American Petroleum Institute
Northeast Region

June 29, 2022

Climate Action Council
Draft Scoping Plan Comments
New York State Energy Research and Development Authority
17 Columbia Circle
Albany, New York, 12203-6399

IN RE: Comments Relative to Climate Action Council Draft Scoping Plan[1]

The American Petroleum Institute[2] (API) appreciates this opportunity to provide comments to the Climate Action Council (CAC and Council) on its draft scoping plan that recommends policies and actions to help New York meet the climate goals laid out in the Climate Leadership and Community Protection Act. (CLCPA). These comments will focus on the plan's recommendations related to the electricity and buildings sectors as well as the transportation sector.

New York's ambitious CLCPA, which requires the state to reduce greenhouse gas emissions at least 85 percent by 2050, has the stated goal to "empower every New Yorker … and provide the opportunity to improve all our daily lives."[3] API believes that the best way to empower New Yorkers is to implement energy policies that are measured and prioritize *efficiency*, *reliability* and *affordability*.[4]

API and our member companies are committed to working with regulators and policymakers to deliver solutions that reduce carbon emissions while meeting society's growing energy demands. API believes that prudent energy and environmental policy recognizes that many different forms of energy will be needed for decades to come.[5] *Efficient, affordable and reliable* energy is essential to sustaining the global economy and the wellbeing of all.

A Measured Approach

Consistent with the goal of empowering every New Yorker, API believes that a measured approach is one in which all voices and perspectives are heard, resulting in policies that allow stakeholders to compete on a level playing field to

[1] Electronically submitted, hard copy mailed to NYSERDA, Attn: CAC Draft Scoping Plan Comments, 17 Columbia Circle, Albany, NY, 12203-6399.

[2] API represents all segments of America's natural gas and oil industry, which supports more than eleven million U.S. jobs and is backed by a growing grassroots movement of millions of Americans. Our 600 members produce, process and distribute the majority of the nation's energy, and participate in *API Energy Excellence*, which is accelerating environmental and safety progress by fostering new technologies and transparent reporting. API was formed in 1919 as a standards-setting organization and has developed more than 700 standards to enhance operational and environmental safety, efficiency, and sustainability

[3] *See* https://climate.ny.gov/-/media/CLCPA/Files/CLCPA-Fact-Sheet.pdf.

[4] The natural gas and oil industry, including petrochemical and plastics, supported more than 391,000 jobs, or 3.1 percent of New York's total employment in 2018. Update. The industry provided more than $37.7 billion in wages and contributed $63.6 billion to the state economy. The United States has reduced carbon dioxide emissions to generational lows since 2000, leading the world in emissions reductions, thanks in large part to greater use of natural gas in electricity generation and advancements in technology and innovation. Many of these emission reductions are a result of natural gas replacing coal-fired power plants.

[5] *See* https://www.eia.gov/todayinenergy/detail.php?id=51558.

meet the state's vast energy needs while achieving its ambitious environmental goals. As the state considers various energy and climate policies, they must do so with the goal of enriching New Yorker's lives through policies which are both effective and not burdensome to the taxpayer and consumer. Below are several points which may aid in determining the efficacy of certain proposed policies.

API is concerned that the proposed policies to eliminate natural gas use in new building construction, incentivize thermal electrification, ban the sale of internal combustion engine vehicles, and rapidly change the state's electricity supply are economically inefficient, remove consumer choice, and may result in increased consumer costs and an overreliance on an aging electric grid. Additionally, these policies may fail to adequately reduce emissions.

