

Via email to scopingplan@nyserda.ny.gov

June 30, 2022

Draft Scoping Plan Comments
NYSERDA
17 Columbia Circle
Albany, NY 12203-6399

Re: *Comments on the Climate Action Council Draft Scoping Plan*

Dear Members of the Climate Action Council:

Thank you for the opportunity to comment on the Climate Leadership and Community Protection Act (“CLCPA”) Draft Scoping Plan. The attached comments were written by a coalition of environmental, environmental justice, labor, and economic justice groups across New York State including New York Renews, People United for Sustainable Housing Buffalo (“PUSH Buffalo”), the New York City Environmental Justice Alliance, Alliance for a Greater New York, Alliance for a Green Energy Economy, Sierra Club, Environmental Advocates New York, and Earthjustice.¹

The comments are divided into eleven chapters: Agriculture & Forestry, Buildings, Economy-wide Measures, Electricity Generation, Energy Intensive and Trade-Exposed Industry, Gas Transition, Just Transition, Land Use & Local Government, Public Health, Transportation,

¹ We submit these comments on behalf of Acadia Center, All Our Energy, Alliance for a Greater New York, Alliance for a Green Economy, Brookhaven Landfill Action and Remediation Group, Catskill Mountainkeeper, Clean Air Coalition of WNY, Climate Reality Project, Finger Lakes Greater Region NY Chapter, Climate Reality Project, Hudson Valley and Catskills Chapter, Climate Reality Project, NYC, Climate Reality Project, Westchester NY Chapter, Climate Reality Project, Capital Region NY Chapter, Climate Reality Project, Western New York Chapter, Climate Reality Project, Long Island Chapter, Climate Solutions Accelerator of the Genesee-Finger Lakes Region, Coalition for Outreach, Policy & Education, Committee to Preserve the Finger Lakes, Community Food Advocates, CUNY Urban Food Policy Institute, Dryden Resource Awareness Coalition, Earthjustice, E2 (Environmental Entrepreneurs), Environmental Advocates New York, Fossil Free Tompkins, Friends of the Earth, Gas Free Seneca, Grassroots Environmental Education, Green Education and Legal Fund, GreenLatinos, HabitatMap, Hotshot Hotwires, Jobs to Move America, Long Island Progressive Coalition, Nassau Hiking & Outdoor Club, Natural Resources Defense Council, Network for a Sustainable Tomorrow, New York City Environmental Justice Alliance, New York Clinicians for Climate Action, New York Renews (“NY Renews”), New York State Public Health Association, North Brooklyn Neighbors, Northeast Organic Farming Association of New York, Inc., People of Albany United for Safe Energy, PUSH Buffalo, Rewiring America, Riverkeeper Inc., Roctricity, Sane Energy Project, Seneca Lake Guardian, Sierra Club, South Shore Audubon Society, Sustainable Finger Lakes, Tri-State Transportation Campaign, Union of Concerned Scientists, University Network for Human Rights, UPROSE, WE ACT for Environmental Justice, and 350NYC. As indicated in the signature blocks below, some organizations have signed onto the whole submission while others have signed onto certain chapters based on their particular interests and areas of expertise.

and Waste. While each chapter covers a different sector or issue addressed by the Draft Scoping Plan, certain principles underpin our comments throughout this submission.

First, environmental justice is paramount. The State must prioritize the health and welfare of low-income communities and communities of color at the frontlines of the climate crisis. The Final Scoping Plan should include strong public health guidelines, labor standards, and recommendations to frontload climate investments, emissions reductions, and workforce training programs in Disadvantaged Communities.

Second, electrification is essential to decarbonizing the transportation and building sectors. Electrification generates enormous public health and economic benefits in addition to achieving mandated greenhouse gas reductions. The CLCPA's 2030 economy-wide emission limits are fast approaching. New Yorkers need a plan that will maximize near-term emission reductions by rapidly accelerating deployment of all viable zero-emission solutions, which will eliminate local exposure to toxic co-pollutant emissions. The technology is feasible today: we simply need the political will to shift public and ratepayer investments from unsustainable systems to electrification.

Third, the State must reject false solutions including offsets and alternative fuels such as biomethane, biofuels, and hydrogen. Production and combustion of these fuels results in significant greenhouse gas emissions and co-pollutants—which create health threats that disproportionately impact communities of color and low-income communities—and will only delay the necessary transition to electrification. Instead, we call for a plan that transitions away from an extractive, fossil fuel-based economy to the maximum extent feasible. Any determinations that a given sector is hard-to-electrify today must be adequately justified through a rigorous technological determination, rather than the appeals of incumbent industries. Moreover, such determinations should be revisited periodically given the rapid development of zero-emission technologies.

Thank you for your time and attention. We look forward to continuing the conversation as the Climate Action Council develops the final scoping plan by January 1.

Respectfully submitted,

Acadia Center (All Chapters)

All Our Energy (Buildings, Economy-wide Measures, Electric Sector, Energy Intensive and Trade-Exposed Industry, Gas Transition, Just Transition, Transportation, Waste Chapters)

Alliance for a Greater New York (Just Transition Chapter)

Alliance for a Green Economy (All Chapters)

Brookhaven Landfill Action and Remediation Group (All Chapters)

Catskill Mountainkeeper (Agriculture & Forestry, Economy-wide Measures, Electric Sector, Energy Intensive and Trade-Exposed Industry, Gas Transition, Just Transition, Land Use & Local Government, Public Health, Transportation, Waste Chapters)

Clean Air Coalition of WNY (All Chapters)
 Climate Reality Project, Capital Region NY Chapter (All Chapters)
 Climate Reality Project, Finger Lakes Greater Region NY Chapter (All Chapters)
 Climate Reality Project, Long Island Chapter (All Chapters)
 Climate Reality Project, NYC (All Chapters)
 Climate Reality Project, Westchester NY Chapter (All Chapters)
 Climate Reality Project, Western New York Chapter (All Chapters)
 Climate Reality, Hudson Valley and Catskills Chapter (All Chapters)
 Climate Solutions Accelerator of the Genesee-Finger Lakes Region (Buildings, Economy-wide Measures, Electric Sector, Energy Intensive and Trade-Exposed Industry, Gas Transition, Just Transition, Land Use & Local Government, Public Health, Transportation, Waste Chapters)
 Coalition for Outreach, Policy & Education (Energy Intensive and Trade-Exposed Industry Chapter)
 Committee to Preserve the Finger Lakes (All Chapters)
 Community Food Advocates (All Chapters)
 CUNY Urban Food Policy Institute (All Chapters)
 Dryden Resource Awareness Coalition (Energy Intensive and Trade-Exposed Industry Chapter)
 E2 (Environmental Entrepreneurs) (Just Transition Chapter)
 Earthjustice (All Chapters)
 Environmental Advocates NY (All Chapters)
 Fossil Free Tompkins (All Chapters)
 Friends of the Earth (Agriculture & Forestry Chapter)
 Gas Free Seneca (All Chapters)
 Grassroots Environment Education (Energy Intensive and Trade-Exposed Industry, Land Use & Local Government, and Public Health Chapters)
 Green Education and Legal Fund (All Chapters)
 Green Latinos (Just Transition, Transportation Chapters)
 HabitatMap (All Chapters)
 Hotshot Hotwires (All Chapters)
 Jobs to Move America (Economy-Wide Measures, Just Transition, Transportation Chapters)
 Long Island Progressive Coalition (All Chapters)
 Nassau Hiking & Outdoor Club (All Chapters)
 Natural Resources Defense Council (Agriculture & Forestry Chapter)
 Network for a Sustainable Tomorrow (All Chapters)
 New York City Environmental Justice Alliance (Land Use & Local Government, Public Health, Transportation Chapters)
 New York Clinicians for Climate Action (All Chapters)
 New York State Public Health Association (Public Health Chapter)
 North Brooklyn Neighbors (All Chapters)
 Northeast Organic Farming Association of New York, Inc. (NOFA-NY) (Agriculture & Forestry)
 NY Renews (All Chapters)
 People of Albany United for Safe Energy) (All Chapters)

PUSH Buffalo (Buildings, Electric Sector, Gas Transition, Energy Intensive and Trade-Exposed Industry, Just Transition, Land Use & Local Government, Public Health, Transportation Chapters)
Rewiring America (Buildings Chapter)
Riverkeeper Inc. (Agriculture & Forestry, Electric Sector, Land Use & Local Government Chapters)
Roctricity (All Chapters)
Sane Energy Project (Buildings, Energy Intensive and Trade-Exposed Industry, Gas Transition, Just Transition, Public Health Chapters)
Seneca Lake Guardian (All Chapters)
Sierra Club (Agriculture & Forestry, Buildings, Energy Intensive and Trade-Exposed Industry, Electric Sector, Gas Transition, Land Use & Local Government, Public Health, Transportation, Waste Chapters)
South Shore Audubon Society (All Chapters)
Sustainable Finger Lakes (Agriculture & Forestry, Buildings, Economy-wide Measures, Electric Sector, Energy Intensive and Trade-Exposed Industry, Just Transition, Land Use & Local Government, Waste Chapters)
Tri-State Transportation Campaign (Just Transition, Transportation Chapters)
Union Of Concerned Scientists (Transportation Chapter)
University Network for Human Rights (All Chapters)
UPROSE (All Chapters)
WE ACT for Environmental Justice (All Chapters)
350NYC (Buildings, Transportation, Waste Chapters)

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Agriculture and Forestry

I. Introduction

The contributions of the Agriculture and Forestry sectors to greenhouse gas (“GHG”) emissions are often overlooked in the discussion on climate change. Agricultural activities and forest management for commercial products are both major sources of greenhouse gases, and state governments have numerous tools at their disposal to transform these sectors to help mitigate catastrophic climate change.

The Agriculture and Forestry sectors provide unique opportunities for climate change mitigation because they impact GHG sources *and* sinks. New York’s 18.6 million acres of forest play a critical role in sequestering carbon, supporting biodiversity, and providing numerous other ecosystem services.¹ The conservation and restoration of the state’s existing forests, as well as reforestation of previously forested areas, are critical to achieving New York’s climate targets. However, many of the strategies in the Draft Scoping Plan (“DSP”) related to forestry seek to protect the profitability of the forestry industry rather than maximizing climate benefits. The

¹ N.Y. Climate Action Council, *Draft Scoping Plan* (“DSP”), 194 (2021), <https://climate.ny.gov/-/media/Project/Climate/Files/Draft-Scoping-Plan.pdf>.

Final Scoping Plan (“FSP”) should ensure that pressures from the forestry industry to harvest and generate forest crops do not threaten the preservation of New York’s forests. Additionally, the FSP should not offer New York’s forests as an excuse for delaying action on reducing fossil fuel emissions through offset programs, which are scientifically unsound and strongly opposed by many environmental justice groups.

The State Department of Environmental Conservation (“DEC”) indicates that agriculture is responsible for 6% of total state GHG emissions, and that 92% of those emissions come from livestock.² Unlike other sectors in New York where emissions have already decreased, livestock management emissions have increased 44% since 1990.³ And unlike the energy sector, whose contributions to climate change are largely in the form of carbon dioxide, agricultural emissions include methane, nitrous oxide, and carbon dioxide. Over 20 years, methane has a global warming potential about 84 times greater than carbon dioxide, and nitrous oxide has a global warming potential about 264 times greater than carbon dioxide.⁴ Despite the impact of these emissions, the DSP fails to include any mandatory strategies to regulate methane emissions from livestock. The FSP should include greater accountability and transparency across all strategies related to reducing emissions from livestock and croplands and strategies related to increasing soil carbon storage.⁵

The DSP acknowledges the significance of the Agriculture and Forestry sectors to climate change mitigation and proposes many effective approaches to curbing their greenhouse gas contributions. However, the urgency of achieving the Climate Leadership and Community Protection Act (“CLCPA”)’s ambitious goals calls for more transformative and creative approaches. Below, we provide recommendations to maximize the efficacy of the Plan’s agriculture and forestry strategy.

II. Sustainable Forest Management

A. The Final Scoping Plan Should Prioritize Reforestation and Forest Preservation Efforts, Which Provide the Maximum Climate Benefit, Rather Than Promoting Strategies Designed to Profit the Forestry Industry

Several strategies under the Sustainable Forest Management section of the DSP are based on a mischaracterization of forest carbon cycling in New York. These strategies are designed to support the forestry industry rather than to maximize climate benefits. The FSP must revisit these assumptions and only make recommendations based on accurate climate impact accounting,

² N.Y. Dep’t of Env’t Conservation (“DEC”), *Agriculture Forestry, and Other Land Use: 2021 NYS Greenhouse Gas Emissions Report*, at 3, tbl. SR3.3, https://www.dec.ny.gov/docs/administration_pdf/ghgafolu21.pdf.

³ *Id.*

⁴ Intergovernmental Panel on Climate Change Working Groups I, II and III, *Climate Change 2014: Synthesis Report* 87 box 3.2 tbl.1 (2014), https://www.ipcc.ch/site/assets/uploads/2018/02/SYR_AR5_FINAL_full.pdf; see also Eastern Rsch. Grp. Inc., *Technical Documentation: Estimating Energy Sector Greenhouse Gas Emission Under New York State’s Climate Leadership and Community Protection Act* 65 app. E (2021), https://www.dec.ny.gov/docs/administration_pdf/energyghgerg.pdf.

⁵ See generally Peter H. Lehner & Nathan A. Rosenberg, *Advancing Climate-Neutral Agriculture in New York, Viewpoint*, 33 *Env’t Law in N.Y.* (2022) [attached as Exhibit A].

rather than relying on biased accounting promoted by industry to suggest that harvesting provides a climate benefit.

The DSP claims that “[t]o maximize New York forests carbon sequestration potential, it is critical that forest management activities *increase* statewide,” because the “carbon sequestration rate has slowed” in New York’s forests.⁶ This flawed framing is used to justify removals from forests, despite clear scientific evidence that allowing New York forests to remain intact will generally provide the maximum climate benefit. There are several reasons why this is so.

