

Hydrogen Policy Principles

The American Gas Association (AGA) believes that hydrogen production, transportation, storage, and end-use can support pathways to low-carbon energy systems and help reduce economy-wide emissions. Further, AGA believes that investment in the hydrogen value chain can be a strategy for economic development and job creation while continuing to support the end uses critical to providing energy to meet customer needs.

Hydrogen is an important fuel and energy carrier that represents a key pathway to reducing greenhouse gas emissions.

The natural gas utility industry, with its existing infrastructure and technological expertise, is poised to make significant contributions to the development of a robust, stable hydrogen market in support of goals for energy reliability and affordability, greenhouse gas emissions reductions, economic competitiveness, customer solutions, and workforce development. The potential for hydrogen production, transportation, storage, delivery and use has attracted growing investment and focus from the natural gas utility sector.

Like natural gas, hydrogen is a versatile fuel with potential applications across many economic sectors. The potential to produce hydrogen through low- and no-carbon pathways makes it a valuable form of energy storage, delivery, and use. Hydrogen is a suitable fuel for various heating and processing applications and as a feedstock for manufacturing. Therefore, hydrogen can reduce greenhouse gas and other emissions from end-use applications and provide new solutions within a lower-carbon energy system.

However, hydrogen is an energy carrier

and must be produced from other primary energy sources. There are several hydrogen production methods, each with unique energy requirements, economic considerations and environmental implications. Currently, most hydrogen utilized in the market is produced with natural gas through a reformation process. There is significant interest in emerging hydrogen production techniques, including reformation with carbon capture, hydrolysis, pyrolysis and extraction from natural sources.

Hydrogen is currently used in refineries, in producing chemicals like ammonia and methanol and in manufacturing iron and steel. There is significant and growing interest in utilizing hydrogen to decarbonize industrial process heat, transportation, power generation and building energy use.

Thoughtful and supportive policy and regulatory frameworks are vital for pursuing all practical options to reduce GHG emissions by growing the hydrogen market and helping it realize its full potential. US federal and state governments are developing hydrogen strategies and deploying incentives for hydrogen fuel production and domestic manufacturing. Policy is increasingly focused on production methods that reduce or limit the greenhouse gas emissions associated with hydrogen production.

The gas utility industry is committed to addressing the challenges to growing the hydrogen market. Above all, safety is paramount. Research shows that hydrogen blending may be possible in large portions of the gas utility network in North America at different volumes depending on the system and use case. Purpose-built infrastructure can also be designed to transport hydrogen safely and efficiently. Addressing infrastructure requirements, reducing production costs and improving efficiency across the hydrogen value chain is imperative. Other key challenges include ensuring clarity of regulatory authority to enact policies that promote low-carbon fuels at scale; reducing the economic cost of low-carbon fuels; addressing environmental concerns and uncertainty; aligning utility incentives with social policy objectives; addressing cost causation and allocation; and addressing other technical considerations.

Hydrogen is one of many potential solutions to reduce greenhouse gas emissions, and not every company will choose this pathway. However, as the gas utility industry evaluates the potential of hydrogen, it is vital to develop a set of guiding principles to ensure safe, economically viable and environmentally responsible production, storage,

POSITION STATEMENT

transportation, delivery and use of hydrogen. Natural gas utilities serve the public interest by providing essential services to homes, businesses and public facilities via the delivery of energy for heating and cooling, cooking, industrial processes, transportation fuels and power generation. The North American natural gas pipeline and storage network are critical to supporting reliable, resilient and affordable energy service choices for consumers.

AGA believes that hydrogen production transportation, storage and end-use

can support pathways to low-carbon energy systems and help reduce economy-wide emissions. Further, AGA believes that investment in the hydrogen value chain can be a strategy for economic development and job creation while continuing to support the end uses critical to providing energy to meet customer needs.

Natural gas utilities, through their existing networks and expertise in building infrastructure, can be a catalyst to scale production and demand of hydrogen. The industry is actively engaged in growing the

hydrogen market to facilitate renewable energy development and lower-carbon energy systems and to expand the potential of hydrogen to reduce emissions from end-use applications.

AGA supports developing and deploying hydrogen production, transportation, blending into the gas pipeline network, economy-wide utilization, safety management and training and hydrogen-enabled gas applications in all end-use sectors, including non-blended hydrogen distributed to end-users.

PRINCIPLES

SAFETY IS THE TOP PRIORITY

AGA supports the use and review of current hydrogen safety standards and the development of newly identified needs for additional safety standards, guidelines and appropriate regulations for hydrogen production, blending and use in the gas pipeline network, interconnection, and use in end-use applications.

EMBRACE AND INCENTIVIZE INNOVATION

Hydrogen and its related infrastructure are critical to our nation's ability to reach ambitious greenhouse gas reduction goals. AGA supports the facilitation and prioritization of research, development, demonstration, and deployment of hydrogen production, transportation, blending as appropriate, economy-wide utilization, safety management and training and hydrogen-enabled gas applications in all end-use sectors.

ENABLE CONSUMER SOLUTIONS

Natural gas utilities provide solutions to consumers to meet their energy requirements and environmental goals. AGA supports the development of hydrogen markets that enable natural gas utilities to enhance their commitment to serving their

customers with a greater array of affordable and sustainable energy options.

MAINTAIN HIGH RELIABILITY

The current natural gas and electric networks have evolved together to meet consumer needs with high reliability by leveraging the relative benefits of both energy systems. AGA supports a framework where natural gas and electric systems work together to reduce emissions while maintaining high reliability, minimizing consumer impact and creating opportunities for emerging technologies, including power-to-gas and hydrogen.

ADAPT AND EVOLVE INFRASTRUCTURE

Natural gas infrastructure should be used for renewable energy storage and the delivery of renewable gases, including hydrogen and methanated hydrogen. Moreover, gas utility systems can be a catalyst to assist in scaling production technologies and reducing costs.

SUPPORTIVE REGULATORY PATHWAYS

AGA supports regulatory policies that allow utilities to invest in and finance facilities associated with hydrogen production, processing, transport and use. Regulatory

support is necessary to enable utilities to develop hydrogen programs, offer hydrogen to customers and ensure that gas infrastructure can be adapted for renewable energy storage and delivery.

ENCOURAGE AND FOSTER PARTNERSHIPS

AGA encourages the formation of strategic partnerships among gas utilities, governments, industry, research institutions and stakeholders to accelerate hydrogen innovation. AGA supports policies that facilitate funding for research, pilot demonstrations and commercial deployment of cost-effective and efficient technologies for producing hydrogen from renewable and zero-carbon electricity sources.

LOCAL CONSIDERATIONS ARE CRITICAL

AGA recognizes that gas utility strategies to develop and serve hydrogen markets will vary and depend on regional and local considerations such as available resources, policy, rate and regulatory environments and consumer demand.



To learn more, visit

www.aga.org/climate



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 75 million residential, commercial and industrial natural gas customers in the U.S., of which 95 percent — more than 71 million customers — receive their gas from AGA members. Today, natural gas meets more than three-tenths of the United States' energy needs.