Natural Gas Has Provided Emission Reduction Benefits

Decarbonization efforts should be undertaken in a technology neutral manner that incentivizes emission reductions rather than favoring specific energy sources. Natural gas has a proven track record of facilitating carbon dioxide (CO_2) emissions reductions in all sectors of the economy. It is essential for home heating in New York, with three out of five households using natural gas.[6]

Over the last two decades, the steady decline in the carbon intensity of New York's energy supply has coincided with increasing use of natural gas across the residential, commercial, electricity, and industrial sectors. Between 2005 and 2018,[7] the state's carbon intensity fell by 14 percent[8] while natural gas consumption rose by 24 percent.[9] In the residential and commercial sectors, carbon intensity fell more than 20 percent during that same period as New Yorkers increasingly chose cleaner-burning natural gas for heating and cooking.[10]

API believes that consumers should retain the ability to choose how to fuel their homes and businesses, particularly in light of the CO_2 emission reductions that have been facilitated by increased natural gas usage. Available and reliable energy sources such as natural gas can help curb emissions while allowing for growth.

The New York Independent System Operator (NYISO) – the non-profit entity that operates the state's power grid agreed with this assessment – noting in a recent post on its website that "limiting options at the start of the transition could actually stifle progress toward our climate goals and produce higher emissions along the way."[11]

[6] *See* https://www.eia.gov/state/?sid=NY.

[7] The most recent year for which emissions data is available from the U.S. Energy Information Administration.

[8] EIA. Energy-related CO_2 Emission Data Tables, Table 7: Carbon intensity of the energy supply by state (1990-2018). *See* https://www.eia.gov/environment/emissions/state/.

[9] EIA. Natural Gas Consumption by End Use. *See* https://www.eia.gov/dnav/ng/ng_cons_sum_dcu_sNY_m.htm.

[10] EIA and API analysis.

[11] *See* https://www.nyiso.com/-/how-a-natural-gas-moratorium-could-cause-bumps-in-the-road-to-an-emissions-free-grid.

The Perils of Bad Energy Policy

The experiences of California provides insight as to how bad energy policy can negatively impact consumers in terms of reliability and cost. The state enacted an aggressive renewable portfolio standard that prioritized the development of certain types of resources rather than the reduction of carbon emissions. Additionally, state regulators effectively halted the development of new gas-fired plants and directed utilities to close some coastal gas-fired electric generation facilities. These actions contributed to declining grid reliability as utilities were left with insufficient ramping capabilities needed to balance intermittent generation. This culminated in a load-shedding event in August 2020 that left hundreds of thousands of Californians without electricity in the middle of a heat wave.

Following the blackouts, California Governor Gavin Newsom issued an emergency proclamation directing state agencies to develop additional power capacity to avoid future disruptions that were driven by an overreliance on intermittent power and a lack of new baseload resources as well as an anticipated capacity shortfall over the next several years.[12] In response to reliability challenges, California's Department of Water Resources purchased four gas-fired generators at a cost of nearly $200 million. The type of generators it purchased – aeroderivative gas turbines – tend to have higher carbon emission rates than the combined cycle gas-fired plants being developed elsewhere in the country.[13] In addition to reliability issues, these policies have also contributed to California's surging retail electricity prices,[14] which were the highest in the country in 2021.[15]

These events underscore the importance of sound energy policy and highlight the benefits of a technology neutral approach when addressing climate change.

CAC Must Consider Impact on Affordability

While an equitable solution to climate change is sought, the burden of a policy cannot be made to rest unduly on one segment of society. Accordingly, API urges the CAC to perform a comprehensive study of the costs and unintended consequences of the full suite of CLCPA policies. Before implementation, for transparency purposes, every New Yorker should have access to the results of this study so they can understand the policy's implications – especially those that impact their pocketbooks.

While API appreciates that the CAC has limited its proposed all-electric heating requirement to new construction as retrofits can be incredibly costly, the Council should also understand the added cost of heat pumps in new construction. According to research conducted for the National Association of Home Builders, all-electric homes can cost more upfront in comparison to gas homes.[16] Specifically, the overall range of estimated electrification costs for an electric

[12] *See* https://water.ca.gov/News/News-Releases/2021/Sept-21/Temporary-Power-Generators.

[13] *See* https://www.ge.com/gas-power/products/gas-turbines/lm6000. Based on an assumed natural gas carbon intensity of 117 lbs. per million BTU.