First, most forest stands in New York are predicted to have positive growth increments for several decades absent accelerated harvesting intensities. The majority of forest stands in the northeast are relatively young and are dominated by growth following the abandonment of agricultural fields in the region in the mid-1800s.⁷ The mean age of forest stands in New York is between 60–70 years old, with most forest stands comprised of younger trees.⁸ This transition from agricultural activities has allowed northeastern forests to play a unique, ongoing role in mitigating climate change. While global anthropogenic activities have dramatically increased atmospheric carbon dioxide concentrations, northeastern forests continue to help counteract these emissions by sequestering more than a megaton of carbon per hectare annually through photosynthesis.⁹ Forest stands with trees between 70–100 years hold the greatest densities of carbon in the state, and these older stands also continue to sequester significant quantities of carbon.¹⁰ Protected from harvest, New York forests have the potential to continue to sequester carbon at increasing or stable rates for several decades. However, harvesting reduces the capacity of these forests to continue functioning as a carbon sink.

Second, losses in carbon stocks following harvest are not compensated by new growth in timescales relevant to New York state’s climate action planning. In northeastern forests, it takes several decades to recover from the debt of carbon removals following harvest to arrive back at pre-harvest carbon stocks.

Third, this period of regrowth represents a lost opportunity for existing forest growth to continue to accrue carbon, as would have occurred in the absence of disturbance. The continued

⁶ DSP at 198–199 (emphasis added).

⁷ See Jana E. Compton & Richard D. Boone, *Long-term Impacts of Agriculture on Soil Carbon and Nitrogen in New England Forests*, 81 *Ecology* 8 (2000) [attached as Exhibit B]; see also Charles V. Cogbill et al., *The Forests of Presettlement New England, USA: Spatial and Compositional Patterns Based on Town Proprietor Surveys*, 29 *J. Biogeography* 1279 (2002) [attached as Exhibit C].

⁸ See Yude Pan et al., *Age Structure and Disturbance Legacy of North American Forests*, 8 *Biogeosciences* 715 (2011); see also Richard H. Widmann et al., U.S. Dep’t of Agric., *New York Forests*, at 97, fig.70 (2012), https://www.fs.fed.us/nrs/pubs/rb/rb_nrs98.pdf.

⁹ See Xiaoliang Lu et al., *Land Carbon Sequestration within the Conterminous United States: Regional- and State-Level Analyses*, 120 *J. Geophysical Resch.*; *Biogeosciences* 379 (2015); see also Thomas Buchholz et al., Cary Institute of Ecosystem Studies, *Forest Biomass and Bioenergy: Opportunities and Constraints in the Northeastern United States* (2011), https://www.caryinstitute.org/sites/default/files/public/downloads/report_biomass.pdf.

¹⁰ See *Forest Inventory & One Click Factsheet*, U.S. Dep’t of Agric. (“USDA”), <https://public.tableau.com/views/FIA>.

<https://public.tableau.com/views/FIA> [OneClick_V1_2/StateSelection?:showVizHome=no](https://public.tableau.com/views/FIA); see also Forest Res. Ass’n. *Forest Carbon Report: New York* (2021), <https://live-forest-resources-association.pantheonsite.io/wp-content/uploads/2021/12/New-York.pdf>.

harvesting of these forests as they mature not only reduces stored carbon but also eliminates the sequestration that continued growth would otherwise provide. Accounting for this opportunity cost is often left out of assessments on the sustainability of bioenergy harvesting and other evaluations of forest management planning.

Fourth, harvesting these forests, including the removal of biomass for bioenergy, leads to additional emissions from harvesting activities, burning, transportation, and manufacture of wood products.¹¹

The forest industry's claims and the strategies in this section of the DSP wholly overlook these critical facts. Harvesting biomass sets the clock back on carbon sequestration and weakens one of our strongest defenses against increasing atmospheric greenhouse gases. The FSP must recognize the fundamental benefits of leaving forests intact and carefully account for this potential for continued carbon sequestration in any forest management proposals that suggest harvesting as a climate mitigation strategy.

Despite their important functions, only 6% of forestland in the northeastern U.S. is legally preserved from harvest.¹² While logging efforts may not consume a large proportion of the landscape, these removals consume over 50% of *net* growth in New York State (i.e., the change in biomass that remains in undisturbed forests following natural causes of tree mortality), already significantly reducing the potential of these systems to sequester carbon.¹³

The Land Use chapter of the DSP provides a more accurate account of the climate benefits of allowing New York's forests to remain as forests than what is contained in the Sustainable Forest Management section:

New York has 18.6 million acres of forests, which hold an estimated 1,911 MMT of carbon. In addition to carbon sequestration and storage, New York's forests provide wildlife habitat, forest products, flood mitigation, recreational opportunities, and mental health benefits, and protect the State's air and water quality. *Forestlands in many parts of the State are under pressure from development and forest conversion, which is causing a steady decline in the amount of CO₂ being absorbed each year. Keeping forests as forests is critical to maintaining and increasing levels of carbon sequestration and storage and preventing emissions, as forests sequester and store much more carbon than any other land use in New York.* State and municipal land acquisition provide the most reliable long-term protection of forested areas from land conversion. There are currently 4.8 million acres of forestland owned by the State, local municipalities, or land trusts in New York. In 2020, 6,005 acres of land were protected through acquisition by DEC and OPRHP and 14 grants were awarded to protect forests

¹¹ See Tara W. Hudiburg et al., *Regional Carbon Dioxide Implications of Forest Bioenergy Production*, 1 Nature Climate Change 419 (2011) [attached as Exhibit D].

¹² Thomas Buchholz et al., Cary Institute of Ecosystem Studies, *Forest Biomass and Bioenergy: Opportunities and Constraints in the Northeastern United States* 14 (2011), https://www.caryinstitute.org/sites/default/files/public/downloads/report_biomass.pdf.

¹³ Buchholz et al., *supra* note 12, at 19; see also Widmann et al., *supra* note 8.

through the Conservation Partnership Program. *To maintain the State’s carbon storage and sequestration levels, additional protection is needed, which can be accomplished through land acquisition and conservation easements.*¹⁴

Thus, the FSP should ensure recommendations related to forests are internally consistent and it should focus on strategies to incentivize forest conservation, protection, and afforestation and reforestation efforts as laid out in the Land Use chapter rather than conflicting incentives to manage forests for forest products as described in the Agriculture and Forestry chapter.

The FSP must accurately reflect the climate benefits of allowing New York’s forests to remain intact and continue to sequester carbon as they age. As described in greater detail below, the Climate Action Council should re-evaluate the strategies currently within AF1-8 and eliminate those that incentivize removals from New York’s forests, including, for example, tax breaks for the development of forest management plans to produce and harvest forest crops. The DSP offers potential remedies to level the playing field and encourage private landowners to keep forest land intact. However, the FSP must ensure that these new programs are at least equally attractive as existing harvesting incentives. Additionally, the FSP should eliminate recommendations that offer forest carbon sequestration as an opportunity to purchase offsets—rather than actually reduce—fossil fuel emissions. Finally, the FSP should include mechanisms for close oversight of any funding directed towards forest harvesting equipment.

B. The Final Scoping Plan Should Ensure That Benefits for Private Forest Landowners Who Manage for Carbon Sequestration or Conserve Their Forests in Natural Conditions are *At Least* Equal to Benefits for Private Forest Landowners Who Manage for Wood Products

The DSP includes recommendations for amending Real Property Tax Law 480a and enacting new legislation to include tax incentives for private forest landowners to manage for multiple benefits including wildlife habitat and carbon sequestration or to conserve their forests in natural conditions. These recommendations will help reduce the incentive in Real Property Tax Law 480a to harvest forests. However, the DSP states that “[i]nitial benefits” of these new tax incentives—which will be contained in a new section 480b—“should start at a lower level than 480a and 480c with up to 100% reimbursement to municipalities.”¹⁵ While these amendments will help incentivize landowners to keep forested land intact, the FSP should ensure that abatement rates for forest landowners managing their forests for wildlife habitat or carbon sequestration or conserving their forests in natural conditions are offered benefits *at least* equal to those available to forest landowners managing for wood products or other harvesting activities. Absent a level playing field for these outcomes with clear climate benefits, the FSP will not go far enough to protect New York forests from harvest.

¹⁴ DSP at 276. (emphasis added).

¹⁵ DSP at 204.

C. The Final Scoping Plan Should Not Include AF6, Which Relies on Dangerous and Ineffective Offsetting of Fossil Fuel Emissions Through Forest Carbon Sequestration

The FSP should not include AF6, which suggests that carbon sequestration in New York State forests may be used to offset emissions from other sectors. Forest carbon sequestration should not be used to allow fossil fuel emissions from other sectors to persist. Fossil fuel polluters should not be allowed to circumvent their responsibility to curb direct emissions by claiming to offset them by purchasing impermanent carbon gains elsewhere.

Such offset schemes seek to avoid accountability for direct emissions of greenhouse gases with uncertain, imprecise and difficult-to-monitor supposed increases in carbon stocks elsewhere. These offset schemes are premised on a scientific fallacy that equates increases in carbon stocks in soil and vegetation with past and ongoing losses of fossil carbon. However, these are not at all equivalent. It is critical to note that climate change is primarily attributed to the removal of large amounts of *fossil* carbon, which would have remained sequestered in the absence of anthropogenic activities. In contrast to these slow-cycling fossil stocks, carbon in biogenic pools including vegetation and soils in New York forests is inherently impermanent and perpetually vulnerable to decomposition. Thus, offsets should not be allowed to delay irreversible losses of fossil carbon. Carbon sequestration rates in New York state should be restored and accelerated (for example, through strategies to incentivize reforestation described in the Land Use chapter) in parallel with independent reductions in fossil fuel emissions.

The FSP should also take heed of the failures of past market-based approaches to regulating pollution that allow for offsets. As noted in our comments on economy-wide mechanisms and by the Climate Justice Working Group (“CJWG”), environmental justice communities have historically not benefited from—and indeed have often been harmed by—offset market-based policies though they are the most burdened by pollution-generating facilities. For example, one leading study found that California’s cap-and-trade policy, which represents a market scheme that permits offsets, has exacerbated environmental injustice. An analysis of the program found that (1) regulated facilities were disproportionately sited in environmental justice neighborhoods, (2) most of the regulated facilities increased emissions of both GHGs and co-pollutants during the time period studied, and (3) neighborhoods that experienced increases in both annual average GHGs and annual average co-pollutants were more likely to be environmental justice neighborhoods.¹⁶ This study also concluded that the use of offsets allowed regulated facilities to keep polluting (and degrading local air quality) by purchasing offsets from projects largely out-of-state that provided no benefit to frontline communities.¹⁷ To avoid replicating these type of harms, the FSP must consider non-GHG co-pollutants and local environmental impacts to environmental justice communities and thus avoid offering New York forests as an opportunity to offset fossil fuel emissions.

There is simply no substitute for directly reducing fossil fuel emissions. Such reductions are critical to achieving climate targets as well as environmental justice goals as pollution

¹⁶ See Lara Cushing et al., *Carbon Trading, Co-pollutants, and Environmental Equity: Evidence from California’s Cap-and-Trade Program (2011–2015)*, 15 PLOS Med. e1002604 (2018).

¹⁷ See *id.*

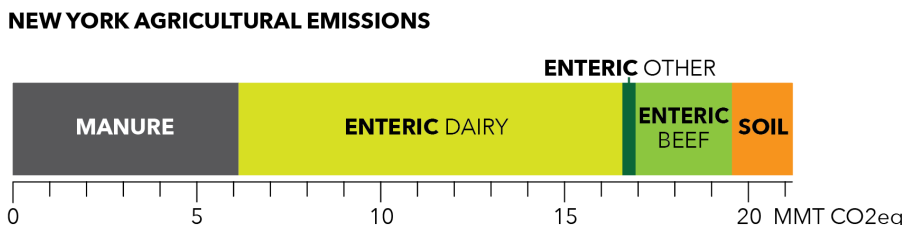
hotspots disproportionately burden low-income communities and communities of color. The FSP should not support accounting that allows avoidable ongoing fossil fuel emissions to persist based on offsets.

D. The Final Scoping Plan Should Require Close Oversight of Any Grants for Logging and Manufacturing Equipment to Ensure These Programs Do Not Inadvertently Support Increased Harvesting at the Expense of Conservation

Under AF3, the DSP recommends investments in logging and manufacturing equipment as a strategy to reduce site impacts associated with harvesting activities. While foresters should be required to adopt strategies to reduce site impacts, the FSP should ensure that funding such equipment does not further incentivize forest harvests over allowing New York forests to remain intact. If DEC provides foresters with funding for adopting such technology, it should include close oversight of grants to ensure forest management planning accurately accounts for the climate benefits of avoiding harvesting (as described above).

III. Livestock Management

New York ranks third for the number of milk cows in farms across the state, and is among the top five largest dairy-producing states in the country.¹⁸ Its scale of production is associated with large, concentrated emissions of methane. Manure management and enteric fermentation from livestock account for 92% of New York’s agricultural greenhouse gas emissions.¹⁹ In 2019, manure management released over 6 million metric tons of CO₂ equivalents (MMT CO₂eq), and enteric fermentation released over 13 MMT CO₂eq as methane (*see figure below*).²⁰



Livestock emissions in New York are heavily concentrated in the largest concentrated animal feeding operations (CAFOs). In 2017, out of over 4,600 dairy farms in New York, only 142 farms—3% of all dairy farms in New York—had herd sizes over 1,000 milk cows, and only an additional 141 farms had herd sizes between 500 and 999 milk cows.²¹ Just 6% of New York

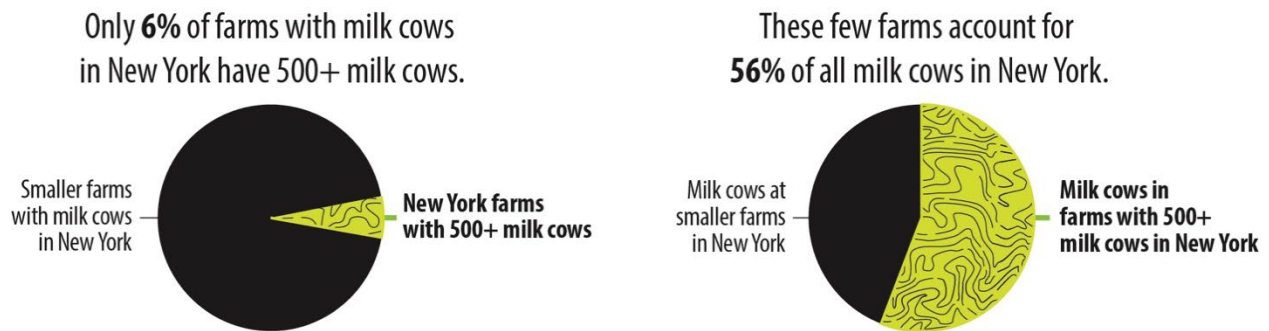
¹⁸ USDA, Statistical Bull. No. 1055, *Milk Cows and Production Final Estimates 2013-2017* 7, 9 (2019), <https://downloads.usda.library.cornell.edu/usda-esmis/files/cz30ps66x/jd473517g/bk128k88x/mcprsb19.pdf>; *see also Farm Milk Production*, USDA, Econ. Rsch. Serv., <https://www.ers.usda.gov/topics/animal-products/dairy/background/> (last updated Apr. 27, 2022).

