



March 22, 2021

Kathleen Theoharides, Secretary
Executive Office of Energy and Environmental Affairs
100 Cambridge Street, Suite 900
Boston, MA 02114

Dear Secretary Theoharides:

The Northeast Gas Association (NGA) is appreciative of the opportunity to provide comments on the Clean Energy and Climate Plan for 2030 (CECP), released by the Executive Office of Energy and Environmental Affairs (EEA) on December 30, 2020. EEA invited stakeholder comment on the proposed plan; NGA is pleased to offer comments on several specific elements of the CECP.

NGA is a trade association based in Needham that represents natural gas interests in the Northeast region of the United States – including Massachusetts. Notably for the CECP, the local distribution natural gas companies in the Commonwealth deliver natural gas to 1.7 million customers – from homes and businesses to schools, hospitals and power plants.

Natural gas currently fuels over half the Commonwealth's households and over half of its power generation. It is an affordable and reliable energy source for residences and businesses, and its growth in the state has enabled substantial reductions in air emissions. The ongoing investments in the replacement of older natural gas system infrastructure, facilitated by the Legislature and overseen by the Department of Public Utilities (DPU), has also resulted in reduced methane emissions in the state.¹ Progress in that regard continues today.

We recognize that more needs to be done by our industry and others to meet the expectations of our customers and stakeholders for meeting the climate change challenge. The proposed 2030 plan is ambitious and challenging, but it provides a necessary framework for understanding the evolving energy and environmental structures in the Commonwealth. The CECP's emphasis on a "people-centered approach to reducing GHG emissions in ways that help close the health and economic disparities experienced in Environmental Justice communities" is welcomed and serves as an example of the Commonwealth's leadership on addressing important economic and social justice issues. Sensitivity to cost impacts of public policy decisions on citizens and businesses is an important bedrock element of any clean energy transition.

¹ We further note that the Massachusetts Department of Environmental Protection ("MassDEP") has undertaken initiatives regarding reductions in methane emissions with targets specifically geared towards the electric generation and natural gas distribution sectors.



The natural gas industry remains committed to being part of the solution to achieving a clean, reliable and affordable energy system. To that end, the natural gas utilities in the state are actively working to reduce the carbon content of their systems – through increased efficiency, the incorporation of renewable natural gas (RNG) and hydrogen, and through the replacement of older pipe components, such as cast-iron and bare steel. We are also looking at how to incorporate geothermal and heat electrification in areas where it benefits our customers and systems. In our comments below, we address some of the opportunities for continuing this progress, and emphasize the importance of affordability and reliability in the Commonwealth’s future energy system. NGA maintains that natural gas has a continuing essential role in helping the Commonwealth advance along the path to a cleaner energy system that is also reliable and affordable.

Importance of Energy Efficiency, including Natural Gas Efficiency, as First and Best Option

The CECP emphasizes the importance of deep building efficiency retrofits as a central least-cost decarbonization solution.

Energy efficiency has been a key part of the Commonwealth’s energy and environmental planning for over twenty years, and has been a national success story. Massachusetts remains a leader in both electric and natural gas efficiency programs, and we believe that the CECP’s continued emphasis on efficiency is critical to future progress. The most recent annual state efficiency study by ACEEE, released in December 2020, observes that Massachusetts spent the second-highest amount in gas efficiency program funding, behind only California, and spent the highest amount of any state in the nation in terms of dollars per residential customer. The commitment to these types of deep and sustaining efficiency investments help consumers save on their energy bills while also maximizing the use of the existing natural gas distribution system. The emphasis on efficiency investments as the first and best option for the Commonwealth to advance toward its overall 2030 energy system goals is one we fully support. “Efficiency first” is a sensible concept and practice.

Building Sector Transformation: Opportunities and Challenges; Mitigating Impacts on Energy Affordability

As the Commonwealth moves to decarbonize the building sector among other areas of the economy, we urge EEA to be sensitive to customer choice and energy and housing affordability for residents and businesses. We are concerned by the potential limitation on residential and commercial energy and heating systems through implementation of municipal stretch goals with net zero requirements.