[14] *See* https://www.utilitydive.com/news/californias-dilemma-how-to-control-skyrocketing-electric-rates-while-buil/597767/

[15] EIA Average Retail Price of Electricity to Ultimate Customers, available at: https://www.eia.gov/electricity/data.php#sales.

[16] *See* https://www.nahb.org/-/media/NAHB/nahb-community/docs/committees/construction-codes-and-standards-committee/home-innovation-electrification-report-2021.pdf.

reference house compared to a baseline gas reference house in cold weather climates was between $11,000 and $15,000.[17] The higher costs in colder, heating-dominated climates are due to the need for more expensive heat pumps rated to operate in colder temperatures. The more expensive electric equipment can also result in higher energy costs by $84 to $404 annually compared to a baseline gas house, and by $238 to $650 annually compared to a gas house with high efficiency equipment. Consumers in colder climates will therefore likely be faced with higher upfront construction costs and higher operating costs throughout the life of the equipment.[18] With respect to appliances, electric stoves are estimated to cost anywhere from ten to thirty percent more than those powered by gas.[19]

With respect to electric generation, a rapid shift away dispatchable generating resources that have firm fuel can result in higher electricity costs for customers. One of the "sector strategies" proposed in the draft scoping plan is the retirement of all fossil fuel fired facilities.[20] This recommendation ignores the benefits of maintaining flexible gas-fired power plants to help balance intermittent renewables and avoid shortages that can drive electricity costs higher. Many utilities with aggressive decarbonization targets across the country have found that retaining natural gas on their system will help manage the costs of transitioning to zero-carbon generation.

Southern California Edison, the second largest utility in the country, wrote in its decarbonization roadmap that "some natural gas continues to be deployed because removing it completely from the 2045 electricity landscape would significantly increase resource costs." The roadmap, which is called "Pathway 2045," describes how the utility will achieve carbon neutrality by 2045 as required under state law. It also notes that it plans to keep 10,000 MW of gas-fired capacity available, because without it "average annual resource costs would rise nearly 40% post-2030."[21]

The retirement of all fossil fuel fired generators also ignores the fact that many – especially those fueled by natural gas – can be transitioned to lower-emitting fuels like low-carbon hydrogen or renewable natural gas. These plants can also be retrofitted with carbon capture and sequestration technology as it becomes commercially available. These alternatives will help provide NYISO a more complete portfolio of flexible resources which will provide greater reliability while managing the costs of decarbonization.

Policies Will Have a Significant Impact on Reliability

New Yorkers need affordable and reliable energy. On cold nights, it is essential that everyone has access to affordable and reliable home heating. A key theme of the CAC draft scoping plan is reducing emissions from New York's vast buildings sector, which it recommends be achieved through the adoption of zero emission building codes and standards. Given that most building emissions are related to space heating, this would likely require a significant increase in the use of heat pumps in the residential and commercial sectors.

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[17] The study included the cold weather climates of Denver and Minneapolis.

[18] *Ibid*. Climate zone had a strong influence on both construction costs and energy use costs. In colder climates, heat pumps with variable refrigerant flow rated for operation during low outdoor temperatures are needed. Often referred to as cold climate heat pumps, these systems are more expensive: $8,000-$9,000 more compared to a gas furnace.

[19] *See* https://www.blvdhome.com/blog/electric-vs-gas-stoves

[20] Climate Action Council, draft scoping plan at p. 154.

[21] Southern California Edison, Pathway 2045, at p. 8, November 2019, *see* www.edison.com/home/our-perspective/pathway-2045.html.

Broad adoption of heat pumps in New York could add significant electricity demand to the grid just as the power supply is being transitioned from firm, dispatchable resources to those that are intermittent and non-dispatchable. It also has the potential to change electricity consumption patterns and can put upward pressure on the wholesale clearing price of electricity which in turn can increase retail prices paid by consumers.