¹⁹ N.Y. DEC, *supra* note 2 at 3, tbl.SR3.3.

²⁰ *Id.*

²¹ USDA, AC-17-A-32, *Census of Agriculture*, 23 tbl.17 (2019), https://www.nass.usda.gov/Publications/AgCensus/2017/Full_Report/Volume_1_Chapter_1_State_Level/New_York/nyv1.pdf.

dairies account for 56% of New York’s dairy cow population (*see figure below*), and are thus responsible for the majority of methane emissions from both enteric fermentation and manure management.²² This provides an opportunity to tailor policies for reducing livestock methane based on farm size. New York’s limited funding should be prioritized to support small-and mid-size farms in controlling their emissions. The largest producers, on the other hand, should be required to control their emissions without financial support (or with much lower financial support) from the state. Focusing climate mitigation efforts on these large operations should be a priority for reducing New York’s total greenhouse gas emissions.



A. The Final Scoping Plan Should Include Regulatory Options, as Authorized Under the Environmental Conservation Law (“ECL”) and Consistent with the CLCPA, for Reducing Methane Emissions

1. DEC Has a Mandate and Authority to Regulate Methane Emissions from New York’s Largest CAFOs

Under New York law, “[i]t *shall* be the responsibility of the department, in accordance with such existing provisions and limitations as may be elsewhere set forth in law, by and through the commissioner to carry out the environmental policy of the state set forth in section 1-0101 of this chapter.” ECL § 3-0301(1) (emphasis added). That environmental policy, in turn, is “to conserve, improve and protect [New York’s] natural resources and environment and to prevent, abate and control water, land and air pollution, in order to enhance the health, safety and welfare of the people of the state and their overall economic and social well being.” ECL § 1-0101(1). New York’s laws specific to air pollution additionally mandate that DEC “require the use of all available practical and reasonable methods to prevent and control air pollution in the state of New York.” ECL § 19-0103.

There is no question that methane is considered “air pollution” under the statute, as the term is broadly defined as:

the presence in the outdoor atmosphere of one or more air contaminants in quantities, of characteristics and of a duration which are injurious to human, plant or animal life or to property or which unreasonably interfere with the comfortable

²² *Id.*

enjoyment of life and property throughout the state or throughout such areas of the state as shall be affected thereby. . .

ECL § 19-0107(3). Given methane’s tremendous global warming potential, and the New York legislature’s finding in the CLCPA that “climate change is adversely affecting economic well-being, public health, natural resources, and the environment of New York,” 2019 NY Senate-Assembly Bill S6599, A8429 § 1 (“CLCPA”), DEC is required by statute to abate this pollution. And under New York law, it must use “all available practical and reasonable methods to prevent and control” this air pollution—i.e., methane emissions—in the state. ECL § 19-0103.

DEC is also empowered to “[f]ormulate, adopt and promulgate, amend and repeal codes and rules and regulations for preventing, controlling or prohibiting air pollution in such areas of the state as shall or may be affected by air pollution,” including requiring permits or certificates. ECL § 19-0301(1)(a). DEC is given explicit authority to “[i]nclude in any such codes and rules and regulations provisions establishing areas of the state and prescribing for such areas (1) the degree of air pollution or air contamination that may be permitted therein, [and] (2) the extent to which air contaminants may be emitted to the air by any air contamination source.”²³ “Air contamination source” is defined as “any source at, from or by reason of which there is emitted into the atmosphere any air contaminant” and clearly encompasses livestock. ECL § 19-0107(5). DEC can thus use its authority under this provision to regulate methane emissions from CAFOs.

2. The CLCPA Does Not Limit DEC’s Authority to Regulate Livestock Emissions

The CLCPA requires DEC to promulgate regulations “to ensure compliance with” the CLCPA’s new greenhouse gas emission targets. CLCPA § 2 (amending ECL § 75-0109(1)). These regulations must “include legally enforceable emissions limits, performance standards, or measures or other requirements to control emissions from greenhouse gas emission sources, with the exception of agricultural emissions from livestock.” *Id.* (amending ECL § 75-0109(2)(b)). This does not limit the authority DEC already had under the ECL to regulate methane emissions from livestock, for several reasons.

First, emissions that emanate from manure and grazing lands are not “from” the livestock, but rather are a result of how manure and grazing lands are managed by farmers and ranchers. (Emissions from municipal sewage treatment plants, similarly, are not considered to be “from humans”.) Thus, the plain language makes clear the legislature’s intent that DEC retain authority to promulgate legally enforceable emissions limits or performance standards relating to manure GHG emissions.

Second, the exception occurs in the paragraph imposing a mandate on DEC that it *must* regulate certain sources: “The regulations promulgated by [DEC] *shall*: . . . Include legally enforceable emissions limits, performance standards, or measures or other requirements to control emissions from greenhouse gas emissions sources, with the exception of agricultural

²³ ECL § 19-0301(1)(b); *see also* ECL §§ 3-0301(1)(a)–(b); §§ 3-0301 (2)(a), (m) (stating DEC’s authority to issue rules and regulations to carry out state’s general environmental policy).

emissions from livestock.” CLCPA § 2 (amending ECL § 75-0109(2)(b)) (emphasis added). A close reading suggests that DEC *may* impose enforceable emission limits; it is only that the CLCPA does not *require* DEC to do so under the aegis of the CLCPA.

3. Regulating Methane Emissions from CAFOs Would Be Feasible and Come at Reasonable Cost to CAFOs

Not only *can* DEC regulate methane from CAFOs, but the costs of such regulation are reasonable and would be easily borne by the industry’s largest operations. Several existing practices and mitigation strategies can curb these emissions at reasonable cost. CAFO operators can reduce methane generation by shifting more production to pasture-based systems or implementing dry manure management and greater solid/liquid separation at reasonable cost. As described below, these and other transformative shifts should be a priority in the FSP as they achieve greater emission reductions along with many other environmental and social co-benefits.

However, we recognize that at best it will take significant time to transition New York dairies from the current CAFOs structure. CAFOs with liquid manure management can currently adopt technology to cover existing lagoons and flare methane emissions. While cover and flare systems do not address the large share of enteric methane emissions upstream of manure production or emissions from land application of liquid manure, they are preferable to open liquid manure lagoons. Recent studies show this practice is cost-effective and financially feasible in the context of large New York dairies. For example, researchers at Cornell University found that these systems cost about \$13 per megagram of carbon dioxide equivalent, or \$0.005 per liter milk.²⁴ A separate Cornell University study of 128 farms in New York found that net farm income among the top 20% of dairies with an average of 1,515 cows was \$1,112,949 (or \$735/cow) in 2017.²⁵ This cost of adoption is similar to costs borne by producers in other sectors to mitigate greenhouse gas pollution.

B. The Final Scoping Plan Should Include More Transformative Strategies for Reducing Manure Outside of Cover and Flare Systems and Digesters, Including Strategies to Reduce Manure Generation and Reducing Wet Storage

The FSP should focus much more on reducing methane generation upstream of emissions, unlike the DSP’s focus on methane destruction following production. This approach would be similar to the framework guiding waste management, where there is a primary preference for strategies leading to source reduction and reuse rather than simply treating produced waste.²⁶ While the DSP includes alternative manure management strategies in AF9, these strategies focus largely on end-of-lifecycle strategies to reduce emissions from manure

²⁴ Jennifer L. Wightman & Peter B. Woodbury, *New York Dairy Manure Management Greenhouse Gas Emissions and Mitigation Costs (1992-2022)*, 45 J. Env’t Quality 1 (2016).

²⁵ John Karszes, Cornell Univ., EB 2018-08, *Six Year Trend Analysis New York State Dairy Farms Selected Financial and Production Factors* (2018), <https://dyson.cornell.edu/wp-content/uploads/sites/5/2019/02/Cornell-Dyson-eb1808.pdf>.

²⁶ See *Sustainable Materials Management: Non-Hazardous Materials and Waste Management Hierarchy*, EPA, <https://www.epa.gov/smm/sustainable-materials-management-non-hazardous-materials-and-waste-management-hierarchy> (last updated Dec. 15, 2021).

storage rather than more transformative strategies focused on reducing manure generation and accumulation in the first place. We are especially concerned that any further public investment in the largest CAFOs in the state (as opposed to enacting regulations limiting methane emissions as discussed above) will only further exacerbate consolidation, concentration, and harm to our rural communities.

While cover and flare systems and other strategies listed in AF9 can reduce methane emissions, the FSP should also recommend more transformative practices upstream of manure storage and incentivize practices that smaller producers can adopt. The first priority in manure management should be generating less methane to begin with. For example, using dry manure management and transitioning to managed-pasture-based and lower-density farming reduces the concentration and quantity of stored manure, and thus the generation of methane, while also improving soil health. Additionally, best practices during the spreading of manure—such as spreading only the amount that plants need and can use and avoiding spreading on frozen or saturated soils—can prevent unnecessary emissions.²⁷ These practices also have significant air and water quality co-benefits.

Relying on end-of-process systems also is less certain as engineered systems often fail, leak, or are operated sub-optimally. Digesters have been found to have leakage rates of about 3–6%,²⁸ which largely undercuts their climate benefits, and which can even cause them to be net sources of methane.²⁹ Furthermore, biodigesters release additional pollutants such as NO_x, sulfur oxide, and particulate matter.³⁰ If the gas is then transported—through pipelines that also tend to have high leakage rates—the climate benefit is further reduced. These leaks not only increase the climate change impact, but they also endanger local communities. In addition, these systems do nothing to address enteric emissions or emissions from the land application of the liquid manure after digestion or flaring.

In allocating resources for these emissions reduction strategies, the FSP should prioritize financial support to small and mid-sized livestock operations, rather than the state's largest CAFOs. We suggest a cap on total funding awarded to large industrial CAFOs. Reducing methane emissions from large operations is essential to meet GHG emission targets, but these emissions can and should be controlled through regulatory safeguards (as described above) rather than through voluntary incentive mechanisms. New York's limited financial resources should support smaller operations, which often have thinner profit margins and face larger obstacles to

²⁷ See Adam Kotin et al., Cal. Climate & Agric. Network, *Diversified Strategies for Reducing Methane Emissions from Dairy Operations* (2015), <https://calclimateag.org/wp-content/uploads/2015/11/Diversified-Strategies-for-Methane-in-Dairies-Oct.-2015.pdf>; see also, Olga Gavrilova et al., Emissions From Livestock and Manure Management, 2019 Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories 67 tbl.10.17 (2019), https://www.ipcc-nggip.iges.or.jp/public/2019rf/pdf/4_Volume4/19R_V4_Ch10_Livestock.pdf.

²⁸ Lehner & Rosenberg, *supra* note 5 at 99 [attached as Exhibit A].

²⁹ See Felipe Montes et al., *Mitigation of Methane and Nitrous Oxide Emissions from Animal Operations: II. A Review of Manure Management Mitigation Options*, 91 J. Animal Sci. 5070 (2013); see also Mathieu Dumont et al., *Methane Emissions in Biogas Production*, Biogas Handbook (2013); see also [Thomas Fleisch, et al., Fugitive Methane Emissions from an Agricultural Biodigester](#), 34 Biomass & Bioenergy 3927 (2011); see also Jessica Fu, *Is California Giving Its Methane Digesters Too Much Credit?*, The Counter (May 19, 2022), <https://thecounter.org/is-california-giving-its-methane-digesters-too-much-credit/>.

³⁰ See Nicole G. Di Camillo, *Methane Digesters and Biogas Recovery - Masking the Environmental Consequences of Industrial Concentrated Livestock Production*, 29 UCLA J. Env't Law & Policy 367 (2011).

implementing sustainability practices.

In addition, the FSP should have explicit recommendations to increase the number and portion of organic operations in the state, aiming to at least double them by 2030 and double them again by 2040. For example, California calls for a doubling of organic agriculture by 2045 as a climate-smart strategy.³¹ These operations generally use systems that generate far less methane from manure—and through better manure, compost and soil management, less cropland GHG emissions as well—and thus reliably reduce GHG emissions. Increasing support and incentives for certified (and perhaps non-certified) organic operations through direct and market support (including State procurement and certification) can also increase the profitability and viability of these operations.

C. The Final Scoping Plan Should Include Strategies for Increasing Oversight and Data Transparency Related to Emissions and Practices at Large Industrial CAFOs.

The FSP should recommend strategies for greater oversight of manure management planning and reporting to quantify emissions. Currently, the EPA’s Greenhouse Gas Reporting Program requires livestock operations with manure management systems that have animal populations over a set threshold to report emissions of methane. *See* 40 C.F.R. § 98.360. The regulation applies to facilities using manure management systems including uncovered anaerobic lagoons, liquid/slurry systems with and without crust covers, storage pits, digesters, solid manure storage, dry lots (including feedlots), high-rise houses for poultry production, poultry production with litter, deep bedding systems for cattle and swine, manure composting, and aerobic treatment.³²

However, EPA is currently prevented from implementing or enforcing this regulation due to restrictions placed on it in legislative riders. For example, section 437 of the Consolidated Appropriations Act states: “Notwithstanding any other provision of law, none of the funds made available in this or any other Act may be used to implement any provision in a rule, if that provision requires mandatory reporting of greenhouse gas emissions from manure management systems.”³³ Thus, the full extent of emissions from manure management is not quantified well. In order to fully understand the scope of impact from this sector and achieve maximum emissions reduction, New York must gather these data from the largest of the state’s livestock operations. The FSP should include strategies to require such data reporting from the largest facilities, particularly those receiving public funding through state programs, and should make these data publicly available.

