

Pillars of New York’s Planned Climate Action to Realize Net Zero Emissions

Chapter 5. Overarching Purpose and Objectives of the Scoping Plan

This Scoping Plan is designed to act as a plan that the State should follow to meet the requirements of the statewide greenhouse gas (GHG) emission limits and achieve statewide net zero emissions pursuant to the Climate Leadership and Community Protection Act (Climate Act). The Scoping Plan discusses strategies to meet Climate Act directives by the economic sector, as well as provides recommendations for economywide activities that the State should undertake. All of these strategies are guided by pillars of climate justice, just transition, and public health, each of which is described further in the following chapters.

5.1 New York’s Climate Vision

New York will undertake a sweeping set of measures to reduce the State’s GHG footprint, transform electricity generation in the State, and drive innovative solutions through technology advancement. This Scoping Plan establishes the path forward for New York to achieve 70% renewable energy by 2030 (70x30), 100% zero-emission electricity by 2040 (100x40), a 40% reduction in statewide GHG emissions from 1990 levels by 2030, an 85% reduction in statewide GHG emissions from 1990 levels by 2050, and net zero emissions statewide by 2050. The paths to 2030 and 2050 require a comprehensive vision and integrated approach to build new programs while significantly expanding existing efforts. Each economic sector discussed in this Scoping Plan establishes a vision for 2030 and 2050, along with a slate of detailed strategies in an effort to paint the picture of the future and show the direction the State must head.

Successful implementation of this Scoping Plan requires one cohesive voice across all State entities, but State government action alone will not be enough. The State can set the stage for action, but it is equally as important to ensure engagement with all New Yorkers through education and outreach. This Scoping Plan is the result of extensive collaboration and public input. Not only is it a synthesis of sector-specific strategies, but it is also designed as overarching strategic initiatives intended to work in parallel to achieve the requirements of the Climate Act. Successful implementation will also require rapid integration and assimilation of strategies designed to achieve real results across the State.

Inform State Action

This Scoping Plan is intended to act as a strategic plan for State agencies, authorities, and other entities that are responsible for passing new legislation and implementing new policies and programs. Many of the sector-specific chapters are organized by policy themes, and each of those themes includes several strategies that are intended to mitigate GHG emissions or enable the mitigation of GHG emissions. Each of these chapters acknowledges the existing work that the key stakeholders, including State agencies, in those economic sectors have done or are currently doing to address climate change, and when appropriate builds on those policies and programs. Beyond that, the sector-specific chapters include new strategies to guide New York in meeting the requirements of the Climate Act. It continues to be important that New York leverage action by coordinating within and between agencies and authorities. Linkages between programmatic actions across agencies should be highlighted.

In addition, pursuant to the Climate Act, this Plan will inform the New York State Energy Planning Board's adoption of an updated State Energy Plan in accordance with section 6-104 of the Energy Law.⁴³ The State Energy Plan, most recently adopted in 2015 and subsequently amended in 2020, is a comprehensive roadmap to build a clean, resilient, and affordable energy system for all New Yorkers. The State Energy Plan establishes how the State can ensure adequate supplies of power, reduce demand through new technologies and energy efficiency, preserve the environment, reduce dependence on imported gas and oil, stimulate economic growth, and preserve the individual welfare of New York citizens and energy users. The first State Energy Plan issued after the completion of the final Scoping Plan shall incorporate the recommendations found herein.⁴⁴

5.2 Process for Development

This Scoping Plan is the culmination of work of hundreds of professionals across the State and a robust public engagement process. The Climate Action Council (Council) convened its first meeting in March of 2020. Since that time, and throughout the COVID-19 pandemic, the Council continued its important work of developing a draft Scoping Plan of strategies to reduce New York's GHG emissions to meet the GHG emission limits and social justice requirements set forth in the Climate Act. In order to finalize the draft Scoping plan by the end of 2021, the Council held 18 meetings in which it, among other work, appointed seven Advisory Panels, approved work plans, received progress reports, received hundreds of recommendations, received feedback from the Climate Justice Working Group (CJWG) on the benefits

⁴³ ECL § 75-0103(11).

⁴⁴ Ibid.

and impacts to Disadvantaged Communities of the Advisory Panels' recommendations, and received data on costs and benefits of the mitigation strategies.

