

Draft Scoping Plan Overview

January 2022



**Climate Action
Council**

Climate Leadership and Community Protection Act (CLCPA) – Overview

Carbon neutral economy, mandating at least an 85% reduction in emissions below 1990 levels

40% reduction in emissions by 2030

100% zero-carbon electricity by 2040

70% renewable electricity by 2030

9,000 MW of offshore wind by 2035

6,000 MW of distributed solar by 2025

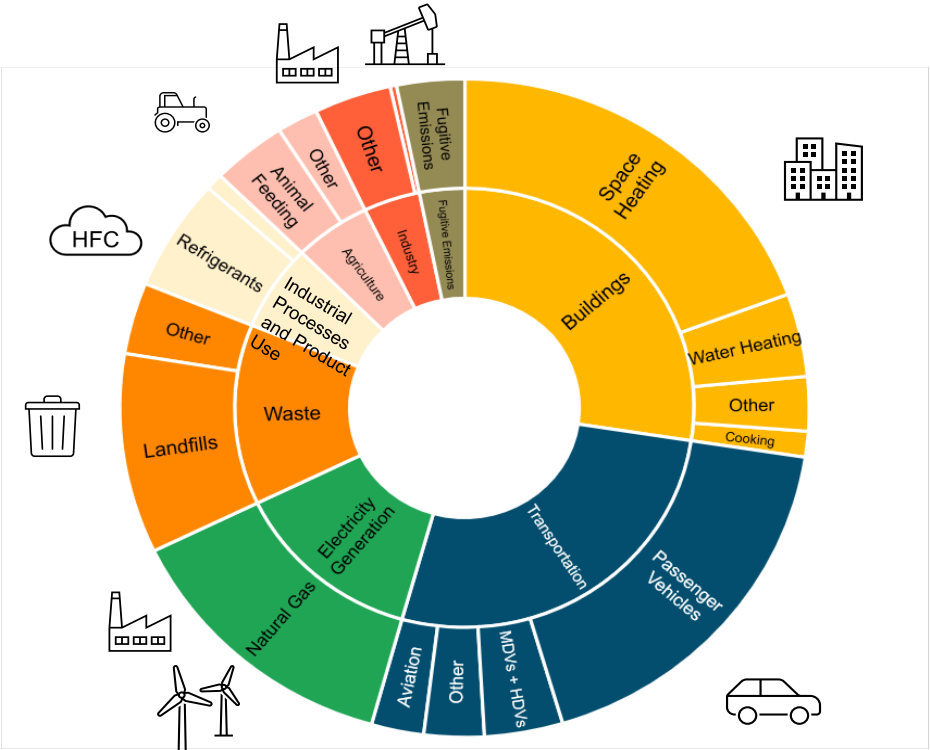
3,000 MW of energy storage by 2030

185 TBtu on-site energy savings by 2025

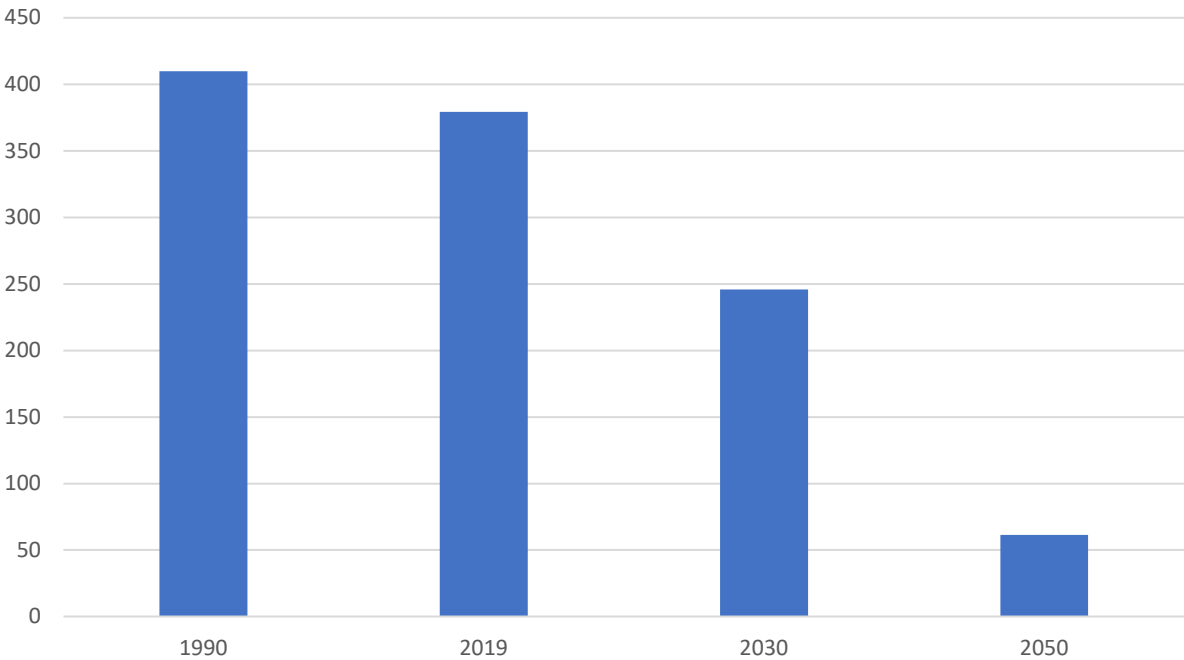
Commitments to climate justice and just transition