IV. The Final Scoping Plan Should Include More Transformative Strategies for Reducing Enteric Methane Emissions from Livestock, Such as Feed Additives and Reductions in Livestock Antibiotic Use

³¹ *See* Cal. Air Resources Bd., *Draft 2022 Scoping Plan Update* 65 (2022), <https://ww2.arb.ca.gov/sites/default/files/2022-05/2022-draft-sp.pdf>.

³² *Id.*

³³ Consolidated Appropriations Act, Public Law No. 116–260, 116th Cong. § 437 (2021).

In addition to manure management, New York’s meat and dairy operations release significant emissions directly from livestock as part of animals’ digestive processes. The DSP proposes several effective strategies to reduce enteric methane emissions under AF10, including precision feed and forage management. While we support the promotion and expansion of these methods, the FSP should also explore strategies to accelerate the adoption of feed additives and integrate strategies to promote reductions in antibiotic use.

As noted under AF10, numerous feed additives have demonstrated promising results in decreasing methane emissions from livestock, at least in the short-term. One study documented a 30% decrease in enteric methane emissions over 12 weeks with the addition of 3-nitrooxypropanol, a chemical compound that blocks an enzyme critical to methane formation.³⁴ Another promising study found that supplementing livestock feed with red seaweed resulted in an 80% reduction in enteric emissions from cattle over 5 months.³⁵ Scientists continue to develop new additives that may have even more promising results. The FSP should include recommendations to accelerate the adoption of feed additives (through nudges, incentives, fees, and possibly mandates) as a potential approach to achieving significant emissions reductions and should explore opportunities to fund accelerated research and outreach on the development of novel strategies to reduce enteric emissions.

Finally, eliminating nontherapeutic uses of antibiotics in livestock could also be an effective approach to reducing emissions. Studies indicate that antibiotics may alter microbial activities and have cascading consequences that lead to increased methane emissions.³⁶ This research indicates that—in addition to mitigating the public health risks of increasing antibiotic resistance—minimizing antibiotic use could also be an effective method for decreasing emissions. The FSP should examine the prohibition or restriction of unnecessary antibiotic use (to the extent that it’s still employed in New York), as well as any other emerging, science-based strategies for reducing enteric methane.

V. The Final Scoping Plan Should Focus on Strategies to Reduce Herd Size Which Could Accelerate Reductions in Both Manure and Enteric Emissions

The additions to AF9 and AF10 that we recommend above will help strengthen strategies to reduce emissions from manure and enteric fermentation from existing livestock. However, the DSP overlooks one key strategy entirely, which would reduce both enteric emissions and emissions from manure: the reduction in the number of livestock animals in New York State. As a long-term strategy, with appropriate support for a just transition for current producers, promoting dietary changes to reduce demand for dairy and beef products and thus ruminant livestock may be one of the strongest tools we have for reducing agricultural emissions. Given

³⁴ See Alexander Hristov et al., *An Inhibitor Persistently Decreased Enteric Methane Emission From Dairy Cows With No Negative Effect on Milk Production*, 112 Proc. Nat’l Acad. Sci. U.S. Am. 10663 (2015) (finding a 30% decrease in enteric methane emissions over 12 weeks with the addition of 3-nitrooxypropanol); see also J. Dijkstra et al., *Short Communication: Antimethanogenic Effects of 3-Nitrooxypropanol Depend on Supplementation Dose, Dietary Fiber Content, and Cattle Type*, 101 J. Dairy Sci. 9041 (2018) (A subsequent study to Hristov’s).

³⁵ See Breanna M. Roque et al., *Red Seaweed (Asparagopsis Taxiformis) Supplementation Reduces Enteric Methane by Over 80 Percent in Beef Steers* 16 PLoS ONE (2021).

³⁶ See Tobin J. Hammer et al., *Treating Cattle with Antibiotics Affects Greenhouse Gas Emissions, and Microbiota in Dung and Dung Beetles*, 283 Proceedings Royal Soc’y Biological Sci. (2016).

that current and chronic over-production of dairy products also creates pressure for prices below production costs, a careful effort to reduce supply could have significant producer benefits (as federal farm policy did before 1980).

In addition, meat and dairy alternatives also present an enormous business opportunity. Indeed, while demand for dairy and beef products is falling,³⁷ demand for plant-based alternatives is skyrocketing.³⁸ The plant-based meat and dairy products market was already an over \$29.4 billion industry in 2020—and is projected to reach \$162 billion by 2030.³⁹ There is also growing interest in “cultured meat” products, given recent technological innovations and an influx of public and private funding for research and development.⁴⁰ These trends have prompted New York-based producers to reassess their operations—and, in some cases, have inspired rapid changes in operations to meet shifts in consumer demand. For example, in 2017, Elmhurst—a former dairy operation that was founded in 1925—responded to the “steady decline in dairy consumption and the changing American diet” by reopening as a plant-based milk operation in Buffalo, New York.⁴¹ Like other efforts by producers to reimagine their operations, Elmhurst’s transition indicates that the growing plant-based sector offers New York producers an enormous market—especially if they get ahead of the curve.⁴²

Many studies have found lower GHG emissions throughout the full life cycle of both more plant-based diets and plant-based dairy and meat alternatives when compared to animal-based products.⁴³ In a carbon footprinting analysis of the USDA Foods Program based on one year of purchasing data, Friends of the Earth found that animal products were responsible for 98% of GHG emissions associated with the \$1.3 billion of food purchasing for this program.⁴⁴ The same analysis found that replacing 25% of USDA’s beef, pork, chicken, and cheese purchases with plant-based sources of protein would save 4 million metric tons of carbon dioxide

³⁷ See, e.g., Hayden Stewart et al., USDA Econ. Research Serv., *Examining the Decline in U.S. Per Capita Consumption of Fluid Cow’s Milk, 2003–18* (2021), <https://www.ers.usda.gov/webdocs/publications/102447/err-300.pdf?v=5705.9>.

³⁸ See Blake Byrne & Ryan Dowdy, *Demand for Plant-Based Meat is Growing. We Must Ensure Our Supply Chain Can Keep Up*, Good Food Institute (Jan. 21, 2022), <https://gfi.org/blog/meeting-plant-based-meat-demand/> (noting that “[i]n 2020, retail sales for plant-based alternatives grew twice as fast as overall food sales in the US” and that “[s]ales for plant-based meat in particular grew 45 percent.”).

³⁹ Bloomberg Intelligence, *Plant-Based Foods Poised for Explosive Growth* (2020), https://assets.bbhub.io/professional/sites/10/1102795_PlantBasedFoods.pdf.

⁴⁰ See Kate Aronoff, *Lab to Table*, New Republic (Sept. 29, 2021), <https://newrepublic.com/article/163554/lab-meat-save-planet>; Isaac Nicholas & Mike Silver, *Tufts Receives \$10 Million Grant to Help Develop Cultivated Meat*, TuftsNow (Oct. 15, 2021), <https://now.tufts.edu/articles/tufts-receives-10-million-grant-help-develop-cultivated-meat> (describing USDA funding for interdisciplinary research about cultured meat products).

⁴¹ *The Dairy That Gave Up Dairy*, Elmhurst, <https://elmhurst1925.com/pages/our-story> (last visited Mar. 29, 2022).

⁴² See Liz Susman Karp, *Farmers Trial Climate-Friendly Chickpeas in Upstate New York*, Civil Eats (May 3, 2022), <https://civileats.com/2022/05/03/farmers-trial-climate-friendly-chickpeas-in-upstate-new-york/> (describing a farm in the Finger Lakes region that transitioned to chickpea farming to meet demand spurred by “the popularity of plant-based products”).

⁴³ See Peter Newton & Daniel Blaustein-Rejto, *Social and Economic Opportunities and Challenges of Plant-Based and Cultured Meat for Rural Producers in the US*, Frontiers Sustainable Food Sys., (2021); see also Martin C. Heller et al., *Greenhouse Gas Emissions and Energy Use Associated with Production of Individual Self-Selected US Diets*, 13 *Env’t Rsch. Letters* (2018); see also World Resources Institute, *Creating a Sustainable Food Future* (2019), <https://files.wri.org/d8/s3fs-public/wri-food-full-report.pdf>.

⁴⁴ Friends of the Earth, *USDA Foods: How A \$1.3 Billion Program Can Be Transformed to Create a More Just and Healthy Food System* (2021), <https://foe.org/usda-foods>.

- Maintain year-round cover on at least 75% of cropland acres;
- Establish advanced grazing management on 100% of existing grazing land;
- Reduce GHG emissions related to the feeding of ruminants by at least 50% by reducing non-grazing of ruminants, growing feed grains and forages with soil health and nutrient practices that minimize net GHG emissions from cropland, and utilizing livestock feed mixtures and supplements to mitigate enteric methane emissions;
- Increase crop-livestock integration by at least 100% over 2017 levels; and convert at least two thirds of wet manure handling and storage to alternative management.⁴⁷

Additionally, the FSP could include a target for reductions in the use of fossil-fuel based synthetic inputs, such as a 25% reduction in total fertilizer use by 2040, consistent with data on current excess application, and a 50% reduction of synthetic fertilizer use by 2040 due to its much greater climate impacts. Including specific targets, such as those listed above, will be necessary to drive progress toward climate targets for the voluntary strategies listed in the DSP.

B. The Final Scoping Plan Should Focus Strategies and Soil Health Funding on Climate-Friendly Perennials, Rather Than Practices That Further Entrench Polluting Systems from Animal Agriculture

The DSP includes expanded support for existing programs as a strategy to incentivize adoption of soil health practices (AF12). However, the FSP should ensure that these expanded programs focus funding exclusively on soil health practices with clear climate benefits, rather than practices that entrench polluting systems, as they have in the past. For example, in Climate Resilient Farming (“CRF”) Program awards announced for 2021, a few large dairies received significant grants up to \$448,000 to install cover and flare systems, while soil health practices accounted for smaller allocations of funds (see figure below).⁴⁸ Over 30% of total program funds went to just four large dairies to adopt this practice.⁴⁹ Manure management practices at these large operations are already eligible for support through the Department of Agriculture and Markets Agricultural Nonpoint Source Pollution Abatement and Control Program, which in 2021 allocated \$8.9 million (or 55% of the total program budget) to projects including manure storage and management practices.⁵⁰ Thus, for improved equity and efficacy, the FSP must include guidelines to ensure that expanded programs are tailored towards soil health practices with climate benefits rather than simply channeling funding towards large industrial animal facilities.

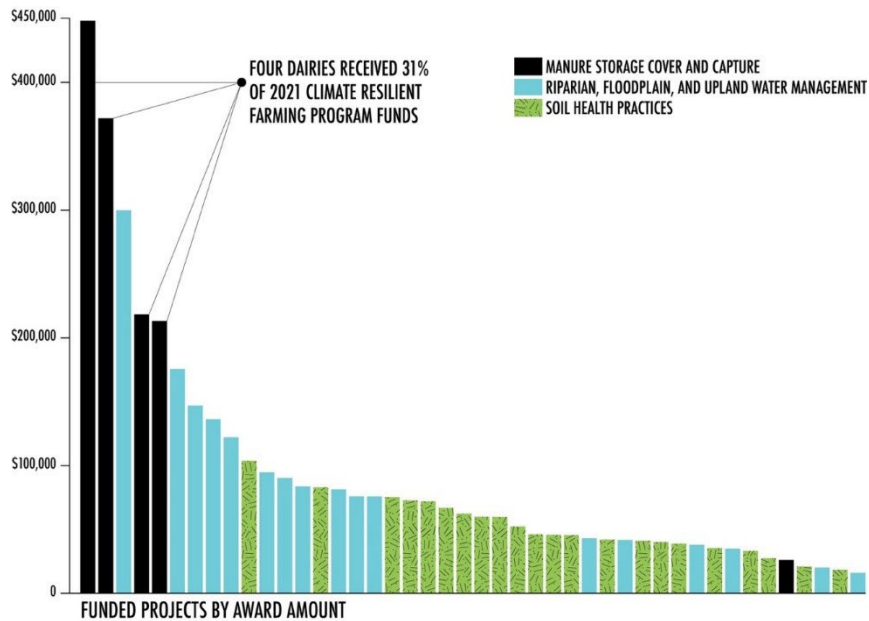
⁴⁷ Agriculture Resilience Act, H.R. 2803, 117th Cong. (2021).

⁴⁸ N.Y. Dep’t of Agric. & Markets, *Climate Resilient Farming Round 5* (2021), https://agriculture.ny.gov/system/files/documents/2021/02/crf_round5_projectdescriptions_0.pdf.

⁴⁹ *Id.* Note that this is an improvement from 2018 awards, in which 78% of funds went to just four dairies and one swine farm to implement cover and flares. See also N.Y. Dep’t of Agric. & Markets, *Climate Resilient Farming* (2018), <https://agriculture.ny.gov/soil-and-water/climate-resilient-farming>.

⁵⁰ See N.Y. Dep’t of Agric. & Markets, *Agricultural Nonpoint Source Pollution Abatement and Control Program Round* (2021), <https://agriculture.ny.gov/soil-and-water/agricultural-non-point-source-abatement-and-control>.

2021 CLIMATE RESILIENT FARMING PROGRAM AWARDS



C. The Final Scoping Plan Should Ensure 40% of the Benefits from Soil Health Programs Accrue to Disadvantaged Communities

Given the legacy of discrimination that prevented farmers of color from gaining equal resources to support ownership of agricultural operations, it is essential that farmers and ranchers of color benefit from the resources provided through CRF and other programs. As noted by the CJWG, Black, Indigenous, and people of color (“BIPOC”) producers represent a small fraction of total producers in New York state and an even smaller proportion of producers on the largest farms. For example, only 0.24% of farmers in New York State are Black, and government subsidies and support per Black farm are 60% less than average payments per farm for all of New York’s farms.⁵¹

The CLCPA directs that disadvantaged communities receive at least 35% of overall benefits of spending on certain key climate, energy, and environmental investments. *See* ECL § 75-0117. The Biden Administration has similarly committed to direct 40% of certain climate and environmental federal investments to disadvantaged communities.⁵² The CLCPA is not entirely clear whether this mandate applies to agricultural expenditures. We urge that the FSP include guidelines to extend this guarantee to the benefits of funding from soil health programs. Many soil health programs will benefit both the farmers and/or those downstream or downwind, and the FSP should ensure that disadvantaged communities, including previously underserved farmers, in New York benefit from soil health programs. The FSP must recognize that existing

⁵¹ *Rising and Organizing in New York State*, Black Farmers United NYS, <https://www.blackfarmersunited.org/statements/rising-and-organizing-in-new-york-state> (last updated Apr. 6, 2022); *see also* USDA, Nat’l Agric. Stat. Serv., *Census of Agriculture* (2017), https://www.nass.usda.gov/Publications/AgCensus/2017/Online_Resources/Race_Ethnicity_and_Gender_Profiles/New_York/cpd36000.pdf.