These Advisory Panels – Agriculture and Forestry, Energy Efficiency and Housing, EITE Industries, Land Use and Local Government, Power Generation, Transportation, and Waste – as well as the Just Transition Working Group (JTWG), comprised professionals from all across the State who provided their expertise in developing strategies that reduce GHG emissions in New York while benefiting New York's workers and Disadvantaged Communities. The Advisory Panels and JTWG held over 90 public meetings during their recommendation development process. At the direction of the Council, the panels sought the perspective of other panels, additional experts, and other stakeholders in the development of the recommendations. The Advisory Panels also engaged with the CJWG for feedback on the recommendations. The Advisory Panels delivered their GHG mitigation recommendations for Council consideration at the April and May 2021 Council meetings. The Council also received adaptation and resilience recommendations from the Land Use and Local Government Advisory Panel and recommendations on workforce opportunities and business impacts from the JTWG. The full slate of recommendations, along with CJWG feedback on the recommendations, and adaptation and resilience recommendations can be found in Appendices A, B, and H, respectively.

In 2021, the Council was presented with results from an integration analysis on a suite of mitigation strategy scenarios, which were built from recommendations provided by the Advisory Panels. This analysis provided data on the emission reductions and societal costs and benefits that can be expected from differing options of strategy sets. The analytical work continued with additional research and outputs from the integration analysis presented to the Council in 2022.

The Council spent the first half of 2022 receiving written and oral comment from the public on the draft Scoping Plan. The Council also continued working on key open issues identified when the draft Scoping Plan was released, the gas system transition, economywide policies, and the role of alternative fuels. The Council held 13 public meetings in 2022 in the development of this final Scoping Plan. These deliberations, informed by the public input and further consultation with the CJWG, are reflected in the strategies contained herein. This Scoping Plan identifies and makes recommendations on regulatory measures, legislation, funding, and other State actions that will ensure the attainment of the Climate Act requirements. Significant policy developments at the national and state level have emerged that offer major new tools for New York to utilize, adopt, and draw from in implementing the Scoping Plan recommendations.

Stakeholder Engagement

This Scoping Plan considers inputs from many stakeholders, as well as critical feedback during consultation with the CJWG, established pursuant to Environmental Conservation Law (ECL) § 75-0111. The Council's Advisory Panels were committed to a public process in the development of their recommendations, holding public engagement sessions, conducting public surveys, and accepting and incorporating public comment throughout. The recommendations that were delivered to the Council from the Advisory Panels included this stakeholder input. State agencies and other stakeholders representing many different perspectives were critical in developing this Scoping Plan and feedback was gathered at several different public webinars and workshops, including through outreach on the annual GHG emissions report, a technical conference on oil and gas emissions accounting, and outreach on net emissions accounting.

In addition, the New York State Energy Research and Development Authority (NYSERDA) held a Reliability Speaker Session to engage experts, including the New York Independent System Operator (NYISO) and the Utility Intervention Unit of New York State Department of State (DOS), on electric system reliability planning for the purposes of informing the development of this Scoping Plan. After the draft Scoping Plan was issued, the Council initiated a public comment process designed to ensure that all New Yorkers had the opportunity to provide input on the draft Scoping Plan.

The Council's public comment process exceeded the requirements of the Climate Act by extending the public comment period to six months and holding nine in-person public hearings across the State and two virtual public hearings. The Council received approximately 35,000 comments on the draft Scoping Plan. The feedback submitted during the public hearings and by written comments covered the full scope of the transition to a clean energy economy, including the gas system transition, climate and environmental justice, hydrogen, nuclear energy, alternative fuels, cost impacts, electrical grid capacity, reliability, and security, rural and upstate community needs, jobs, and the New York economy.

The Council welcomed feedback from the public on its work throughout the process. Continued engagement is encouraged as the Scoping Plan is implemented through laws, regulations, and policies, each of which will include opportunities for public input. Stakeholder outreach and engagement will be essential to continue moving New York forward on climate action.

Integration Analysis

The Climate Act requires that the Council evaluate the total potential costs and potential economic and non-economic benefits, considering the Value of Carbon established by New York State Department of Environmental Conservation (DEC) under the Climate Act, of this Scoping Plan for reducing GHGs. An integration analysis was developed to estimate the economywide benefits, costs, and GHG emissions reductions associated with pathways that achieve the Climate Act GHG emission limits and net zero emissions goal. This integration analysis incorporates and builds from Advisory Panel and Working Group recommendations, as well as inputs and insights from complementary analyses, to model and assess multiple mitigation scenarios. Key assumptions, drivers, and results of the analysis have been made publicly available throughout the analytic process, and feedback from Advisory Panels, State agency staff, the CJWG, and the Council has been incorporated. In addition, a Technical Advisory Group of experts from academia and national labs were consulted.

The results from the draft integration analysis were presented to the Council in summer and fall of 2021. Updated analysis and additional sensitivity analyses and research efforts were presented over the summer and fall of 2022. These are available to the public on the Climate Act website and in Appendix G. Additional information on the integration analysis is provided in *Chapter 9. Analysis of the Plan* and *Chapter 10. Benefits of the Plan*.