GHG Emissions Reduction Requirements

Current Estimated GHG Emissions by Sector

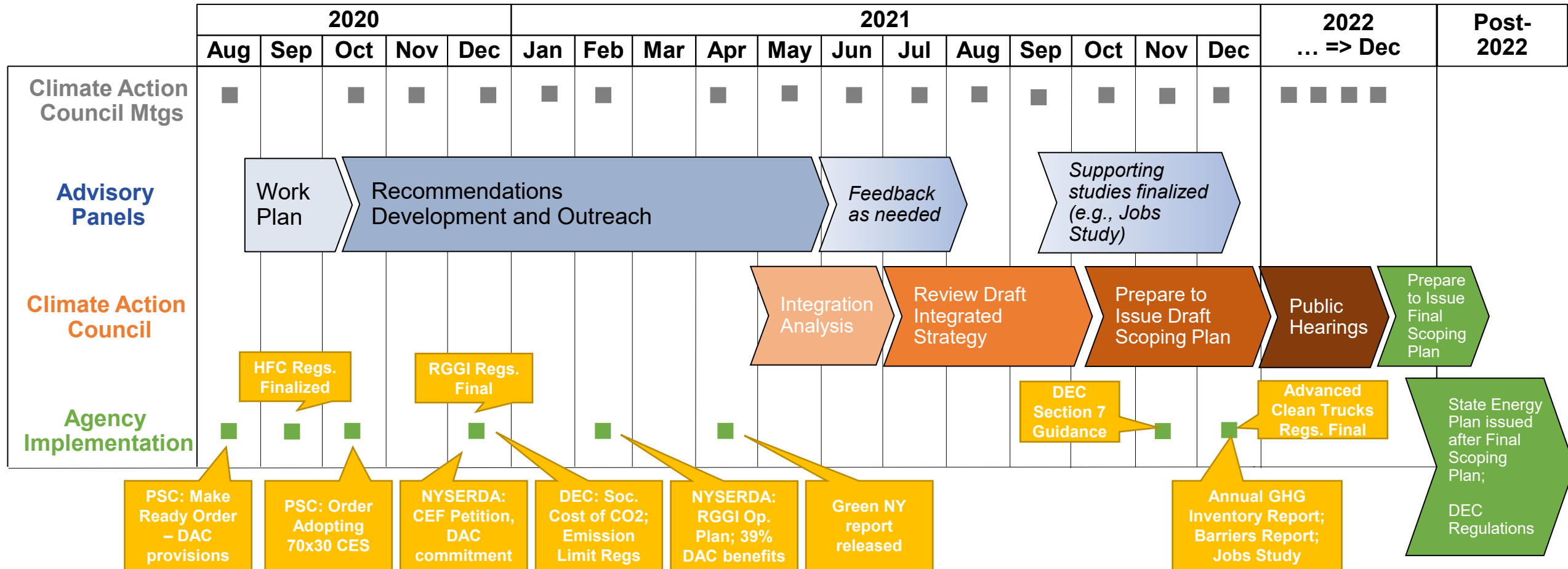


New York State GHG Emissions (MMtCO₂e)



CLCPA: Timeline and Progress

Implementation of New York's Climate Act is on track and moving forward expeditiously



Process for developing the Draft Scoping Plan

The Climate Act requires the CAC to develop a draft Scoping Plan to meet statutory emission limits by the end of 2021

- > The Draft Plan is informed by recommendations of Advisory Panels, Just Transition Working Group, and Climate Justice Working Group
- > Reflects the consensus recommendations from the Advisory Panels and JTWG as the strategies to achieve the emissions limits