⁵² *See* Tackling the Climate Crisis at Home and Abroad, Exec. Order No. 14,008, 86 Fed. Reg. 7619 (Jan. 27, 2021).

incentive programs that benefit the largest farms will further entrench these disparities and must therefore ensure that disadvantaged communities have access to relevant forms of support.

D. The Final Scoping Plan Should Include a Plan for Measurement of Outcomes.

The DSP largely relies on voluntary programs to incentivize the adoption of soil health practices. While many soil health practices, including cover crops, improved nutrient management, perennial crops, conservation crop rotations, and agroforestry have demonstrated climate benefits compared to conventional cropping systems,⁵³ the FSP should include plans for measurement, monitoring and verification of outcomes to ensure accountability and track soil health progress within New York. This accountability is necessary for ensuring that funding results in climate benefits—either through increases in carbon sequestration or reductions in emissions—and for shaping state programs towards practices with maximal climate benefits. Measurement, monitoring and verification can also help guide research efforts and provide valuable information for outreach and education specific to producers in New York.

While many soil health practices have been well documented and proven, they are still not widely adopted in New York and there is always room for additional improvement in their design and implementation with respect to specific crops, regions, and contexts. Moreover, as farmers themselves are in an excellent position to share information with others, both about implementation and impact, there should be a strong push—and funding—for gathering detailed documentation about project implementation and environmental outcomes with each funded project. In addition, if taxpayers can be assured that their money is being put to good use and achieving the goals it is being allocated for, it is more likely the program will be able to continue and grow. Industrial-scale producers receiving these sources of funding should be required to submit detailed documentation of implemented activities and data on outcomes and key environmental indicators to DEC. This will allow the agency, legislature, and the public to measure the progress of the program, help quantify its environmental benefits, provide data to help refine and improve the program, and give farmers the information they need to make sound business and conservation decisions.

E. The Final Scoping Plan Should Include Strategies to Reduce Reliance on Pesticides and Herbicides

⁵³ See, e.g., Amy Swan et al., USDA & Colo. State Univ., *COMET-Planner: Carbon and Greenhouse Gas Evaluation for NRCS Conservation Practice Planning*, http://bfuels.nrel.colostate.edu/health/COMET-Planner_Report_Final.pdf; see also Christopher Poeplau & Axel Don, *Carbon Sequestration in Agricultural Soils via Cultivation of Cover crops – A Meta-analysis*, 200 *Agric., Ecosystems & Env't* 33 (2015) [attached as Exhibit E]; Jinshi Jian et al., *A Meta-analysis of Global Cropland Soil Carbon Changes Due to Cover Cropping*, 143 *Soil Biology & Biochemistry* 107,735 (2020) [attached as Exhibit F]; Shibu Jose & Sougata Bardhan, *Agroforestry for Biomass Production and Carbon Sequestration: An Overview*, 86 *Agroforestry Systems* 105 (2012) [attached as Exhibit G]; Joseph E. Fargione et al., *Natural Climate Solutions for the United States* 4 *Sci. Advances* (2018); *AgEvidence*, The Nature Conservancy, <https://www.agevidence.org/> (last visited June 13, 2022); Xiongxiang Bai et al., *Responses of Soil Carbon Sequestration to Climate-smart Agriculture Practices: A Meta-analysis*, 25 *Global Change Biology* 2591 (2019) [attached as Exhibit H].

Reducing pesticide and herbicide use is critical to building soil health and preventing harm to non-target organisms and surrounding communities. Healthy soil depends on the presence of billions of soil microorganisms, including bacteria and fungi. Pesticide use by its very nature kills beneficial as well as harmful life in soil and thus often impairs soil health and fertility, with the potential to impact soil carbon and nutrient cycling and climate. Pesticides and herbicides can alter the composition, diversity, and functioning of soil organisms. Ultimately, pesticides and herbicides can harm and alter soil communities that play a major role in carbon sequestration and create a thriving agricultural system.⁵⁴ We thus urge the FSP to explicitly include strategies to reduce synthetic pesticide and herbicide use and to promote integrated pest management (including alternative strategies to suppress pests through conservation crop rotations, cover crops and other agroecological practices⁵⁵) as key goals.

F. The Final Scoping Plan Should Include Additional Strategies to Reduce Nitrous Oxide Emissions from Excess Fertilizer Use, Including Outreach and Consideration of a Graduated Fertilizer Fee

The FSP should more directly address excess application of fertilizer, a common practice that has several harmful environmental and climate impacts, including the release of nitrous oxide, which is both a potent greenhouse gas and a major ozone depleting substance. This gas is emitted almost entirely by agricultural soil management and accounts for about 10% of the state's agricultural GHG emissions.⁵⁶ Farmers routinely apply fertilizer at higher rates than crops require for a variety of reasons: as a form of insurance or risk avoidance, hope for a great year, over-focus on yield over return, habit, and misinformation.⁵⁷ Due to losses to the atmosphere, retention in soil, and runoff to waterways, only a proportion of the nitrogen applied as fertilizer to annual grains is removed at harvest.⁵⁸ In addition, in New York, application of manure from CAFOs in the winter or on saturated ground is allowed, even though plants do not take up any nutrients at those times. These practices result in large losses of nutrients, leading to nitrous oxide emissions among other negative consequences.

The DSP recognizes that “[e]fficient use of nitrogen fertilizer can reduce nitrous oxide emissions from cropland, improve water quality, and can save the farmer money.”⁵⁹ The efficient use of fertilizer includes applying it at the right time and place and can be advanced by practices such as split application and slow-release fertilizers. We support certain strategies in the DSP, including increasing outreach and support for improved nutrient management, especially to and

⁵⁴ See Kendra Klein, Friends of the Earth, *Pesticides and Soil Health* (2019), https://foe.org/wp-content/uploads/2019/08/PesticidesSoilHealth_Final-1.pdf.

⁵⁵ See *Integrated Pest Management*, USDA Nat'l Res. Conservation Serv., https://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/about/?cid=nrcs144p2_027181 (last visited June 13, 2022).

⁵⁶ See N.Y. DEC, *supra* note 2.

⁵⁷ G. Philip Robertson & Peter M. Vitousek, *Nitrogen in Agriculture: Balancing the Cost of an Essential Resource*, 34 Ann. Rev. Env't & Res. 97, 117 (2009) (Finding that farmers often apply excess fertilizer “in the hopes that ‘this year will be the one in ten’ when extra N will pay off.”).

⁵⁸ G. Philip Robertson, *Nitrogen Use Efficiency in Row-Crop Agriculture: Crop Nitrogen Use and Soil Nitrogen Loss*, Ecology in Agriculture 351 (Louise E. Jackson ed., Academic Press 1997).

⁵⁹ DSP at 213.

for previously underserved farmers. We support the use of all existing support programs including the Agricultural Nonpoint Source Abatement and Control program and the new CRF program. However, the FSP should incorporate at least two additional measures to improve nutrient management on farms in New York.

First, since one of the most important things a farm can do is apply fertilizer no earlier than the planting season,⁶⁰ the FSP should recommend that DEC revise its CAFO general permits—applicable to the several hundred large dairies in New York accounting for nearly 70% of New York’s dairy cow population—to prohibit winter manure spreading. Such a provision would reduce both nitrous oxide and methane emissions because fertilizer left unutilized in the soil over winter is vulnerable to environmental loss, including as nitrous oxide.⁶¹

Second, the FSP should recommend more aggressive efforts to incentivize improved fertilizer management, including phased-in institution of a fertilizer fee. While the DSP includes discussion on imposing some form of price on carbon dioxide emissions in its Economy-Wide Strategies Chapter (which we address elsewhere in these comments), the FSP should also develop a similar approach for nitrous oxide. The FSP should include consideration of imposing a fertilizer fee that could directly encourage and fund assistance for farmers’ enhancing fertilizer use efficiency. This should be structured to apply only to excess fertilizer, such as applying over the per acre amounts that represent the plants’ nutritional needs. More sophisticated fee schemes could provide a base rate with discounts for enhanced-efficiency fertilizers that emit less nitrous oxide. To assist in the transition, such a fee could be phased in, with significant outreach and technical assistance beforehand to enable farmers to adopt precision and other improved fertilizer management regimes. All revenue from the fee should be directed to farmer support. Improvements in fertilizer management are possible—and profitable—with similar reductions in nitrous oxide emissions.

VII. Climate-Focused Bioeconomy

A. The Final Scoping Plan Should Ensure That Strategies Listed Under the Climate-Focused Bioeconomy are Founded on Accurate Accounting of the Climate Impact of Harvesting and That They Do Not Undermine Strategies Listed in the Land Use Chapter

The DSP includes a number of strategies under the Climate Focused Bioeconomy section which prioritize growth of the forestry industry over climate mitigation. The FSP should include guidance to relevant agencies to ensure that any funding for forestry training as described in

⁶⁰ See Marc Ribaud et al., USDA Econ. Rsch. Serv., ERR-127, *Nitrogen in Agricultural Systems: Implications for Conservation Policy* 11 (2011), <https://www.ers.usda.gov/publications/pub-details/?pubid=44919>; see also Terry L. Roberts, Int’l Plant Nutrition Inst., *Right Product, Right Rate, Right Time, and Right Place . . . the Foundation of Best Management Practices for Fertilizer*, *Fertilizer Best Management Practices*, 29–32, (1st ed. 2007); G. Philip Robertson et al., *Nitrogen-Climate Interactions in U.S. Agriculture*, 114 *Biogeochemistry* 41, 55–56 (2013).

⁶¹ See Xiaojing Hao et al., *Nitrous Oxide Emissions From an Irrigated Soil as Affected by Fertilizer and Straw Management*, 60 *Nutrient Cycling Agroecosystems* 1, 5 (2001) [attached as Exhibit I]; Claudia Wagner-Riddle & G.W. Thurtell, *Nitrous Oxide Emissions From Agricultural Fields During Winter and Spring Thaw as Affected by Management Practices*, 52 *Nutrient Cycling Agroecosystems* 151, 162 (1998) [attached as Exhibit J].

AF18, efforts to expand wood product markets as described in AF19, or promotion of wood products as described in AF8, reflect accurate accounting of the impact of harvesting on both (1) existing carbon stocks in New York forests, and (2) the lost potential for sequestration resulting from removals of these carbon stocks. As described above, this is necessary to ensure that these recommendations do not undermine strategies laid out in the Land Use chapter, which rightly prioritize the climate benefits of keeping forests as forests rather than managing for commercial products. The FSP should provide guidance to relevant agencies to ensure that any funded education, outreach and product promotion reflect unbiased accounting of the potential negative impacts of forest harvesting on climate, and the FSP should direct relevant agencies to ensure that all claims and educational materials reflect sound science.

B. The Final Scoping Plan Should Not Include AF20, Which Calls for the Expansion of the Use of Biomass Feedstocks and Bioenergy Products

Biomass harvesting and bioenergy are false climate solutions and should have no place in the FSP. Biomass harvests reduce the capacity for New York’s forests to continue functioning as a carbon sink. Not only do these activities reduce the magnitude of the carbon sink, they also lead to additional emissions from the harvest, burning, transportation and manufacture of wood products.⁶² Harvesting biomass results in a lost opportunity for forest stands to continue to sequester carbon, as they would if left undisturbed. The FSP must recognize the fundamental benefits of leaving forests intact and carefully account for this potential for continued carbon sequestration in any proposals that suggest harvesting as a climate mitigation strategy.

As noted in the DSP, the CJWG has “expressed concerns about the combustion of biomass and biofuels due to their release of emissions.”⁶³ The DSP fails to address these concerns, and should not include AF20, which calls for an expansion of biomass and bioenergy.

VIII. Conclusion

Reducing emissions from livestock and dairy production in New York, rebuilding soil organic carbon stocks on croplands, and restoring and protecting forests must all be a part of New York’s climate action plan. The DSP includes several strategies that have the potential to reduce emissions from agriculture and forestry; however, there are a number of areas in which the DSP may be improved to avoid false solutions and increase accountability and impact. This includes the following:

Forestry

The FSP must revisit the currently proposed forestry strategies to avoid incentivizing removals from forests. The FSP must prioritize forest preservation and restoration efforts, which provide the maximum climate benefit, over managing forests to produce forest crops. The FSP must also not offer forests in New York as an excuse to delay action on reducing fossil fuel emissions through offset markets.

⁶² See Tara W. Hudiburg et al., *supra* note 11 at 419 [attached as Exhibit D].

⁶³ DSP at 227.

1. The FSP should ensure that benefits for private forest landowners who manage for carbon sequestration or conserve their forests in natural conditions are *at least* equal to benefits for private forest landowners who manage for wood products.
2. The FSP should not include AF6, which relies on dangerous and ineffective offsetting of fossil fuel emissions through forest carbon sequestration.

Livestock

Successfully reducing methane emissions from livestock will require strategies that extend beyond the voluntary and limited suggestions in the DSP. The FSP must include regulatory options to mandate reductions in methane emissions from large operations, and the FSP should explore an additional suite of more transformative strategies to reduce methane from enteric fermentation and manure management.

3. The FSP should include regulatory options, as authorized under the ECL and consistent with the CLCPA, for reducing methane emissions.
4. The FSP should focus on more transformative strategies for reducing manure methane outside of cover and flare and digesters, including strategies to reduce manure generation and reducing wet storage, and more transformative strategies for reducing enteric methane emissions from livestock, such as feed additives and reductions in livestock antibiotic use.
5. The FSP should focus on strategies to reduce herd size which could accelerate reductions in both manure and enteric emissions.

Soil Health

While the DSP provides useful suggestions for increasing the adoption of soil health practices on croplands in New York, the FSP should incorporate additional strategies to ensure that soil health programs result in real climate benefits and that these funds support disadvantaged communities.