5.3 Summary of Strategies

Through the process of the developing this Scoping Plan, the Council recognized several key strategies that are fundamental to achieving the GHG emission limits and net zero GHG emissions:

- Energy efficiency measures that achieve the Climate Act energy efficiency requirement
- Transition from fossil natural gas to electrification in buildings
- Zero-emission electricity
- Transportation electrification
- Enhancement of transit, smart growth, and reduced vehicle miles traveled (VMT)

Fossil Natural Gas

6 NYCRR Part 203 defines “natural gas” as a naturally occurring mixture or process derivative of hydrocarbon and non-hydrocarbon gases. Its constituents include the greenhouse gases methane and carbon dioxide and may include natural gas liquids.

This Scoping Plan uses the term “fossil natural gas” to describe a fuel that is predominately methane formed over millions of years in geologic formations deep beneath the earth’s surface. This fuel is extracted, processed for sale and consumption, and delivered to end-use consumers primarily through intra- and inter-state pipelines.

- Transition to low global warming potential (GWP) refrigerants and enhanced refrigerant management
- Maximization of carbon sequestration in New York’s lands and forests
- Mitigation of fugitive methane emissions across the waste, agriculture, and energy sectors
- Diverse portfolio of solutions in industry, including efficiency, electrification, and strategic use of alternative fuels and carbon capture technologies for certain industrial applications

Biogas and Renewable Natural Gas

Biogas and renewable natural gas have the potential to reduce greenhouse emissions by mitigating methane emissions from waste sources and displacing fossil fuels, although there are emissions associated with their combustion and leakage. There are differences between these two fuels that influence their use in the strategies in this Scoping Plan.

Biogas | Biogas is gas resulting from the decomposition of organic matter under anaerobic conditions (such as in a landfill, manure pit, or wastewater recovery facility). The principal constituents are methane and carbon dioxide. Some engines can use biogas as a fuel source with minimal processing. Emissions from biogas can occur as a result of poor maintenance causing methane leaks, and from leftover solid waste.

Renewable Natural Gas | Renewable natural gas is biogas that has been processed and upgraded and can be used in place of fossil natural gas. To process biogas to renewable natural gas, the methane content is increased by removing water vapor, carbon dioxide, hydrogen sulfide and other impurities. The process of converting biogas to renewable natural gas can be a source of greenhouse emissions from fugitive methane released during refining, if fossil fuels are used in the conversion process, when poor maintenance of equipment or gas infrastructure results in methane leaks, and the improper management of the byproducts of renewable natural gas creation.

This Scoping Plan includes recommendations to reduce greenhouse gas emissions associated with the creation of renewable natural gas from biogas in the waste and agriculture sectors..

In addition to the realization of these fundamental strategies, reliability and resiliency of energy systems is critical to providing robust systems that respond to changing demand in real-time and withstand unexpected events. The strategies to implement and achieve the requirements and goals of the Climate Act must support the high reliability standards in place in the State by implementing improvements and enhancements where needed and sustaining the practices that provide high quality electric service. If reliability is properly integrated, the additional clean distributed energy resources (DERs), storage and large-scale renewables developed under the Climate Act will provide a more flexible and resilient grid to address and mitigate the impacts of climate change.

Strategies in this Scoping Plan, across all economic sectors, create new economic development opportunities and create new, high-value job growth associated with new and expanded business growth. To advance the State's emissions reduction and clean energy requirements and goals, the strategies in this Scoping Plan seek to leverage federal actions such as Infrastructure Investment and Jobs Act, the Inflation Reduction Act, and the CHIPS and Science Act to build out the clean technology supply chain in New York. New York's climate agenda is creating extensive economic development opportunities tied to manufacturing attraction, expansion, and production line repurposing for the clean energy technology and component manufacturing needed to achieve the emission limits required by the Climate Act while also positioning New York as a clean technology provider globally. Coordinated planning will ensure these benefits are captured in New York, especially in Disadvantaged Communities and legacy/rust belt cities.

As the State implements the Climate Act, it should incorporate economic development considerations into the existing planning processes underway at State entities as part of a multiagency approach to optimize businesses and economic development efforts needed to achieve the Climate Act's requirements related to emissions reductions, benefits to Disadvantaged Communities, and optimization of public and private funding opportunities. Empire State Development (ESD), in partnership with NYSERDA, the New York State Department of Public Service (DPS), the New York State Department of Labor (DOL), the Office of Just Transition, and other partner agencies, will spearhead economic development in the clean energy economy. The State's approach will advance workforce development and business development to create jobs in line with the Scoping Plan, leveraging available research and data to highlight areas poised for growth, and build on the work ESD is already doing to actively promote clean technology manufacturing throughout New York State, such as through the innovative Green Excelsior program, which is aimed at building out a robust clean technology supply chain in New York.