Governor Baker’s proposed amendments to S.9, released to the Legislature on February 7, 2021, suggested a pathway forward on how this issue should be framed going forward. The Governor suggested finding a balance for how the high-performance stretch code will be introduced, and called for a follow-up regulatory process with significant stakeholder input to consider this important topic. The Governor noted that he is sensitive to the potential cost implications of this transition. We appreciate the Governor’s proposed approach to finding a measured, achievable, practicable and cost-sensitive analysis.

The natural gas industry remains committed to working with the state and all interested stakeholders on improving the energy and environmental performance of the building sector. As the CECP notes,

“emissions in residential and commercial buildings have generally trended downward since 1990 with the deployment of energy efficiency measures.” As stated earlier, we support additional expansion of gas efficiency programs to continue improvements in building envelopes.

Section 3.2 of the CECP details the potential of focusing in this current decade on achieving “very significant reductions from buildings using high-emitting petroleum-based heating fuels: fuel oil and propane.” The CECP goes on to note that “transitioning the building sector in a strategic and least cost manner is challenging.” The CECP further states on page 28 that “transitioning to a heat pump HVAC system will have varying impacts on consumer energy costs” and that households “currently using natural gas for heat may see marginal cost increases in the near term that in most cases can be fully offset by future operating costs savings.”

We have serious concerns about the likely cost impacts to residents through limiting customer choice to only heat pump HVAC systems in the future. Natural gas has grown to be the largest energy source for home heating in the Commonwealth over the last decade, due to its lower cost and affordability, its reliability, and its strong environmental performance vis-a-vis other fossil fuels such as oil and propane. The U.S. Energy Information Administration (EIA), in its 2021 Annual Energy Outlook released on February 3, 2021, projects that natural gas is by far the most affordable residential energy source throughout the forecast period (through 2050) (See Table 3.1 in reference case tables: https://www.eia.gov/outlooks/aeo/tables_ref.php).

The costs and practicality of electrification remain a concern even as we agree that we all need to strive to transform the building sector. The conceptual approach to a cleaner energy future needs to be thoughtful and mindful of affordability and system reliability, among other critical criteria.

Several studies released by ACEEE in recent years identify value in converting homes heated with heating oil and propane to electricity, but find less benefit in converting natural gas homes, especially in colder climates. In 2018, ACEEE observed: “For the residential sector, recent ACEEE research has found that some applications (oil- and propane-heated homes and homes in the South) can meet the criteria for beneficial electrification discussed above. For these applications it can make sense to electrify the next time a heating or cooling system or water heater needs to be replaced. But for many homes, electrification may not currently make sense and as a result, natural gas use will likely continue for decades, particularly in the North.” Two years later, ACEEE still concluded in a report on electrification efforts at the state level that “[i]n areas with high use of delivered fuels (fuel oil and propane), many programs target customers using these fuels because the economics of electrification in these situations are often better than when displacing natural gas.”

NYSERDA has reached similar conclusions in its look at the economic value proposition for customers in adopting heat pumps. The “New Efficiency: New York - Analysis of Residential Heat Pump Potential and Economics,” assessing the potential of residential heat pumps, noted that “generally, installations replacing natural gas have negative IRRs.”

We recognize the challenge and sense of responsibility faced by state government with these major sectoral transformations envisioned in the CECP. We acknowledge the appropriate action proposed in the CECP on page 32, where EEA states that “by 2023, the Commonwealth will impose a long-term, declining caps on heating fuel (gas, oil, propane) emissions.” All energy industries need to meet the

challenge to reduce emissions in their operations and processes and we in the natural gas industry recognize our responsibility as well. We appreciate the state recognizing in Table 4 the opportunity presented by such goals as pipeline natural gas reducing its carbon intensity by 5 percent. Incorporating RNG and hydrogen blending are options for the natural gas industry to consider as measures to achieve these carbon reductions, along with greater efficiency.

The challenge is great. Approaching this transformation requires careful balancing by all stakeholders of the opportunities and the potential risks in terms of higher costs and reduced system reliability.

Importance of Energy Affordability and Economic Equity

The CECP rightly emphasizes the importance of energy affordability, so particularly important in this challenging time of a pandemic and economic difficulty. Natural gas has been and remains the lowest cost heating option for most households in the Commonwealth, and going forward can help alleviate and/or mitigate economic burdens on residences and businesses in this era of energy transition on which we are embarking.