6. The FSP should set statewide goals based on targets proposed at the national scale for the adoption of climate-friendly practices and climate-smart systems such as organic practices, and should include a plan to track progress and increase accountability.
7. The FSP should focus on strategies to incentivize climate-friendly cropping practices, rather than practices that further entrench polluting systems from animal agriculture.
8. The FSP should ensure 40% of the benefits from soil health programs accrue to disadvantaged communities.
9. The FSP should urge revision of the CAFO general permit and development of a phased-in tiered fertilizer fee to incentivize enhanced fertilizer management.

Climate-focused Bioeconomy

The FSP should focus on preserving the climate benefits of keeping forests as forests. The FSP must revisit forestry strategies in the context of accurate carbon accounting unbiased by the forestry industry to avoid false solutions like bioenergy from forest carbon stocks.

10. The FSP should ensure that strategies listed under the Climate-Focused Bioeconomy are founded on accurate accounting of the climate impact of harvesting.
11. The FSP should not include AF20, which calls for the expansion of the use of biomass feedstocks and bioenergy products.

Respectfully submitted,

Acadia Center
Alliance for a Green Economy
Brookhaven Landfill Action and
Remediation Group
Catskill Mountainkeeper
Clean Air Coalition of WNY
Climate Reality Project, Capital Region NY
Chapter
Climate Reality Project, Finger Lakes
Greater Region NY Chapter
Climate Reality Project, Hudson Valley and
Catskills Chapter
Climate Reality Project, Long Island
Chapter
Climate Reality Project, NYC
Climate Reality Project, Westchester NY
Chapter
Climate Reality Project, Western New York
Chapter
Committee to Preserve the Finger Lakes
Community Food Advocates
CUNY Urban Food Policy Institute
Earthjustice
Environmental Advocates NY
Friends of the Earth

Fossil Free Tompkins
Gas Free Seneca
Green Education and Legal Fund
HabitatMap
Hotshot Hotwires
Long Island Progressive Coalition
Nassau Hiking & Outdoor Club
Natural Resources Defense Council (NRDC)
Network for a Sustainable Tomorrow
New Clinicians for Climate Action
North Brooklyn Neighbors
Northeast Organic Farming Association of
New York, Inc. (NOFA-NY)
NY Renews
People of Albany United for Safe Energy
Riverkeeper Inc.
Roctricity
Seneca Lake Guardian
Sierra Club
South Shore Audubon Society
Sustainable Finger Lakes
University Network for Human Rights
UPROSE
WE ACT for Environmental Justice



Electric Sector

I. Introduction

Commenters are generally supportive of the Draft Scoping Plan’s (“DSP”) electric sector strategies (E1-E10) and encourage the State to move expeditiously to phase out fossil fuel generation and accelerate the transition to a zero-emissions grid, with a focus on ramping up renewable and battery storage installations and upgrading transmission and distribution network infrastructure. The State must also invest in new technological solutions such as long duration storage that will facilitate the transition to a true zero-emissions grid. However, other purported technology solutions such as renewable natural gas (“RNG”) and hydrogen combustion are not zero-emissions and therefore inconsistent with the CLCPA’s 2040 electric sector mandate and should be excluded. Moreover, even if some hydrogen or RNG were deemed zero emissions, there are a host of significant issues that limit the role they can play in a decarbonized electric sector.

II. Phasing Out Fossil Fuel

Commenters strongly support electric sector strategy E1 (“Retirement of Fossil Fuel Fired Facilities”), which recognizes that “[a]chieving a 100% emissions-free power grid will

require phasing out the use of fossil fuel for power generation over time.”¹ Fossil fuel-fired generation must be reduced and eliminated in a deliberate and comprehensive manner in order to achieve the CLCPA’s mandates for 70% renewable generation by 2030 and zero-emissions electricity by 2040.

A. New gas generation will frustrate efforts to reduce state GHG emissions and transition to a zero-emissions electric sector.

As the DSP implicitly recognizes, new gas generation is inconsistent with the CLCPA and will frustrate efforts to reduce state greenhouse gas (“GHG”) emissions by transitioning to a zero-emissions electric sector. The CLCPA requires 70% renewable energy by 2030 and zero-emissions electricity by 2040. Neither electric sector mandate can be met if New York continues to build its electric system around additions of gas generation.

In 2021, a mere 27.9% of statewide electric generation came from renewables while 47.6% of generation came from fossil fuel plants.² On a capacity basis, the situation is even worse, with the State relying on gas plants for more than two-thirds of its electric generating capacity.³ The State therefore must substantially decrease—not increase—reliance on fossil fuels in order to decrease greenhouse gas emissions and achieve 70% renewable generation by 2030 and exclusively zero-emissions electricity by 2040. NYISO projects that statewide electric demand will decrease slightly between 2020 and 2030.⁴ As such, existing fossil resources must retire and/or significantly curb generation in order to meet the CLCPA’s 2030 requirements. No headroom exists for new gas generation.

Without a focus *now* on meeting the 2030 mandate, the State risks retaining and installing more gas capacity than *could possibly* run—and less renewable capacity than the State *must* run—to achieve a minimum of 70% renewable generation and ensure that overall statewide emission reductions reach 40% by 2040. New gas capacity therefore decreases the likelihood—and increases the cost—of achieving the 70 by 30 mandate.

And new gas is flatly incompatible with a zero-emissions electric sector because gas plants emit both greenhouse gases and co-pollutants, including nitrogen oxides (“NO_x”) and particulate matter. Reducing co-pollutant emissions, particularly in disadvantaged communities (“DACs”), is a core purpose of the CLCPA.⁵

¹ N.Y. Climate Action Council, *Draft Scoping Plan* (“DSP”) 154 (2021), <https://climate.ny.gov/-/media/Project/Climate/Files/Draft-Scoping-Plan.pdf>.

² New York Independent System Operator (“NYISO”), *Gold Book: 2022 Load & Capacity Data* 73 (2022), <https://www.nyiso.com/documents/20142/2226333/2022-Gold-Book-Final-Public.pdf/cd2fb218-fd1e-8428-7f19-df3e0cf4df3e?t=1651089370185>.

³ See *New York State Profile and Energy Estimates*, U.S. Energy Info. Admin. (Oct. 21, 2021), <https://www.eia.gov/state/analysis.php?sid=NY>.

⁴ NYISO, *Power Trends 2021: New York’s Clean Energy Grid of the Future* 12 (2021), <https://www.nyiso.com/documents/20142/2223020/2021-Power-Trends-Report.pdf/471a65f8-4f3a-59f9-4f8c-3d9f2754d7de>; Max Schuler & Chuck Alonge, NYISO, *Long Term Forecast Update*, at slide 34 (Nov. 19, 2020), <https://www.nyiso.com/documents/20142/17044621/LT-Forecast-Update.pdf>.

⁵ See, e.g., ECL § 75-0109(3)(d) (stating DEC must, in promulgating regulations, prioritize reduction of GHG and co-pollutant emissions in disadvantaged communities).

Nor would a requirement that new gas plants retire in 2040 suffice to render new gas generation consistent with the CLCPA. Building a gas plant that must retire just as the State's renewable energy needs become most acute would neither ensure reliability nor facilitate renewable integration. Here too, such a plant would make it more, rather than less, difficult to achieve the 2040 zero-emissions electricity mandate.

New fossil fuel generation is particularly problematic because it perpetuates a grid where local reliability is dependent on fossil fuel capacity resources and jeopardizes the economics of zero-emissions alternatives. Building a fossil fuel plant entrenches the grid's local reliance on that resource and dampens market signals for storage or other non-emitting capacity resources to site in that load pocket. Thus, adding new gas resources will make it even more challenging for New York to extricate itself from its present over-reliance on fossil fuel generation.

B. New gas generation should be prohibited with only the narrowest exception for unavoidable reliability needs.

Given its clear inconsistency with the CLCPA and deleterious effect on efforts to achieve the 2030 and 2040 electric sector mandates, the State must prohibit new gas generation with only the narrowest exception for clear and unavoidable near-term reliability needs. Commenters therefore support the DSP's direction that new or repowered fossil fuel generation should be considered only as a last resort where reliability needs arise and cannot be resolved through zero-emissions solutions.⁶

The DSP provides a clear four-part framework for considering new or repowered fossil fuel generation. First, whenever "a reliability need or risk is identified, emissions-free solutions should be fully explored . . ."⁷ Second, only after those emissions-free solutions are examined and found insufficient to resolve the reliability need should new or repowered fossil generation even be considered.⁸ Third, NYISO and local transmission operators must affirmatively concur both that new or repowered fossil is needed to maintain system reliability and further, that zero-emissions alternatives are insufficient to meet that reliability need.⁹ Finally, the DSP explains that "[e]ven in those cases, the fossil-fueled generation facility should assist in meeting the goals of the Climate Act. That is, its deployment should result in a greater integration of zero-emissions resources; a reduction in fossil fuel generation; a significant reduction of GHG and co-pollutant emissions; a benefit to an environmental justice community; and a benefit to the electric system that addresses the identified reliability need or risk."¹⁰

Together, the requirements help shield against unnecessary fossil fuel generation, restricting fossil generation projects to situations in which there is a pre-identified reliability need, and making sure the analysis of zero-emissions alternatives is thorough and comes first, not as an afterthought. The requirement that both NYISO and local transmission operators

⁶ See DSP at 155.

⁷ *Id.*

⁸ *Id.*

⁹ *Id.*

¹⁰ *Id.*

confirm (1) that the fossil project is necessary to maintain system reliability and (2) that the reliability need cannot be met with zero-emissions alternatives provides an important guardrail against industry over-reach in striving to justify new generation projects. The FSP should go further, however, and clarify that only a *concrete, near-term* reliability need at the location of a proposed project suffices as a basis for considering new or repowered fossil generation. NYISO undertakes a broad review of system reliability, looking out many years and considering a wide range of theoretical scenarios. However, NYISO identification of a reliability need many years out would not support new or repowered fossil generation given the likelihood that zero-emissions resources—including newly developed technology—could resolve the reliability issue in the intervening years.

Finally, Commenters support the Power Generation Advisory Panel and Climate Justice Working Group recommendation for a near-term moratorium on permitting new fossil fuel generation.¹¹ A moratorium is consistent with the use of fossil as a last resort and would afford time for full CLCPA implementation, including regulatory and policy changes to incentivize the clean resources necessary for a zero-emissions grid and which can obviate the need for additional fossil generation.

C. Existing gas generation should be phased out as quickly as feasible and especially in Disadvantaged Communities.

The DSP calls for the PSC, DEC, NYSERDA, and the New York State Energy Planning Board to coordinate to determine the potential for GHG and co-pollutant reductions from fossil generation by 2030 and set a timeline for emissions reduction targets, taking into account the location and emissions profile of sources statewide, including in disadvantaged communities.¹² The DSP further states that the emission reduction targets should be evaluated every two years, adjusted as necessary to meet the 2030 and 2040 electric sector mandates, and provide a timeline “represent[ing] a continual decline in emissions from present to 2040 while ensuring reliability.”¹³ Commenters support this coordinated and considered approach. Commenters further recommend aggressive action to reduce fossil fuel generation as quickly as feasible, consistent with a deliberative process to ensure all such generation is replaced with true zero-emissions solutions yielding both climate and health benefits alike.

Beyond simply “consider[ing]” disadvantaged community designations when determining emission reduction targets, reductions and plant closures should be affirmatively prioritized in disadvantaged communities to the extent possible, as these same communities currently suffer the greatest environmental and health burdens. In addition to generating GHG emissions, the combustion of fossil fuel emits harmful pollutants such as nitrogen oxides (NO_x), sulfur dioxide (SO₂), particulate matter (PM), and carbon monoxide. NO_x and SO₂ further contribute to the secondary formation of ozone and fine particulate matter (PM_{2.5}). These pollutants are each directly harmful to human health and contribute to respiratory disease,

¹¹ See DSP at 155-56.

¹² DSP at 156.

¹³ *Id.*

asthma, cardiovascular disease, and death.¹⁴ In New York City alone, PM_{2.5} pollution “causes more than 3,000 deaths, 2,000 hospital admissions for lung and heart conditions, and approximately 6,000 emergency department visits for asthma in children and adults” each year.¹⁵ Elevated ozone levels likewise cause an estimated “400 premature deaths, 850 hospitalizations for asthma and 4,500 emergency department visits for asthma.”¹⁶ Disadvantaged communities located near existing fossil-fired plants are especially at risk of these harms.

To facilitate the expeditious retirement of the existing gas fleet, State actors should assess each existing gas plant to establish what, if any, reliability risks exist that would hinder plant retirement. NYISO currently undertakes a similar evaluation upon receipt of deactivation requests,¹⁷ but the proactive identification and resolution of reliability concerns will enable the earlier retirement of generators and decrease the unnecessary use of fossil fuel (for example, and as described below, easing transmission constraints could obviate the need for a peaker plant to serve local load). Once reliability needs have been identified, the State must implement a process for addressing those reliability needs through a CLCPA-compliant resource mix (i.e., some combination of zero-emission generation, energy storage, energy efficiency, demand response, transmission upgrades, and/or transmission interconnection). In addition, to ensure that the state remains on a trajectory to reach zero emissions by 2040, DEC should lock in all feasible emission reductions through enforceable emission limits. DEC, NYSERDA and the PSC must regularly iterate this process to ensure that reliability solutions are being systematically identified and implemented and emissions continue to decline toward zero by 2040.

III. Clean Solutions

Rather than continuing to rely on existing and new fossil fuel generation, the State must instead move aggressively to implement existing clean solutions necessary for achieving a zero-emissions grid, including the accelerated installation of renewables, battery storage, and transmission and distribution system upgrades. The State should also invest heavily in research and development of zero-emission long duration storage technologies.