- > Considers climate justice, job creation, cost reductions, public health benefits, minimizing emission leakage
- > Emissions addressed include upstream emissions associated with fossil fuels from out-of-state
- > Undertakes comprehensive benefit-cost analysis
- > The recommendations formed basis of scenario modeling to show impact of interaction of strategies across sectors
 - 3 scenarios to achieve emissions limits – seeking public feedback on the mix of strategies and level of ambition

Summary of Strategies in the Draft Plan

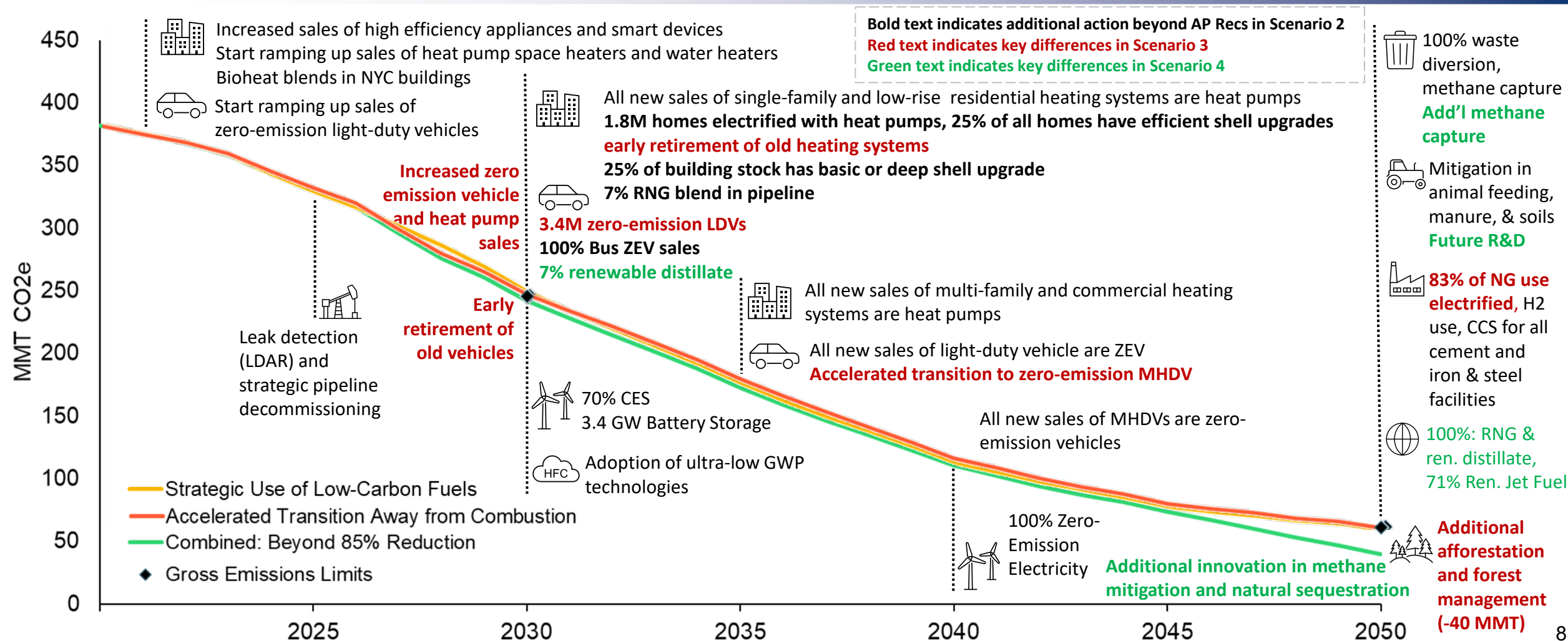
The Draft Scoping Plan scenarios advance several key strategies that are fundamental to achieving the emission limits

