AGA
American Gas Association

September 16, 2019

On behalf of the American Gas Association (AGA), thank you for this opportunity to submit comments on New Jersey's 2019 Draft Energy Master Plan.

The American Gas Association (AGA) represents more than 200 local energy companies delivering natural gas to homes and businesses across the United States. Collectively, AGA members deliver energy to 95 percent of the natural gas customers in the U.S.; totaling more than 71 million customers. In fact, 75 percent of the homes in New Jersey rely upon natural gas for heating. The direct-use of natural gas in homes, buildings, and industry is the most efficient use of our country's abundant resource.

Natural gas has led to the steepest decline in emissions in our country's history. AGA and its members are committed to mitigating the impacts of climate change by reducing greenhouse gas emissions. We support thoughtful emissions reduction pathways that are technology and fuel neutral and seek to balance costs while ensuring a reliable and resilient energy system.

Any realistic plan for a clean and secure energy future must include natural gas as a cornerstone. Natural gas is a foundational fuel source that is clean, reliable, affordable, and safe. Further, the natural gas resources base is abundant — AGA, along with the Potential Gas Committee (PGC), found that natural gas in the United States is 20 percent higher than the 2016 assessment — the highest resource evaluation in the PGC's 54-year history — ensuring that New Jersey families and businesses can continue to rely on this necessary energy source for many generations.

Natural gas utilities are recognized as leaders in the energy industry for their successful history of reducing emissions along the natural gas distribution system – a particular point of pride for AGA members. Between 1990 and today, methane emissions from the natural gas distribution system have declined 73 percent. An impressive achievement, considering 20 million customers were added to the distribution system during this same period of time.

When developing policy designed to avoid the worst effects of climate change, New Jersey should consider a broad range of solutions that can achieve environmental goals while also addressing energy affordability, safety, security, reliability and resiliency objectives. All solutions must be considered. However, in recent years, there has been an unfortunate shift in the types of policies proposed to reduce emissions. Often, states and municipalities hinder their ability to succeed by considering only a single pathway of electrification in their pursuit of greenhouse gas emission reduction goals. While policy-driven electrification has been discussed in multiple venues, there has been little or no analysis on overall costs, benefits and market implications of such policies. When considering climate policies and lower carbon pathways, New Jersey should clearly understand:

- The market challenges associated with the pathway's key assumptions for achieving emissions reductions,
- The impact on consumer choice and cost,

Karen A. Harbert *President & CEO*

400 N. Capitol St. NW, 4th Floor, Washington, DC 20001 **P** 202-824-7111 **F** 202-824-9111 **E** kharbert@aga.org **www.aga.org**

- The impact on current energy infrastructure assets and the required build out of new energy infrastructure assets,
- The impact on the ability to deliver energy reliably even on cold or stormy days, and
- How the cost of emissions reductions compares to other lower carbon pathways.

In 2018, AGA engaged a cross-functional team of experts at ICF to assist in the evaluation of policy-driven electrification of the U.S. residential sector. The study, Implications of Policy-Driven Residential Electrification, identified numerous challenges including:

- Cost effectiveness
- Consumer Impacts
- Transmission capacity constraints of the existing electrical system
- Current and projected electric grid emissions levels
- Requirements for new investments in the power grid to meet growth in peak generation demand during winter periods

The study found that a policy targeting the electrification of the U.S. residential sector would result in a small fraction of greenhouse gas emissions reductions; could be financially burdensome to consumers; could have profound impacts and costs on the electric sector; and could be a very costly approach to emissions reductions.

Alternatively, integrating natural gas solutions in a more diverse approach to achieve emissions reduction goals would help meet growing energy needs; provide customers more choices; and improve affordability, reliability and comfort. Many innovative natural gas technologies are available today in the residential and commercial sectors. These technologies offer a significant efficiency improvement potential which can contribute to achieving near-term emissions reductions. At the same time, natural gas utilities are working with policymakers to enhance energy efficiency programs designed to reduce energy consumption and emissions. Emission reductions are also being realized through pipeline safety driven infrastructure modernization. Looking ahead, increased funding for research, development, and deployment of next-generation natural gas technologies and advancing renewable sources of gas supply provides further opportunities for achieving lower carbon goals.

Greenhouse gas emissions from natural gas customers have declined rapidly as more energy efficient appliances, consumer conservation, and tighter building envelops have reduced energy demand. In fact, the average residential gas customer's CO2 emissions have been cut in half since 1970, a downward trend that is expected to continue, and largely a result of utility efficiency programs. Nationally, natural gas utilities are spending $4 million a day on energy efficiency programs. New Jersey natural gas utilities have consistently been a national leader in energy efficiency investing upwards of $100 million annually in efficiency programs.

As New Jersey works to refine its Energy Master Plan, natural gas utilities must be recognized for their ongoing contributions to lowering emissions nationwide, and smart policy will account for this work, while leveraging the existing pipeline network to support utilities in their mission to further drive down emissions. To that end, many natural gas utilities are looking toward renewable and lower sources of carbon-based fuel to reduce emissions and lower the carbon footprint of their customers. Renewable natural gas provides one such opportunity.