A. The State must continue and accelerate the installation of renewables.

The State must continue and accelerate the installation of renewable generation, including through NYSERDA’s existing procurement program—which the State should expand—and by ensuring a smoothly functioning siting process through the Office of Renewable Energy Siting (“ORES”). Commenters support electric sector strategy E2 (“Accelerate Growth of Large-Scale

¹⁴ See, e.g., *Nitrogen Dioxide*, American Lung Association, <https://www.lung.org/clean-air/outdoors/what-makes-air-unhealthy/nitrogen-dioxide> (last updated Feb. 12, 2020); New York City Department of Health, *Air Pollution and the Health of New Yorkers: The Impact of Fine Particles and Ozone 3*, <https://www1.nyc.gov/assets/doh/downloads/pdf/eode/eode-air-quality-impact.pdf>; *Sulfur Dioxide (SO₂) Pollution*, EPA, <https://www.epa.gov/so2-pollution/sulfur-dioxide-basics#effects> (last updated Mar. 9, 2022).

¹⁵ New York City Department of Health, *Air Pollution and the Health of New Yorkers: The Impact of Fine Particles and Ozone 3*, <https://www1.nyc.gov/assets/doh/downloads/pdf/eode/eode-air-quality-impact.pdf>.

¹⁶ *Id.* at 25.

¹⁷ See NYISO, *Open Access Transmission Tariff (OATT) 2348* (2022), <https://nyisoviewer.etariff.biz/ViewerDocLibrary/MasterTariffs/9FullTariffNYISOOATT.pdf> (describing NYISO’s Generator Deactivation Process, including the Generator Deactivation Assessment NYISO undertakes in coordination with responsible transmission owners).

Renewable Energy Generation”) and offer the following comments geared toward ensuring the installation of sufficient quantities of renewables to achieve the CLCPA’s 2030 and 2040 electric sector mandates.

First and foremost, the State must install substantially more renewable generation than specified by the CLCPA targets for 6 GW of photovoltaic solar by 2025 and 9 GW of offshore wind by 2035. NY PSL § 66-p(5); *see also* ECL § 75-0103(13)(e). The CAC Integration Analysis Technical Supplement projects that by 2050, “across all modeled pathways,” the State must install “over 60 GW of solar capacity (both utility-scale and distributed resources), between 16-17 GW of new land-based wind capacity (including imported wind from neighboring ISOs), and between 16-19 GW of offshore wind resources. . . .”¹⁸ The current CLCPA targets therefore represent only a small portion of the renewables ultimately required to achieve a zero-emissions grid. To ensure the installation of sufficient renewable capacity, the State should adopt higher procurement targets to match the Integration Analysis, expand funding for NYSERDA’s existing procurement programs, and consider whether additional targeted procurement programs are necessary.

Second, the DSP recommends that ORES establish a non-binding goal of permitting enough MWs of renewable energy annually to “compliment[] the Tier 1 request for proposals procurements.”¹⁹ The FSP should clarify that “compliments” means at least matches. The FSP should also recommend that ORES review its first years’ worth of permitting decisions to identify any process improvements that would accelerate the pace of its review, particularly to the extent decisions thus far have exceeded the six-month and one-year deadlines for permit decisions set forth in the Accelerated Renewables Act. NY Exec. Law § 94-c(5)(f).

In addition to addressing issues with the siting process, there are a host of additional obstacles to renewable generation development that must be addressed. Given the large capacity of renewable projects that will need to be developed each year in order to support a zero-emission power grid by 2040, it is important that projects receiving REC awards from NYSERDA through its Tier 1 solicitations are timely brought to market. To this end, the FSP should recommend modifications to the NYSERDA request for proposal (“RFP”) process.

There is a potential tension between NYSERDA’s current heavy weighting of bid price (70%) and several of the non-price factors for evaluation, including reducing the embodied carbon of the project²⁰ and incremental economic benefits to the State and to DACs.²¹ If price is weighted too heavily in bid scoring, developers will be disincentivized from pursuing these important potential project benefits. Likewise, to the extent that New York seeks to encourage renewable development on non-agricultural lands, over-weighting price in the bid evaluation process may inhibit that goal, as agricultural lands may be the least expensive development

¹⁸ DSP, *Appendix G: Integration Analysis Technical Supplement*, Section 1 at 45.

¹⁹ DSP at 159.

²⁰ NYSERDA, Request for Proposals No. RESRFP21-1, *NYSERDA Seeks to Acquire Approximately 4.5 Million New York Tier 1 Eligible Renewable Energy Certificates Annually* 32 (2021), <https://portal.nysERDA.ny.gov/servlet/servlet.FileDownload?file=00Pt000000UOhG5EAL>.

²¹ *Id.* at 34-35.

option. Finally, there may also be a tension between price and project viability, currently weighted together with operational flexibility and peak coincidence at 20%.²²

Ultimately, successfully bringing renewable projects to completion is of critical importance, as NYSERDA contracts for projects that do not ultimately reach completion take money away from potentially viable alternative projects and thwart efforts to achieve the State’s renewable development goals. NYSERDA’s evaluation of bids should give significant weight to factors indicative of the likelihood that projects will be timely and successfully developed.

In addition, as pertains to timing, the FSP should make recommendations on how the State can help ensure that the NYISO is timely processing interconnection requests for renewable developers. Uncertainty in the time frame for processing interconnection requests is not only a concern for delaying project completion, but also can increase the cost of CLCPA compliance, as developers must price this uncertainty into their bids. While New York does not govern the NYISO, the FSP should recommend that the State adopt legislation that would create an oversight board for NYISO to ensure that it is assiduously fulfilling its role in processing applications for interconnections of renewable energy projects.

B. The State must address transmission system needs.

To further support a clean energy transformation, the State must invest heavily in transmission and distribution system upgrades.²³ Such upgrades will both promote the installation of increasing renewable capacity and facilitate the shutdown of polluting fossil gas plants. Commenters are supportive of electric sector strategy E7 (“Invest in Transmission and Distribution Infrastructure Upgrades”) and make the following additional recommendations.

Crucially, the State must apply an equity lens to transmission system upgrades with a focus on ameliorating the existing disproportionate impacts on DACs. Many fossil peaker plants are sited within—or very near—DACs. Transmission projects should therefore be expedited wherever they can obviate the need for an existing or new peaker plant and/or facilitate the retirement of an existing plant. Particularly within New York City, many peaker plants operate to address reliability needs within transmission-constrained load pockets.²⁴ These transmission constraints hinder plant retirements and thus prolong the operation of high-pollution, high-cost²⁵

²² *Id.* at 21.

²³ *Cf.* Chapter 58 (Part JJJ) of the Laws of 2020 (“Accelerated Renewable Act”) § 7(2) (directing the preparation of a power grid study to identify “distribution upgrades, local transmission upgrades and bulk transmission investments that are necessary or appropriate to facilitate the timely achievement of the CLCPA targets . . .”).

²⁴ *See, e.g.*, NYISO, *2021-2030 Comprehensive Reliability Plan* 12-13 (2021), <https://www.nyiso.com/documents/20142/2248481/2021-2030-Comprehensive-Reliability-Plan.pdf/99a4a589-7a80-13f6-1864-d5a4b698b916>.

²⁵ Recent publications have highlighted the exorbitant capacity payments made to the owners of fossil-fuel power plants in New York. *See, e.g.*, The PEAK Coalition, *Dirty Energy, Big Money: How Private Companies Make Billions from Polluting Fossil Fuel Peaker Plants in New York City’s Environmental Justice Communities – and How to Create a Cleaner, More Just Alternative* (2020) (hereinafter “Dirty Energy, Big Money”), https://8f997cf9-39a0-4cd7-b8b865190bb2551b.filesusr.com/ugd/fl0969_9fa51ccc611145bf88f95a92dba57ebd.pdf. Peak electricity in New York City can cost up to 1,300% more than the average cost of electricity in New York. *Id.* at 15. These high costs disproportionately burden low-income communities with over 600,000 families paying greater than six percent

power plants. At the same time, targeted investments in the transmission system can facilitate the retirement of existing fossil generation without the need for fossil fuel replacement.²⁶ While clean electricity may be available in the region, it cannot be dispatched to serve the transmission-constrained load in full. Prioritizing transmission system upgrades that eliminate load pockets and enable the retirement of fossil plants in DACs will therefore serve several important purposes: reducing pollution and health impacts in disproportionately burdened communities, decreasing electricity costs for those same utility-burdened, low-income communities, and facilitating achievement of the CLCPA’s 2030 and 2040 electric sector mandates.

With regard to local transmission and distribution planning, the PSC should require utilities to incorporate storage and other grid-enhancing technologies (GETs). GETs, including storage as transmission, power flow controls, dynamic line ratings, and topology optimization software, are advanced technologies that can be incorporated alongside traditional wires-based assets. GETs have many advantages. They have a small physical footprint compared to traditional wires-based assets and may offer faster build times as a result. They also may be more cost-effective for specific applications and storage as transmission especially can offer important grid flexibility benefits.²⁷

C. The State must expand investment in storage technologies.

The State must also expand deployment of existing battery storage technologies and fund research into and development of zero-emission long duration storage technologies.

Governor Hochul’s announcement doubling the State’s energy storage deployment target from 3 GW to 6 GW by 2030²⁸ is a step in the right direction. However, far more storage capacity will be necessary to achieve the CLCPA electric sector mandates. As the DSP notes, the recent Power Grid Study “identified a need for more than 15 GW of energy storage”—two and a half times the new State target.²⁹

of their annual household income in energy payments. NYC Mayor’s Office, *Understanding and Alleviating Energy Cost Burden in New York City* 4 (2019), <https://www1.nyc.gov/assets/sustainability/downloads/pdf/publications/EnergyCost.pdf>.

²⁶ The PSC’s approval of Con Edison’s TRACE projects facilitated the retirement of existing fossil fuel units at the Gowanus and Astoria power plants and obviated the need for additional proposed fossil fuel generation at these sites. The State observed in its press release regarding the PSC’s approval that “[t]he retirement of downstate fossil fuel-fired peaking generation without the addition of any new fossil-fueled power plants is itself a significant, first step towards achieving New York’s clean energy future.” Press Release, Pub. Serv. Comm’n, 19-E-0065, *PSC Approves \$800 Million Investment to Maintain and Improve Reliability, Achieve Climate-Change Goals, Enhance Resiliency of NYC Transmission Grid* (Apr. 15, 2021).

²⁷ See generally FERC Notice of Workshop; Grid-Enhancing Technologies, 84 Fed. Reg. 48,609 (Sept. 19, 2019); Rob Gramlich & Jay Caspary, Ams. for a Clean Energy Grid, *Planning for the Future: FERC’s Opportunity to Spur More Cost-Effective Transmission Infrastructure* 41 (2021), https://cleanenergygrid.org/wp-content/uploads/2021/01/ACEG_Planning-for-the-Future1.pdf; Jeff St. John, *4 Technologies That Could Unlock Transmission Capacity on the Grid*, GreenTech Media (Oct. 5, 2020), <https://www.greentechmedia.com/squared/dispatches-from-the-grid-edge/four-key-technologies-to-unlock-u.s.-transmission-grid-capacity>.

²⁸ Kathy Hochul, *State of the State 2022: A New Era for New York* 146-47 (2022), <https://www.governor.ny.gov/sites/default/files/2022-01/2022StateoftheStateBook.pdf>.

²⁹ DSP at 166.

Commenters agree with the DSP’s recommendations to update the State’s Energy Storage Roadmap to target the 15 GW need identified by the Power Grid Study, increase funding for energy storage deployment, incorporate energy storage into delivery and transmission planning, and work with NYISO on market enhancements, including the elimination of Buyer Side Mitigation for CLCPA resources.³⁰

The FSP should also require an annual evaluation of progress toward the 15 GW target. That way, if progress is insufficient, additional funding mechanisms can quickly be developed—or existing mechanisms expanded—to increase funding and spur the deployment of more energy storage. With only eight years until 2030, a more periodic review would hinder efforts to recalibrate in time to meet the 2030 requirement for 70% renewable generation.

Finally, the FSP should direct significant investment into the research and development of zero-emission long duration storage technologies. Commenters support the DSP recommendations that the State advocate for and leverage federal resources focused on zero carbon dispatchable long duration storage solutions and further that NYSERDA fund “research and demonstration projects for the development of large scale and longer duration storage” and work with NYISO and others to “bring technologies to large-scale deployment faster and more cost-effectively.”³¹

IV. False Solutions

The DSP, through electric sector strategy E10 (“Explore Technology Solutions”), recommends that NYSERDA explore dispatchable technology solutions to serve remaining generation needs after full integration of renewables in the lead up to 2040. As noted above, Commenters strongly support research into and funding toward long duration energy storage. However, hydrogen and RNG combustion are false solutions, which NYSERDA should not expend resources on exploring further. Combusting (even green) hydrogen or RNG is not zero-emissions and is therefore inconsistent with the CLCPA’s 2040 electric sector mandate, and in any event, faces significant barriers to implementation at scale.

While there is no appreciable role for hydrogen as a fuel for electric power generation, there may be a role for hydrogen in long-duration energy storage. Hydrogen fuel cells do not utilize combustion and consequently avoid the harmful emissions caused by burning hydrogen.³² But even then, the utility of hydrogen is uncertain, as other emerging technologies could provide these services at a lower cost.³³ And, given the finite amount of genuinely green hydrogen likely to be available, it is critical that it be directed to genuinely hard-to-electrify applications.³⁴

³⁰ DSP at 166-67.

³¹ DSP at 178.

³² Sasan Saadat & Sara Gersen, Earthjustice, *Reclaiming Hydrogen for a Renewable Future: Distinguishing Oil & Gas Industry Spin from Zero-Emission Solutions* 18, 22-24 (2021) (“Hydrogen Report”), https://earthjustice.org/sites/default/files/files/hydrogen_earthjustice.pdf.

³³ Sara Baldwin et al., Energy Innovation, *Assessing the Viability of Hydrogen Proposals: Considerations for State Utility Regulators and Policymakers* 3 (2022), <https://energyinnovation.org/wp-content/uploads/2022/03/Assessing-the-Viability-of-Hydrogen-Proposals.pdf>.

³⁴ See *infra* Sections IV(B)(2), (3).