- > Energy efficiency measures that achieve the Climate Act energy efficiency goal
- > Transition from fossil fuels to electrification in buildings
- > Zero emissions electricity
- > Transportation electrification
- > Enhancement of transit, smart growth, and reduced vehicle miles traveled (VMT)
- > A transition to low-GWP refrigerants and enhanced refrigerant management
- > Maximizing carbon sequestration in New York's lands and forests
- > Eliminate fugitive methane emissions across the waste, agriculture, and energy sectors
- > A diverse portfolio of solutions in industry, including efficiency, electrification, and limited and strategic use of low-carbon fuels and carbon capture technologies for certain industrial applications.

Scenario Overview

- > Scenarios that meet or exceed GHG emission limits, achieve carbon neutrality by midcentury
 - Foundational themes across all mitigation scenarios based on findings from Advisory Panels and supporting analysis
 - Zero emission power sector by 2040
 - Enhancement and expansion of transit & vehicle miles traveled reduction
 - More rapid and widespread end-use electrification & efficiency
 - Higher methane mitigation in agriculture and waste
 - End-use electric load flexibility reflective of high customer engagement and advanced techs
 - **Scenario 2: Strategic Use of Low-Carbon Fuels**
 - Includes the use of bioenergy derived from biogenic waste, agriculture & forest residues, and limited purpose grown biomass, as well as green hydrogen, for difficult to electrify applications
 - **Scenario 3: Accelerated Transition Away from Combustion**
 - Low-to-no bioenergy and hydrogen combustion; Accelerated electrification of buildings and transportation
 - **Scenario 4: Beyond 85% Reduction**
 - Accelerated electrification + limited low-carbon fuels; Additional VMT reductions; Additional innovation in methane abatement; Avoids direct air capture of CO₂