Currently, NYISO is a summer peaking control area – with electricity demand typically topping out during the mid-afternoon hours in July or August. However, if state policies drive the widespread adoption of heat pumps, then the system's peak could shift to winter evenings, when heating load is highest. NYISO in its "2021 Load & Capacity Data" report, also known as the "Gold Book," projects that under the CLCPA the state will become a winter peaking market by 2035 as heating electrification significantly changes electricity usage patterns.[22]

Solar resources have made up a considerable amount of new capacity added in the state. This change means that solar generation, which is greatest during the day and non-existent at night, may be unavailable to meet load as the system peaks. While battery storage remains a promising potential solution to the challenge of integrating intermittent resources, it is currently unavailable in the quantities and durations required to maintain reliability on a system that is almost completely reliant on intermittent renewables. Without solar generation to meet demand during these periods, NYISO will need to ensure that it has not only a sufficient amount of other generation available, but that the available generation can ramp up quickly to meet heating load that increases sharply as temperatures fall in the evening. Currently, natural gas generation is uniquely capable of providing that service, though it could eventually be complemented and eventually replaced by emerging technologies including hydrogen and renewable natural gas that are consistent with the CLCPA goals.

NYISO itself has conducted extensive analysis to determine the optimal manner by which to achieve a carbon-free grid by 2040 and found that "fossil fuel-powered resources will continue to be needed on the road to 2040 to offset … intermittency until new, cleaner technologies can provide the responsiveness now fulfilled primarily by natural gas generation."[23]

API urges the CAC to adequately consider the impact of widespread adoption of heat pumps on the growth and patterns of electricity consumption in New York – particularly in densely populated areas including New York City and Long Island – before enacting the policies recommended in the draft scoping plan.

Deferring Policy Decisions to California May Not Be Right Fit for Empire State

California is currently developing the Advanced Clean Cars 2 (ACC 2) regulations that propose a sales mandate for zero-emission vehicles (ZEV) or plug-in hybrid electric vehicles (PHEV) that would begin at 35 percent in 2026 and ramp up to 100 percent for the 2035 model year and beyond.[24] California Governor Newsom has expressed a stated purpose of

[22] *See* https://www.nyiso.com/documents/20142/2226333/2021-Gold-Book-Final-Public.pdf/b08606d7-db88-c04b-b260-ab35c300ed64.

[23] *See* https://www.nyiso.com/-/how-a-natural-gas-moratorium-could-cause-bumps-in-the-road-to-an-emissions-free-grid.

[24] *See* https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/accii/appa5.pdf.California Air Resources Board (CARB), 2022. Appendix A-5: Proposed Regulation Order for Section 1962.4 Zero-Emission Vehicle Standards for 2026 and Subsequent Model Year Passenger Cars and Light-Duty Trucks. April 12. *See*

addressing greenhouse gas emissions by banning the sale of vehicles with internal combustion engines (ICE) thus forcing California's market toward electric vehicles (EVs).

In 2035, California residents wanting a new automobile will only be able to buy new electric vehicles.[25] The CAC believes that the state should adopt these regulations once they are finalized in California.[26] API encourages the CAC and state policymakers to review the differences between California's population density, geography and weather patterns before choosing to follow California In their adoption of the ACC 2 rules.

Prudent Public Policy Provides Customer Choice and Avoids Mandates

New York's economy depends on a reliable and affordable transportation fleet powered by energy sources that provide the consumer with a vehicle that they can afford and that does not unnecessarily limit the choices of the consumer.[27] Regulations that establish annual quotas for the production of zero emission light-, medium-and heavy-duty vehicles and policies that ban the sale of new vehicles equipped with internal combustion engines precludes opportunities to developing other technologies that can compete to reduce carbon emissions in transportation. Competition teamed with consumer preference could provide the best approach to accomplishing the state's goals at the least cost.

Efficiency Have Occurred and Continual Improvements Being Made

Recent forecasts of long-term energy trends such as those prepared by the U.S. Energy Information Administration[28] indicate that despite projections of growth in the electric vehicle fleet, liquid fuels consumption will continue to be the primary transportation energy source through the next two decades. The automobile industry has made tremendous progress making the internal combustion engine much more efficient across all vehicle segments. Consumers in the market for a new vehicle will find conventional vehicles 30 percent more efficient than 12 years ago.