Renewable natural gas (RNG) is pipeline compatible gaseous fuel derived from biogenic or other renewable sources that has lower lifecycle CO2e emissions than geological natural gas. It can come from a variety of sources including, wastewater treatment facilities, landfills, agriculture and farming operations. These examples use anerobic digestion technology to harness the biogas generated through the natural decomposition of waste. The gas is captured, processed and cleaned, and can be injected into the natural gas pipeline system. Anerobic digestion is a well-established production technology with over 100 facilities in operation throughout the U.S. and Canada. And due to the growing demand for RNG, another 90 projects are currently under development.

Since Renewable Natural Gas can be used interchangeably with today's natural gas, it represents a tremendous opportunity to reduce emissions in homes, businesses, vehicles, manufacturing and heavy industry. We expect that emissions reduction potential to grow as new technology for producing RNG is commercialized. Thermal gasification and power-to-gas are two new and promising methods to produce RNG. Thermal Gasification recycles low-moisture carbon-based materials such as crop waste and forestry residue by subjecting them to high-pressure, thereby, producing a series of synthetic gases including methane, which can be captured and blended into the natural gas system.

Power-to-gas relies upon excess or curtailed renewable electricity, which is used to produce hydrogen via electrolysis. The hydrogen can be methanated with a source of carbon to produce renewable natural gas, and injected in to the natural gas pipeline system providing a long-term storage solution for excess renewable electricity, an option that today's battery technology cannot provide. While this technology is not yet fully commercialized, several pilot projects exist in Europe, and in the U.S. a research and demonstration power-to-gas project has been operating for several years at the National Renewable Energy Laboratory in Golden, Colorado.

The facts are clear - demand for renewable natural gas is real and growing. In the transportation sector alone, demand has risen more than 500% in the last 5 years. In the utility sector, more and more natural gas utilities are exploring RNG as another tool to reduce emissions. Today, 15 states have considered legislation or regulatory proposals to promote the use of RNG in residential and commercial markets. Moreover, there are now 8 natural gas utilities across the country that are developing or have implemented voluntary green energy tariffs to enable their customers to purchase RNG. As the national association, AGA expects this trend to continue as more of our members' customers demonstrate a growing interest in renewable natural gas.
Importantly, each state or gas utility has taken a unique approach in devising a legislative or regulatory framework to encourage the use of RNG. Some states have supported a utility's ability to procure and sell renewable natural gas to customers that want it, passing along those costs to customers that elect into the program. This is similar in concept to customers that opt-in to purchase renewable electricity from their electricity provider. Alternatively, some utilities are seeking to procure RNG as a percentage of their contracted supply, effectively reducing the carbon footprint of the fuel delivered within their service territory.

As new markets develop, and demand for RNG continues to grow, states can support these developments through innovative rate mechanisms and policy proposals. Some utilities have pursued voluntary RNG tariff programs, while others are seeking to blend RNG into their gas

portfolio. Within these states, utilities, legislatures and regulatory commissions alike are recognizing the opportunity to leverage existing infrastructure to deliver new products like RNG. In New Jersey residents have invested billions of dollars into the state's safe and reliable natural gas infrastructure system. While demand for natural gas continues to grow, emissions continue to decline. We urge New Jersey to consider its natural gas pipeline delivery system as a critical resource, capable of evolving to meet the changing needs of a lower carbon economy. Leveraging this existing energy infrastructure to deliver new, lower carbon sources of fuel, creates an inherently more reliable and more resilient energy system.

AGA believes that ongoing efforts to modernize natural gas distribution systems and to enhance pipeline safety can be used to continue the downward trend in methane emissions. Natural gas is delivered to customers through a safe, 2.5-million-mile underground pipeline system. The distribution infrastructure has been constructed over time using construction methods and materials available at the time — including cast iron, bare steel and copper. Today, gas utilities install cathodically protected steel and modern polyethylene (PE) plastic pipe. Cast iron and unprotected steel distribution main are legacy assets that have long been recognized as warranting attention in terms of management, replacement and/or reconditioning.

AGA has long been on the forefront of advocating for responsible infrastructure enhancement. The AGA Board of Directors has consistently designated pipeline safety as the top priority of its member companies. In Section 7 of the Pipeline Safety, Regulatory Certainty, and Job Creation Act of 2011, Congress directed the Secretary of Transportation to develop a report on the national cast iron inventory and the progress being made by owners and operators in implementing management and replacement plans for that inventory. Secretary LaHood's "Call to Action" has been met head on. Long before 2011 there has been a growing effort underway to accelerate the replacement of pipelines no longer fit for service, and AGA and its members are committed to that effort. Since 1990, modern plastic pipelines have increased by 214 percent and cast-iron pipelines have decreased by 58 percent. According to the Department of Transportation, from 2005 to 2018 cast and wrought iron distribution main mileage has decreased by 42 percent and the number of cast or wrought iron service lines has decreased by 79 percent.