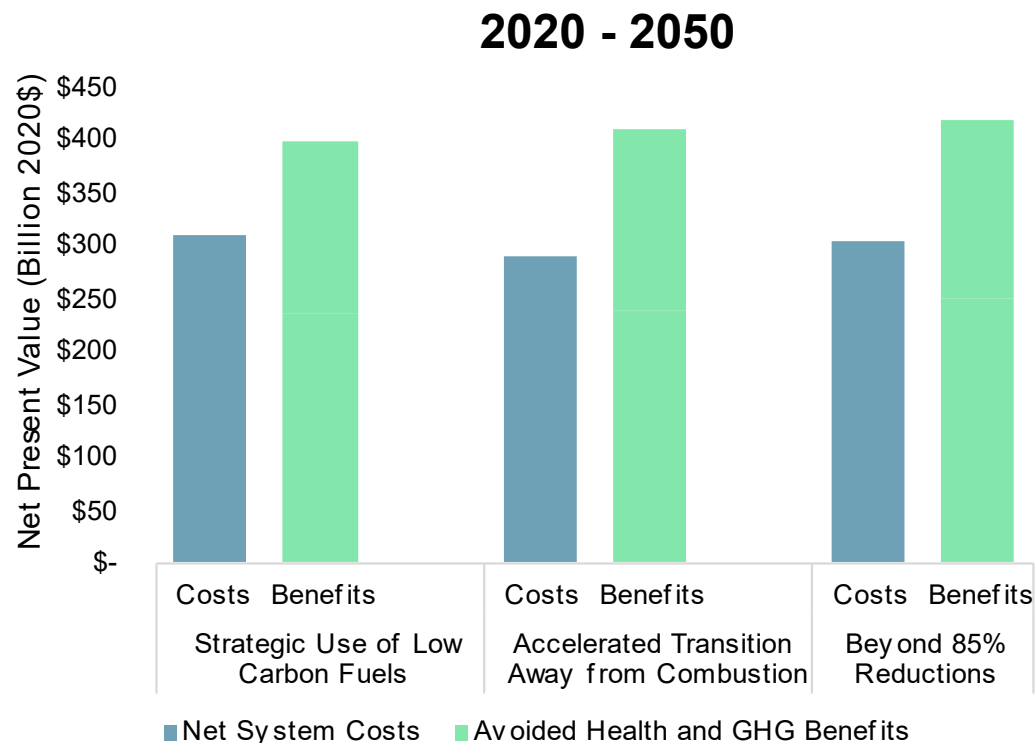
Comparison of the Mitigation Scenarios



Key Benefit-Cost Findings [NPV 2020-2050]

Cost of Inaction Exceeds the Cost of Action by more than \$90 billion

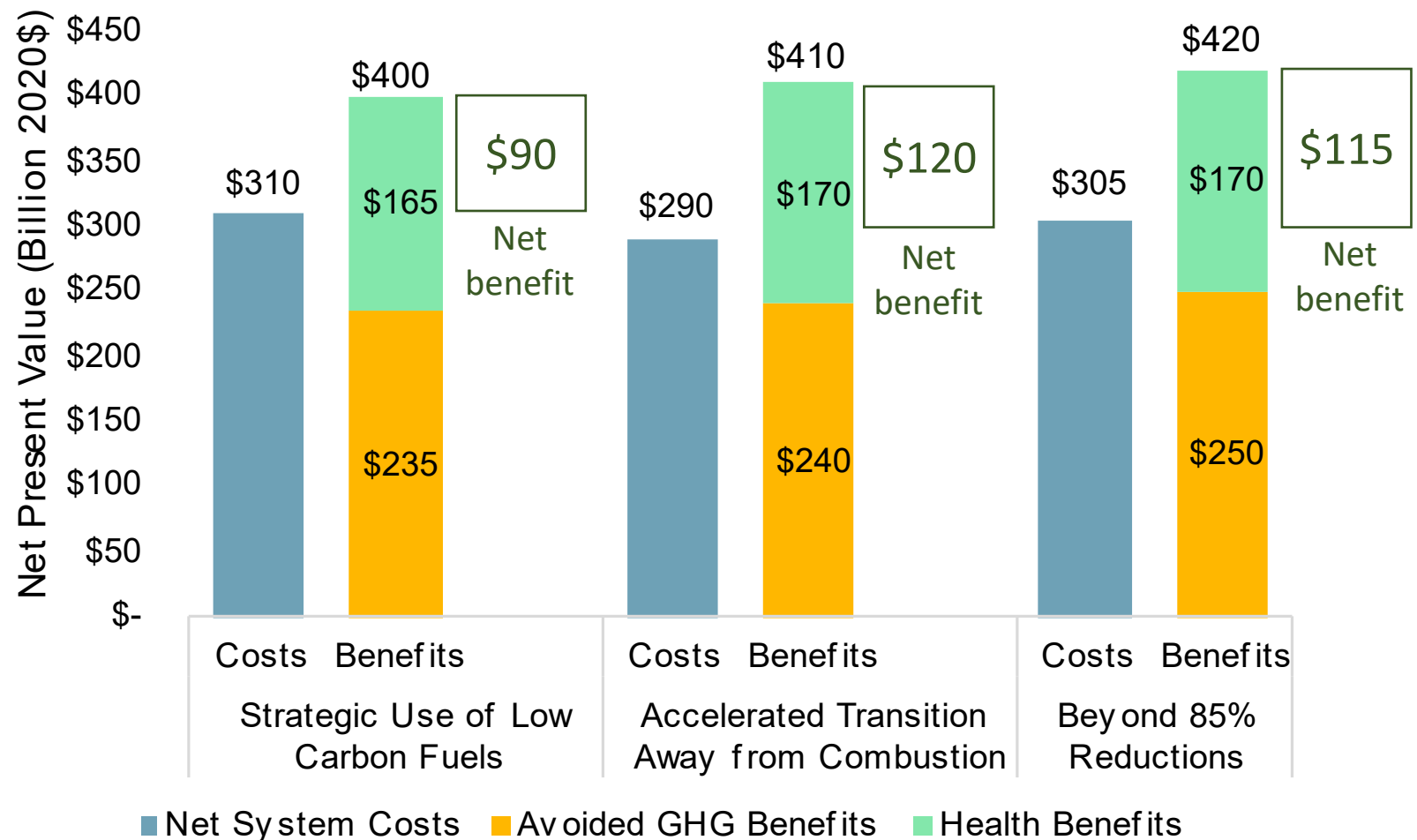
There are significant required investments to achieve Climate Act GHG Emissions Limits, accompanied by even greater external benefits and the opportunity to create hundreds of thousands of jobs