The natural gas and oil industry is advancing cleaner fuels to provide consumers with lower-carbon options. Real-world CO_2 emissions per mile traveled for new light-duty vehicles have declined 48 percent since 1975. Model year 2020 new vehicle estimated real world CO_2 emissions are at a record low, and fuel economy is at a record high.[29] API's member companies are also investing in low-carbon technologies like renewable diesel, hydrogen and liquid fuels made from algae.

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[25] California residents will not be precluded from being able to buy used vehicles that run on gasoline or diesel.

[26] On September 8, 2021, Governor Kathy Hochul signed legislation establishing a goal for all new LDVs and non-road vehicles sold in the State to be zero-emission by 2035 and all new MHD vehicles to be zero-emissions by 2045. *See* Chapter 423, Laws of 2021.

[27] Nearly all products that consumers use in the United States are currently transported by truck. See *Trucking in America: Everything you bought in 2021 moved on a truck*, CNET (December 30, 2021). See also Center for Intermodal Freight Transportation Studies, the University of Memphis, *Overview of the U.S. Freight Transportation System*, (August 2007).

[28] U.S. Energy Information Administration, *Annual Energy Outlook 2022*.

[29] 2021 EPA Automotive Trends Report.

The ultimate trajectory and level of market penetration achieved by electric vehicles will depend on continued (a) reductions in battery costs (that depend on availability of raw materials and that may require technology breakthroughs), (b) improvements in electric vehicle driving range, (c) expansion of the electric vehicle charging infrastructure and, (d) ultimately consumer acceptance. Put differently, choices are constrained by what is available, what is affordable, and what is preferred. For most consumers purchasing a new vehicle, sticker price, fuel cost, and refueling convenience are of primary importance. And the trajectory of EV adoption also depends, heavily, on the assumption that future improvements in EV technology will not be overtaken by unforeseen breakthroughs that may impact the relative energy and environmental performance of existing conventional automotive technologies.

A recent blog by the *Martec Group* indicates that EV investments and commitments are "at all-time highs. In March 2022, EV sales reported a 60% Increase from 2021," and President Biden has established a goal for 50 percent of all new vehicles sold in 2030 to be ZEVs while there is a global market "looking to increase that number to 75% by 2040." [30] The blog is based on a study that evaluates the chain for ZEVs to achieve these stated goals. The findings show that based on baseline United States Geological Survey 2020 production data and *Martec Group* analysis, for the U.S. to produce enough minerals domestically to reach the Biden administration's 50 percent by 2030 target, domestic production will require:

- 48x more lithium (The U.S. has one active mine today).
- 16x more nickel (The U.S. has one active mine today).
- 29x more cobalt (The U.S. has two active mines today, as a secondary material).
- Graphite that is not produced at scale in the U.S. (The U.S. has zero active mines today).

Additionally, the *Martec Group* study indicates that the increase in demand for the critical materials (lithium, nickel, cobalt, copper, neodymium, and aluminum) necessary for battery and electric motor production could put upward pressure on the price of EVs. Over the past year, the price of each key mineral has experienced significant increases with lithium carbonate leading the way at greater than 12 times the price it was 12 months ago. Price increases from November 2020 to March 2022 include:

- Lithium Carbonate 1,184 percent,
- Nickel 136 percent,
- Cobalt 127 percent,
- Copper 43 percent,
- Neodymium 177 percent, and
- Aluminum 85 percent.

A lack of competition among raw material gives suppliers more pricing power for their goods, and upward pressure on the price of materials for EVs could ultimately be transferred to consumers. [31]

The CAC should consider the possible trajectory of the cost to supply batteries that will be used in EVs and should also appreciate the implications to U.S. energy and transportation security that could result from relying on non-domestic producers of raw materials and batteries.

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[30] *Martec Group*, "Electric Vehicle Growth in the U.S.: A look into the EV Battery Supply Chain," March 2022, available at https://martecgroup.com/electric-vehicle-battery-supply-chain/.

[31] *Ibid*.