RNG and Hydrogen Opportunities and the Viability of a “Decarbonized Gas” Pathway

In the CECP at page 27, EEA notes the pathways to a Net Zero future. While EEA supports the deployment of electrification, it includes what it characterizes as a “higher-risk, higher cost ‘decarbonized gas’ scenario.” The risks and costs EEA focuses on are GHG reductions. They do not seem to recognize other risks and cost implications of an all-electric future, such as higher overall energy system costs and the potential for reliability concerns by betting the future on one pathway alone. We urge the Commonwealth to consider a full range of scenarios to reflect more fully the potential for risks and cost shocks to the energy and overall economy.

The “decarbonized gas” pathway that EEA cites would include the “continued use of natural gas, hydrogen, and renewable gas combustion for building services” (CECP at page 27). We feel that this pathway has considerable potential upside for the Commonwealth, particularly in light of the advances being made in the region and in the U.S. in terms of incorporating such resources as RNG. NGA released a major study in 2019 with GTI on the system incorporation of RNG. The study shows that RNG is a supply opportunity that also brings considerable environmental benefits. We encourage EEA to consider even more broadly the incorporation of RNG and hydrogen blending as well, as viable opportunities to assist in the overall decarbonization of the state’s energy supplies.

Transportation Sector: CNG and LNG as Fuel Options for Medium and Heavy-Duty Vehicles

Section 2 of the CECP addresses the transportation sector. As the largest source of GHG emissions in the Commonwealth, the CECP aggressively focuses on transforming the vehicle fleet with a more rapid deployment of electric vehicle (EV) technology. The plan notes that “there are still significant obstacles to achieving widespread EV deployment in Massachusetts.” We would suggest that EEA consider the potential for the inclusion of compressed natural gas (CNG) and liquefied natural gas (LNG) as lower-emission fuels that better serve the medium and heavy-duty vehicle market, particularly over the next decade. We are surprised that the transportation sector analysis is limited only to EV technology. The potential for hydrogen vehicles is also not addressed in the CECP, except for a brief footnote on page 19.

Hydrogen is currently used in the transportation sector as a vehicle fuel, notably in California, albeit on a limited basis. There are a few hydrogen fueling stations in the Northeast region, and there is interest in establishing a "Northeast hydrogen roadmap." We would recommend that the final draft consider incorporating the potential of CNG, LNG and hydrogen as fuel options, especially for the non-passenger vehicle sector, and especially within the timeframe of 2021 through 2030.

Another transportation fuel source not noted in the CECP is RNG itself. In a recent paper on the use of RNG in the transportation sector, the Argonne National Lab of the U.S. Department of Energy noted: "States are beginning to incentivize the use of RNG. In October 2019, the California Air Resources Board amended the state's Heavy-Duty Vehicle Incentive Program, which subsidizes the replacement of older, higher-polluting vehicles with cleaner alternatives...Several other states are encouraging utilities to offer RNG to their customers to help meet state climate goals. Increasingly, communities and businesses view RNG as a key tactic for meeting their sustainability goals and demonstrating their commitment to GHG reduction." A link to the Argonne paper can be found here:

https://www.anl.gov/sites/www/files/2020-11/RNG_for_Transportation_FAQs.pdf

Reducing Methane Emissions in the Natural Gas Sector

The CECP states, on page 46, that "methane leaks from the natural gas distribution sector are substantial, but are being reduced significantly because of existing policies, most notably MassDEP's Reducing Methane Emissions from Natural Gas Distribution Mains and Services regulation (310 CMR 7.73)."

This reduction in methane emissions has been significant, due in large part to the efforts of the Legislature, along with the coordinated efforts of EEA and its agencies (the DPU and MassDEP), for their foresight in enacting legislation in 2014 that resulted in the establishment of the GSEP program to manage increased annual gains in the replacement of older system components utilizing cast-iron and bare steel.

Methane emissions related to U.S. natural gas systems have declined by 16.7 percent since 1990, according to the U.S. EPA's draft 2019 national GHG inventory report released in February 2021. At the same time, methane emissions from the gas distribution system have declined by over 60 percent. The report notes: "Distribution system emissions, which accounted for 9 percent of CH₄ emissions from natural gas systems and less than 1 percent of CO₂ emissions, result mainly from leak emissions from pipelines and stations. An increased use of plastic piping, which has lower emissions than other pipe materials, has reduced both CH₄ and CO₂ emissions from this stage, as have station upgrades at metering and regulating (M&R) stations. Distribution system CH₄ emissions in 2019 were 62 percent lower than 1990 levels and 1 percent lower than 2018 emissions. Distribution system CO₂ emissions in 2019 were 69 percent lower than 1990 levels and 1 percent lower than 2018 emissions."