Pipeline replacement has resulted in meaningful emissions reductions while providing enhanced system reliability and security even as the natural gas distribution system continues to grow. In 2014, AGA released Guidelines for Reducing Natural Gas Emissions from Distribution Systems. The first measure recommends accelerating the replacement of cast iron and unprotected steel pipes to modernize the natural gas distribution system and realize important emissions reductions. A Washington State University study found that in 2015 the number of pipeline leaks has decreased between 25 and 16 percent for pipeline mains and services, respectively, due to the use of better pipe materials, efforts to seal cast iron joints, and enhanced leak detection and repair procedures. The study surveyed AGA local distribution companies and found substantial cast-iron pipe replacement and joint-sealing activities being carried out.

Transportation by pipeline is the safest form of energy delivery in the country. In cases of extreme weather, underground natural gas distribution systems are far less susceptible to damage and long-term outages. The best way to prepare for these events is to "harden" the

pipeline distribution system. One of the best ways to harden the infrastructure is to replace cast-iron low-pressure pipes. Natural gas utilities invest $824 every second of every day on enhancing the safety of natural gas distribution and transmission systems. Overall, cast iron mains make up less than 3 percent of the distribution mileage and continues to decrease annually. As utilities increasingly modernize their distribution systems, pipelines are becoming more resilient in order to provide customers with safe, reliable energy. Importantly, accelerated investment in pipeline infrastructure has also resulted in deep reductions in greenhouse gas emissions. Natural gas utilities have made enormous strides over the last decade to secure and improve the natural gas distribution system. AGA and its members will continue to strive for efficiency in the natural gas distribution system while focusing on safety, emissions reductions, and enhanced resiliency.
The use of natural gas offers GHG emissions reduction as well as affordable, reliable energy. Policy that limits fuel sources and cherry-picks technologies presents a challenge for the industry to continue its work reducing emissions and building resilient and reliable energy infrastructure. Localized efforts to ban natural gas in new low-rise buildings and homes only serve to increase the cost of energy and reduce efficiency for consumers. Any proposed natural gas ban is misguided and detracts from the real goal: reducing greenhouse gas emissions.

Single pathway solutions, such as electrification of the residential sector, are counterproductive and pose significant challenges to addressing every facet of climate change in a practical manner. Not only is the feasibility of this pathway tenuous at best, research suggests the electric capacity needed to support winter heating in the residential sector would double electric demand, requiring massive new investments in electric grid generation, transmission and distribution capacity. Residential customers too would be significantly impacted. Household energy costs would increase by an average of 71 percent annually over the lifetime of the appliance equipment.

In order to maximize GHG emission reductions New Jersey should mobilize every tool at its disposal, including recognizing the contributions natural gas has made to emissions reductions. The industry continues to develop new and innovate technologies to improve safety and reduce emissions: new pipelines, new leak detection technologies, direct-use technologies to improve efficiency, and renewable natural gas. Banning an entire fuel source is ultimately a set-back for climate activism as it limits the opportunity to use existing resources and infrastructure to achieve emissions reductions.

Natural gas pipelines transport one-fourth of energy consumed in the U.S. and are essential to the communities they serve. Streamlined permitting could accelerate the replacement of cast iron and bare steel distribution pipe, enhancing safety of the system and reducing emissions. However, current permitting processes and delays at the federal and state level are prohibiting affordable and reliable natural gas to reach communities along the eastern seaboard.

Impeding infrastructure for natural gas does not impede the need for natural gas energy. Natural gas heats home and keeps low-income families warm for the winter, saving 11,000 lives — mainly due to affordability according to the National Bureau of Economic Research. However, permitting delays are preventing this low cost and clean energy to reach residents that need it most. Quite often, these homes will rely on heating fuel oil during the winter, leading to increased emissions and air pollutants.

The American Gas Association and its members are committed to reducing emissions through the smart and efficient use of our nation's abundant natural gas resources. As a result of our industries current efforts, by 2035 direct residential natural gas use will account for about 4 percent of total GHG emissions, and the sum of natural gas, propane, and fuel oil used in the residential sector will account for about 5 percent of total GHG emissions.

By integrating natural gas solutions into long-term resource planning, utilities can help states and localities achieve emission reduction goals and position themselves toward a cleaner energy future. Through the expanded development of advanced natural gas technologies and renewable natural gas, a steep decline in emissions can be realized in a more cost-effective manner, that also preserves consumers' preference for natural gas.

Many take for granted the advancements underway in the natural gas industry, but innovation is at the core of everything we do. Whether it's advancements in leak detection and pipeline replacement, or developing next generation gas appliances, or lowering the carbon content of the fuel flowing through our pipes – innovation is happening at every step.

We look forward to sharing more about how natural gas utilities and our nation's pipeline infrastructure currently plays and will continue to play an integral role in reducing greenhouse gas emissions. Thank you for the opportunity to share how the natural gas energy delivery network can help provide a clean, low carbon fuel to more New Jersey residents.

Sincerely,

Karen A. Harbert
President & CEO
American Gas Association