- **Net *benefits* range from \$90-\$120 billion**
- Costs are a small share of **New York's economy**: 0.6-0.7% of GSP in 2030 and 1.4% in 2050
- As a share of current overall **system expenditures**, costs are moderate: 9-11% in 2030 and 25-26% in 2050

Benefit-Cost Assessment

Net Present Value of benefits and costs relative to Reference, including net direct costs, GHG benefits, and health benefits (2020 – 2050)



Mitigation cases show **positive net benefits (\$90-\$120 billion)** when considering the value of avoided greenhouse gas emissions and health co-benefits, in addition to cost savings from reduced fuel use

Integration Analysis Findings

- > **Achieving deep decarbonization is feasible by mid-century.** Achieving the emission limits **requires action in all sectors**, requiring critical investments in New York's economy.
- > **Energy efficiency and end-use electrification are essential.** Approximately 1 to 2 million efficient homes will need to be electrified with heat pumps by 2030. Approximately 3 million zero-emission vehicles (predominantly battery electric) will need to be sold by 2030.
- > **New York will need to substantially reduce VMT while increasing access to public transportation.** This should include expanding transit services structured around community needs, smart growth inclusive of equitable TOD (E-TOD), and transportation demand management.
- > **Consumer and community decision-making is key, and especially important for the purchase of new passenger vehicles and heating systems for homes and businesses through the next decade.** In all modeled scenarios, zero-emission vehicles and heat pumps will need to become the majority of new purchases by the late 2020s, and fossil fuel-emitting cars and appliances will no longer be sold after 2035.
- > **A transition to low-GWP refrigerants and enhanced refrigerant management will be required** to electrify while reducing and ultimately eliminating GHG emissions from HFC-based refrigerants used in today's heat pumps.