Massachusetts has seen a considerable decline in methane emissions related to natural gas systems. The MassDEP's GHG emissions inventory shows that methane (CH₄) emissions from natural gas systems declined by 67 percent from 1990 to 2018.

This progress will continue, enhancing system resiliency and reducing system emissions on an approved timetable done in coordination with state regulators and local municipalities.

Natural Gas and the Power Sector in New England

Power generation in Massachusetts and New England relies for half of its generation capacity on natural gas. The CECP envisions sharply reducing that percentage through the addition of state procurements for offshore wind and Canadian hydro, as well as in-state solar and efficiency. The CECP further envisions a fully transformed electric grid facilitated by enhanced regional planning and greater coordination among the states on policy preferences.

As the Commonwealth looks to dramatically reduce the use of natural gas in power generation, it is important in our view to reflect on the values that natural gas brings to the regional power system.

The comparative advantages of natural gas power generation include higher efficiency, lower heat rate, and reduced air pollutant emissions compared to other fossil fuels.

The rise in natural gas use in power generation has led to lower air emissions, from sulfur dioxide to carbon dioxide. In November 2020, U.S. EIA noted: "U.S. electric power sector emissions have fallen 33 percent from their peak in 2007 because less electricity has been generated from coal and more electricity has been generated from natural gas (which emits less CO₂ when combusted) and non-carbon sources."

At the regional level, the same dynamic is in play. ISO-NE reports that since 2001, emissions from power plants in New England dropped by 99 percent for sulfur dioxide (SO₂), 78 percent for nitrogen oxides (NO_x), and 42 percent for CO₂.

Natural gas generation also increases average plant efficiency. As noted by EIA in July 2020, "[i]n recent decades, the U.S. electric power grid's fuel mix has shifted from mostly coal to a more diverse selection of fuels, including natural gas and renewable energy. In particular, the shift toward newer, more efficient natural gas-fired power plants with combined-cycle generators has resulted in an increase in the average efficiency of fossil fuel-fired electric power plants and in lower levels of overall conversion losses."

As other fuel sources have retired from the regional grid in recent years, including nuclear, coal and oil, natural gas has increased its share, supporting overall system reliability. In Massachusetts, several new gas generation units have come online in recent years, including: (1) the 674 MW Salem Harbor station in Salem (June 2018); (2) the 333 MW single-cycle unit added to NRG's Canal 3 Generating Station in Sandwich (June 2019); and (3) the 200 MW peaker at Exelon's plant in Medway. These plants help the state and region in ensuring a stable, affordable and lower-carbon electric system.

Looking ahead it is clear that policymakers in the state and the region are seeking to reverse the role of natural gas in power generation. In our view, the states should proceed with prudence and with a clear-eyed view of the benefits that natural gas generation offers. As the U.S. EIA noted in August 2020:


Natural gas is a key power generation resource because it has the flexibility to supply electricity at any time, including at times of peak demand. In contrast, some renewable energy technologies and nuclear power plants may be nondispatchable and not able to

adjust their generation to meet load. For example, nuclear power plants may already be running at or near maximum capacity and may be unable to respond to shifts in load.

As the state moves to more broadly deployed strategic electrification, the electricity being drawn up will likely be generated by natural gas-fired generating facilities for many years to come. This is not a lamentable situation in our view. Indeed, the availability of natural gas generation provides a secure "glide path" for the power grid as its transformation unfolds.

Thank you for the consideration of our comments. As the Commonwealth continues its progress in moving towards a low-carbon economy with increasing reliance on renewables and clean energy technologies, we believe that natural gas will remain a key sustaining part of the state's energy portfolio. We look forward to working together on creating a reliable, affordable and clean energy future for the Commonwealth.

Very truly yours,

A handwritten signature in black ink that reads "Thomas M. Kiley". The signature is fluid and cursive, with a large, sweeping initial 'T'.

Thomas M. Kiley
President and CEO