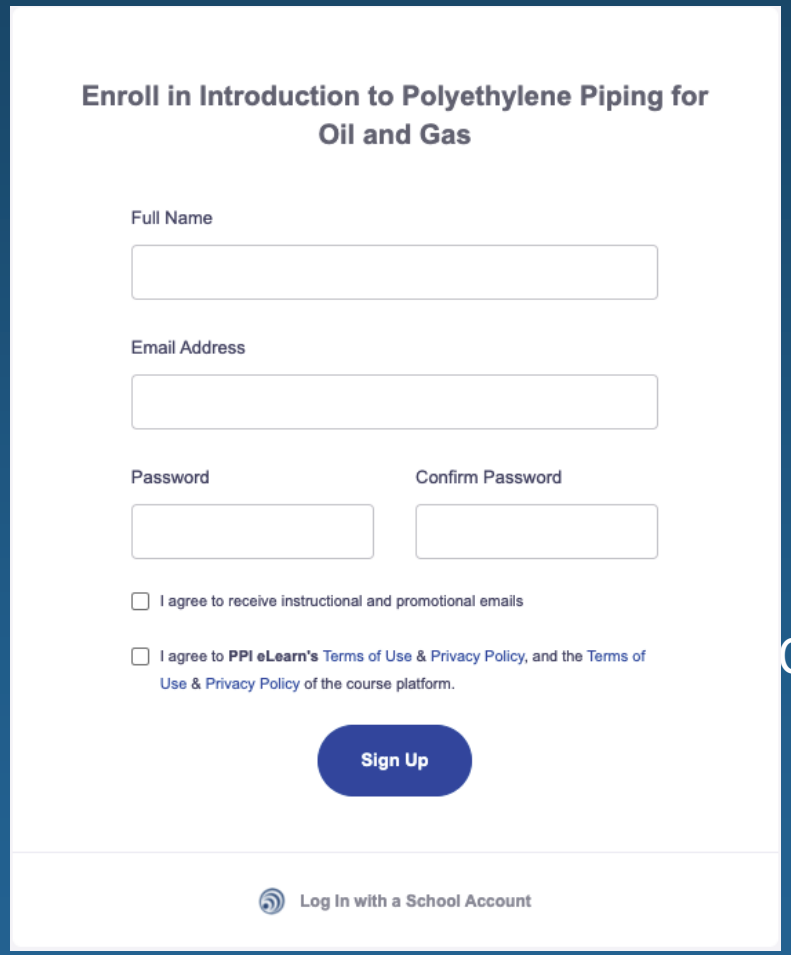
PPI's eLearn Resource



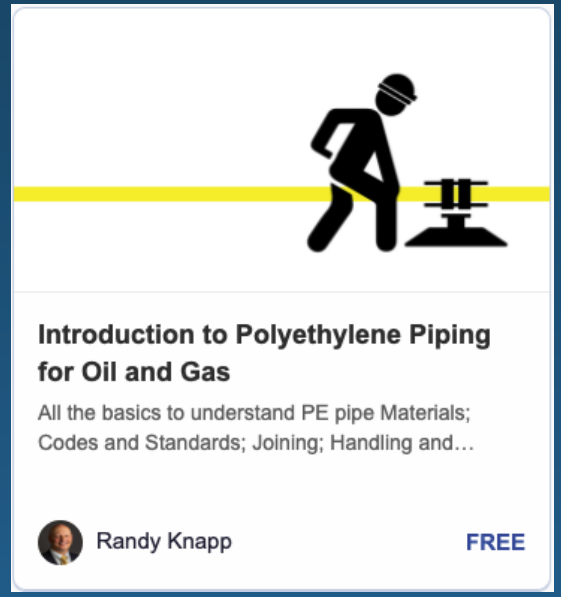
Updated eLearn Homepage



3 courses now available



New Registration Page



Over 65 students registered for Intro. to PE (w/o promotion)

Continued Importance of Pipeline Infrastructure

- **Continued Role of Natural Gas**
  - *Enables* use of renewable energy
  - Won't get to net-zero emissions by 2050 without natural gas
- **Carbon Capture, Use and Storage**
  - 5,000 miles of carbon dioxide pipelines
  - Need for more Co2 pipelines in
- **Hydrogen**
  - 1,600 miles of hydrogen pipelines
  - Blending with natural gas pipelines (20% max?)

Continued Importance of Pipeline Infrastructure - Legislation

SCALE Act

- Establish carbon-to-value R&D to support development of low and zero-carbon fuels, chemicals, building products, materials
- Low-interest grants and loans
- Funding for EPA permitting of Class VI carbon injection wells
- Grants to help States obtain well permitting and establish their own permitting programs

Hydrogen Legislation

Clean Energy Hydrogen Innovation Act: Expand definition of hydrogen projects to include:

- Infrastructure: pipelines, storage, processing and fueling
- Hydrogen for power grid generation of energy
- Production for domestic energy sources

WYMAN ASSOCIATES

Questions?

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- Stuart Saulters, APCA – ssaulters@apga.org
- John Fluharty, Quanta Services -- john@tasmacsolutions.com
- Randy Knapp, PPI – rknapp@plasticpipe.org
- Eben Wyman, DCA – eben@wymanassociates.net

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