Integration Analysis Findings (cont'd)

- > **Low-carbon fuels such as bioenergy or green hydrogen have a role**
 - **Sectors that are challenging to electrify**, including MHD vehicles and high-temperature industrial, potential application in district heating and non-road transportation such as aviation and rail.
 - **Electricity system reliability beyond 2040**, increased electrification results in electric consumption doubling and peak load nearly doubling by 2050, and New York becomes a winter peaking system by 2035. Firm, zero-emission resources, such as green hydrogen or long-duration storage are needed
- > **Necessary methane emissions mitigation in waste and agriculture will require transformative solutions.** Massive diversion of organic waste from landfills and innovative manure management and animal feeding practices coupled with the capture of fugitive methane emissions
- > **Large-scale carbon sequestration opportunities include lands and forests and negative emissions technologies.** Protecting and growing New York's forests is required for carbon neutrality. Negative emissions technologies (such as the direct air capture of CO₂) may be required if the state cannot exceed 85% direct emissions reductions by 2050. Strategic land-use planning will be essential to balance natural carbon sequestration, agriculture activities, new renewables development, and smart urban planning (smart growth).
- > **Research, development, and demonstration (RD&D) is key.** Additional innovation will be required in areas such as carbon sequestration solutions, long-duration storage, flexible electric loads, low-GWP refrigerants, and animal feeding, in concert with federal action (such as Earthshots).

Health Effects

Overview of the Analyses

The public health benefits analysis includes three components:

1. Improvements in **ambient air quality** from reduced fuel combustion
 - Using EPA's Co-Benefits Risk Assessment Health Impacts Screening and Mapping Tool (COBRA), NYS quantified **air quality and health benefits** resulting from the pathways analyzed from 2020 to 2050
2. Health improvements from increased **active transportation** (e.g., walking and cycling)
 - The potential for public health benefits from increased activity while accounting for changes in traffic collisions were estimated using the *Integrated Transport Health Impacts Model* (ITHIM)
3. Health benefits associated with **energy efficiency interventions** in low- and moderate-income homes
 - This analysis applies the average values from published literature on the health and safety benefits of energy efficiency and weatherization programs to estimate the benefits of such programs in NYS

Key Findings

- Decarbonization of New York can result in a substantial health benefit from improved air quality, on the order of **\$50 - \$120 billion** from 2020-2050 (based on reduced mortality and other health outcomes)
 - Benefits would be experienced **throughout the state** and downwind of the state in neighboring states.
 - Benefits of reduced fossil fuel combustion are **higher in urban areas** due to both higher emissions and larger impacted population.
 - Although no strategies target wood combustion specifically, **upstate areas** experience benefits of from reduced wood combustion due to electrification and energy efficiency.
 - Annual benefits **grow over time** as pollution rates decrease.
- In addition, we estimate other related potential health benefits:
 - **\$40 billion** associated with the health benefits of increased **active transportation** (e.g., walking, cycling)
 - **\$9 billion** associated with energy **efficiency interventions** in **low- and moderate-income homes** (additional benefits, not quantified, may occur in other buildings as well)

2022 Next Steps

Next Steps

Public comment period open through end of April 2022

- > To identify areas where additional **clarity** is needed in the scoping plan
- > To further understand **relevant needs and priorities** of members of the public and how they connect to existing (or additional) climate strategies
- > Highlight where New York **residents and businesses can participate** in achieving the State's climate goals

Public and stakeholder input will occur in parallel to complementary continued analysis, speaker series input, and CAC discussion

- > **Written comment (now through April 2022):** Written comments and questions to be shared by members of the public with the CAC via written format
- > **Public hearings (March/April 2022):** In-person and virtual hearings to take input directly from the public
- > **Stakeholder engagement (March 2022 +):** Targeted stakeholder engagement

Scoping Plan Outreach

In addition to info sessions, speaker series, and public hearings supporting the release of the draft scoping plan, outreach will include:

> Traditional and social media

- Issue press release when draft scoping plan is made public, efforts to date and releases--draft definition of DACs, Just Transition Working Group Jobs Report, Barriers Report, and Greenhouse Gas Emissions Report.
- Revamp climate.ny.gov website to serve as home for the draft scoping plan and provide additional resources for the public to review and provide comment.
- Social media campaign to drive awareness of the website and messaging around key sectors.

> *Moving forward*

- Developing broader campaign to communicate with New Yorkers about CLCPA implementation.
- Working closely with key partners to identify opportunities to engage stakeholders and leverage existing networks of support