Since EV charging infrastructure is currently only used by a small fraction of drivers, allowing utilities to invest in EV charging infrastructure and recover the costs of those investments through regulated cost recovery (*i.e.,* through charges to all their ratepayers) will likely result in an unfair shifting of costs. Furthermore, this could result in charging stations constructed in remote locations, resulting in unnecessary transmission and distribution infrastructure permanently embedded into the rate bases. API believes that investments in charging infrastructure should be left to the private sector, which must raise its own capital and pay its own costs.

Need for Economy-Wide Carbon Policy

The Climate Action Council also identified three options for public input and possible adoption: (1) a tax or fee establishing a carbon price, referred to as a *carbon pricing*; (2) a program that caps emissions across the economy, or within particular sectors, and allocates emissions primarily through an auction mechanism that provide revenues for investment, known as *cap-and-invest*; and (3) a *clean energy supply standard*, which would require providers of liquid and gaseous fuels across the economy to reduce the carbon intensity of fuels they introduce into commerce.

API shares the goal of reduced emissions across the broader economy and, specifically, those from energy production, transportation and use by society. API believes that to achieve meaningful and permanent emissions reductions that meet the climate challenge, it will take a combination of policies, innovation, industry initiatives and a partnership between government and the various economic sectors. Accordingly, API has developed the Climate Action Framework, which among other things endorses a carbon price policy.[32]

API believes that instead of a patchwork of federal and state regulations and mandates that could ineffectively or inefficiently address the climate challenge, an economy-wide government carbon price policy is the most impactful and transparent way to achieve meaningful progress. We recognize there are different ways for policymakers to consider carbon pricing – from a cap-and-trade system to a carbon tax – but there are some general parameters to begin the discussion.

Policy should be:

- *Economy-wide:* A carbon pricing system should be designed to price carbon at the outset for all relevant greenhouse gas (GHG) emissions across the economy, from all relevant sectors and all emitters, accounting accurately for the benefits, costs and amounts of GHG emissions. Policies should support significant investments in innovation to develop technologies that lower the cost of GHG emissions abatement across the economy. Policy should be based on carbon-equivalent emissions on a common unit and period of measurement (*e.g.*, GWP100) basis across the U.S. economy, as practically and economically achievable as possible.

- *Transparent*: The carbon pricing system should be designed so that consumers have transparent incentives, based on actual GHG emissions, if possible, to reduce GHG emissions efficiently. With respect to transportation fuels, a government policy-imposed carbon price should be disclosed at the point of retail sale. To provide certainty for the economy and maintain the integrity of the policy, the price on carbon or emissions cap should be adjusted periodically through a defined, rational and transparent process to meet GHG emissions targets. As

[32] *See* https://www.api.org/climate#carbon-price.

applicable, the year 2005 should be the baseline against which future targets for reducing GHG emissions are determined. This already is the baseline for which U.S. economywide policy action has been determined in global climate negotiations.

- *Nonduplicative*: Policies should minimize the burden of duplicative regulations and be designed for a uniform cost of GHG emissions on a CO_2-equivalent basis throughout the economy that does not exceed the marginal cost of carbon emissions abatement, or the cost associated by an additional ton of carbon emitted into the atmosphere.
- *Maintain U.S. Competitiveness*: The goal of a carbon price policy should be to achieve GHG emissions reductions at the least cost to society, to meet the dual challenge of continued U.S. economic growth and global competitiveness while addressing the risks of climate change.
- *Avoid Carbon Leakage, Integrate with Global Carbon Markets*: Policy should be globally integrated, including through trade mechanisms, so that U.S. entities have the incentive to reduce their carbon footprint on a worldwide basis without being competitively disadvantaged and to avoid carbon leakage.
- *Focus on Net Emissions*: Attention should be given to net emissions such that ongoing voluntary actions are recognized, and the trading and use of applicable credits and offsets are allowed.

Conclusion

API hopes that these comments provide constructive feedback, and we look forward to providing additional comments as appropriate.

Respectfully submitted,

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