A. RNG combustion is not zero-emissions and sufficient RNG sources do not exist.

RNG is chemically indistinguishable from fossil gas. Both are methane. RNG emits as much CO₂ when burned and leaks as much methane when transported as gas produced from non-biological sources like hydraulic fracturing (“fracking”).³⁵ RNG combustion therefore also emits the same co-pollutants as fossil gas. It is not and cannot be zero-emissions. In fact, methane’s global warming potential is approximately 86 times that of carbon dioxide over 20 years,³⁶ the statutorily mandated time frame for GHG accounting under the CLCPA.³⁷

Nor may the emissions from RNG combustion be excused through use of any offset scheme. Although the CLCPA provides that DEC “may establish an alternative compliance mechanism to be used by sources subject to greenhouse gas emissions limits to achieve net zero emissions,” ECL § 75-0109(4)(a)—it explicitly bars both electric generation sources generally, and biofuels specifically, from participation in such a mechanism. *Id.* § 75-0109(4)(f) (“Sources in the electric generation sector shall not be eligible to participate in such mechanism.”); *id.* § 75-0109(4)(g) (“The following types of projects shall be prohibited: . . . ii. biofuels used for energy or transportation purposes.”). Though an offset/netting approach may be used to achieve the final 15% of emissions reductions under the CLCPA’s sector-wide 2050 greenhouse gas limit, the CLCPA electric sector limits afford no such flexibility. *Compare* CLCPA §§ 1(4) and ECL §§ 75-0107(1)(a)–(b), 75-0109(4)(a)–(b), (f) (sector-wide greenhouse gas emission limit requires reducing emissions by 85% of 1990 levels and eliminating net emissions by 2050), *with* N.Y. P.S.L. § 66-p(2) (electric sector must be zero-emissions by 2040).

Moreover, carbon emissions from RNG production and use vary widely depending on the feedstock.³⁸ An all-feedstock approach to sourcing RNG would entail both the generation of new methane sources (e.g. thermal gasification of energy crops and forest and agriculture residues) as well as the promotion and use of methane from sources that would be better eliminated through alternative resource and waste management processes (e.g. animal manure and food waste).³⁹ Incentivizing the generation of, and then ultimately burning, RNG from such sources is not

³⁵ NRG, the developer behind a recent NY gas plant proposal acknowledged as much in their Draft Supplemental Environmental Impact Statement: “RNG does not result in zero onsite GHG emissions. As RNG is methane and fully interchangeable with conventional natural gas, onsite GHG emissions would remain the same whether the Project is operating on RNG or conventional natural gas.” AECOM, *Draft Supplemental Environmental Impact Statement: Astoria Replacement Project 3-51* (2021), https://www.nrg.com/assets/documents/legal/astoria/00_2021/astoria-draft-dseis-06-30-2021.pdf.

³⁶ Gayathri Vaidyanathan, *How Bad of a Greenhouse Gas is Methane?*, *Sci. Am.* (Dec. 22, 2015), <https://www.scientificamerican.com/article/how-bad-of-a-greenhouse-gas-is-methane/>.

³⁷ ECL § 75-0101(2) (“‘Carbon dioxide equivalent’ means the amount of carbon dioxide by mass that would produce the same global warming impact as a given mass of another greenhouse gas over an integrated twenty-year time frame after emission.”).

³⁸ See Emily Grubert, *At Scale, Renewable Natural Gas Systems Could Be Climate Intensive: The Influence of Methane Feedstock and Leakage Rates*, 15 *Env’t Rsch. Letters* 084041 (2020), <https://iopscience.iop.org/article/10.1088/1748-9326/ab9335/pdf>.

³⁹ Sasan Saadat et al., Earthjustice and Sierra Club, *Rhetoric vs. Reality: The Myth of “Renewable Natural Gas” for Building Decarbonization* 8-10 (2020), https://earthjustice.org/sites/default/files/feature/2020/report-decarb/Report_Building-Decarbonization-2020.pdf.

carbon neutral. “RNG from intentionally produced methane is always GHG positive unless total system leakage is 0.”⁴⁰ Thus, even if an offset scheme were legal, it would still not suffice to render RNG zero-emissions.

In reality, the available and climate or environmentally beneficial supply of RNG is very small. The supply of true, capturable waste methane (e.g., from uncontrolled landfills and wastewater treatment plants) amounts to less than 1% of current gas demand.⁴¹ NRG—the developer behind a recent New York gas plant proposal—acknowledges that supply limitations render RNG infeasible. Specifically, NRG notes that the Fresh Kills Landfill on Staten Island was the largest landfill in the world prior to its closure in 2001 and produces only 62,500 cubic feet of methane per hour—enough to supply only 1.6% of NRG’s proposed Astoria plant’s needs operating at full load (3.9 million cubic feet per hour).⁴²

B. Hydrogen Combustion: Neither Zero-Emissions Nor Feasible

1. Hydrogen combustion is not zero-emissions.

Combusting even pure hydrogen has GHG emissions, particularly when the gas leaks, as it is prone to do given its small molecule size.⁴³ Hydrogen itself is an indirect GHG with a global warming potential of 5.8 over 100 years.⁴⁴ On a shorter timescale, hydrogen’s global warming potential is far higher: 19 to 38 on a 20-year timescale and 34 to 66 on a 10-year timescale.⁴⁵ Hydrogen combustion also generates NO_x emissions, a harmful air pollutant and indirect GHG in its own right⁴⁶ that in turn, contributes to the formation of ozone, particulate matter, and acid rain.⁴⁷ In fact, combusting hydrogen may produce NO_x emissions at six times the rate of combusting methane.⁴⁸

⁴⁰ Grubert, *supra* note 38, at 4.

⁴¹ Saadat, *supra* note 39, at 9.

⁴² AECOM, *Draft Supplemental Environmental Impact Statement: Astoria Replacement Project* 4-21 (2021), https://www.nrg.com/assets/documents/legal/astoria/00_2021/astoria-draft-dseis-06-30-2021.pdf.

⁴³ *Best Practices Overview: Hydrogen Leaks*, H2 Tools, <https://h2tools.org/bestpractices/hydrogen-leaks> (last visited May 4, 2022).

⁴⁴ See, e.g., Richard Derwent et al., *Global Environmental Impacts of the Hydrogen Economy*, 1 Int’l J. Nuclear Hydrogen Prod. & Application 57, 64 (2006), https://www.researchgate.net/profile/David-Stevenson-13/publication/228402009_Global_environmental_impacts_of_the_hydrogen_economy/links/0912f510a9dedbc643000000/Global-environmental-impacts-of-the-hydrogen-economy.pdf.

⁴⁵ Ilissa B. Ocko & Steven P. Hamburg, *Climate Consequences of Hydrogen Leakage*, Atmospheric Chemistry & Physics 5 (preprint, discussion started Feb. 18, 2022), <https://acp.copernicus.org/preprints/acp-2022-91/acp-2022-91.pdf>.

⁴⁶ Gerhard Lammel & Hartmut Graßl, *Greenhouse effect of NO_x*, 2 Env’t Sci. Pollution Rsch. Inst. 40 (1995), <https://pubmed.ncbi.nlm.nih.gov/24234471/>.

⁴⁷ *Basic Information about NO₂*, EPA, <https://www.epa.gov/no2-pollution/basic-information-about-no2#Effects> (last updated June 7, 2021).

⁴⁸ Lew Milford et al., *Hydrogen Hype in the Air*, Clean Energy Grp. (Dec. 14, 2020), <https://www.cleaneenergy.org/hydrogen-hype-in-the-air/> (“The bad news is that H2 combustion can produce dangerously high levels of nitrogen oxide (NO_x). Two European studies have found that burning hydrogen-enriched natural gas in an industrial setting can lead to NO_x emissions up to *six times that of methane* (the most common element in natural gas mixes). There are numerous other studies in the scientific literature about the difficulties of controlling NO_x emissions from H2 combustion in various industrial applications. Even the Trump Administration’s

As noted above, NO_x emissions leading to ozone formation is a major health concern for New Yorkers. The state’s Department of Health has identified the reduction of air pollution, including ozone, as a key indicator to drive improvements in asthma rates and public health outcomes throughout the state. The New York State Prevention Agenda 2019-24 notes the “extensive evidence” linking ozone and fine particulate matter with respiratory and cardiovascular illness and death and establishes a goal to “reduce exposure to outdoor air pollutants,” with an emphasis on vulnerable groups.⁴⁹

Further, given that no commercially available power plant turbines can burn pure hydrogen, even power plants with access to green hydrogen will continue to burn a mixture of hydrogen and fossil gas. Burning just a 50/50 gas blend of green hydrogen and methane would still require industry to overcome significant obstacles. Hydrogen’s energy density (one-third of fossil gas), molecular size (the smallest of all molecules), flammability, and flame speed (an order of magnitude faster than fossil gas), all pose challenges to retrofitting gas plants to run on hydrogen, which scale with increasing concentrations of hydrogen in the power plant’s fuel blend.⁵⁰ Running a gas turbine on pure hydrogen also “requires different fuel delivery piping and components; different gas turbine controls, ventilation systems, and enclosures; and different selective catalytic reduction systems for NO_x removal.”⁵¹ Many of these modifications are also needed for operation on high blends of hydrogen mixed with traditional gas.⁵²

2. The limited supply of true green hydrogen precludes its use as a replacement for fossil gas power generation.

Globally, less than one percent of hydrogen is produced via electrolysis and only about 0.02% qualifies as green hydrogen (meaning that it is produced from electrolysis powered purely by renewable electricity).⁵³ Green hydrogen production is currently limited to demonstration projects, with projects “mostly in the single-digit MW scale.”⁵⁴

Instead, nearly all hydrogen within the United States is gray hydrogen, produced via steam methane reformation (“SMR”) of fossil gas, an energy-intensive process emitting both GHGs and harmful co-pollutants including NO_x, fine particulate matter, carbon monoxide, and

Department of Energy ‘Hydrogen Program Plan’ identifies H₂ combustion as a significant problem.” (emphasis in original)).

⁴⁹ N.Y. Dep’t of Health, *New York’s State Health Improvement Plan: Prevention Agenda 2019–2024*, at 72-73 (2021), https://www.health.ny.gov/prevention/prevention_agenda/2019-2024/docs/ship/nys_pa.pdf.

⁵⁰ Hydrogen Report at 24 (citing GE, *Hydrogen as a Fuel for Gas Turbines* 3-4 (2021), https://www.ge.com/content/dam/gepower-new/global/en_US/downloads/gas-new-site/future-of-energy/hydrogen-fuel-for-gas-turbines-gea34979.pdf).

⁵¹ *Id.* at 24-25 (citing GE, *Hydrogen as a Fuel for Gas Turbines* 4 (2021)).

⁵² *Id.* at 25.

⁵³ *Id.* at 7; Emanuele Taibi et al., Int’l Renewable Energy Agency, *Green Hydrogen Cost Reduction: Scaling up Electrolysers to Meet the 1.5°C Climate Goal* 18 (2020), https://irena.org/-/media/Files/IRENA/Agency/Publication/2020/Dec/IRENA_Green_hydrogen_cost_2020.pdf; see also Int’l Energy Agency, *Decarbonising Industry with Green Hydrogen* (Nov. 17, 2020), <https://www.iea.org/articles/decarbonising-industry-with-green-hydrogen> (defining “‘green’ hydrogen” as hydrogen produced “using electricity generated from renewable energy sources”).

⁵⁴ Taibi et al., *supra* note 53, at 18.

volatile organic compounds.⁵⁵ And because electrolysis is so energy-intensive, hydrogen produced using grid-average electricity is even more carbon-intensive than hydrogen produced via SMR.⁵⁶

Blue hydrogen, produced from fossil fuels but using carbon capture, is scarcely better than gray hydrogen in terms of GHG emissions. Professors Bob Howarth and Mark Jacobson recently determined that the carbon dioxide equivalent emissions from blue hydrogen were no more than 9-12% lower than gray hydrogen.⁵⁷ While blue hydrogen with carbon capture reduces (but does not eliminate) direct carbon dioxide emissions, it increases fugitive emissions of methane, a more potent greenhouse gas.⁵⁸ Professors Howarth and Jacobson also conducted several sensitivity analyses—for example, assuming low methane leakage rates or high carbon capture rates—and found these did not change their overall conclusion: “the greenhouse gas footprint of blue hydrogen, even with capture of carbon dioxide from exhaust flue gases, is as large as or larger than that of natural gas.”⁵⁹ And in fact, even assuming the blue hydrogen was produced using 100% zero-emissions renewable energy, the study found that total GHG emissions were still nearly half those from combusting natural gas as a fuel.⁶⁰

3. Generating sufficient quantities of green hydrogen would necessitate a massive and infeasible buildout of renewable generation.

The diversion of New York’s currently limited supply of wind and solar energy towards the energy-intensive production of green hydrogen for combustion at gas plants would make it significantly harder to meet the CLCPA’s mandate for 70% renewable generation by 2030 and necessitate a massive and infeasible buildout of renewable generation capacity:

Meeting the global demand for green hydrogen that one industry group predicts in 2050 could require the build out of solar resources that cover more than 81,250 square miles. This is a land area larger than the state of Minnesota. Using green hydrogen in segments that can use direct electricity would exacerbate the challenge of deploying sufficient renewable resources by wasting renewable capacity on energy-intensive electrolysis.⁶¹

This is especially true as demand for New York’s limited renewable energy supply will grow as electrification becomes more widespread throughout the state and as the agencies work to meet the requirement for zero-emissions electricity by 2040.⁶²

⁵⁵ Hydrogen Report at 10.

⁵⁶ *Id.* at 13.

⁵⁷ Robert W. Howarth & Mark Z. Jacobson, *How Green is Blue Hydrogen?*, *Energy Sci. & Eng’g* 1676, 1682-83 (2021), <https://onlinelibrary.wiley.com/doi/epdf/10.1002/ese3.956>.

⁵⁸ *Id.* at 1682.

⁵⁹ *Id.* at 1683-84.

⁶⁰ *Id.* at 1684-85.

⁶¹ Hydrogen Report at 17 (citation omitted).

⁶² See Julie McNamara, *What’s the Role of Hydrogen in the Clean Energy Transition?*, Union of Concerned Scientists (Dec. 9, 2020), <https://blog.ucsusa.org/julie-mcnamara/whats-the-role-of-hydrogen-in-the-clean-energy-transition>; see also E3 (“Pathways to Deep Decarbonization in New York State”) at 29 (June 24, 2020), <https://climate.ny.gov/-/media/Project/Climate/Files/2020-06-24-NYS-Decarbonization-Pathways-Report.pdf> (describing increased electricity demand as building and transportation electrification expands).

Repowering even a single gas peaker plant with green hydrogen would require thousands of megawatts of new renewable generation. According to gas turbine manufacturer GE, which has created a calculator to estimate renewable capacity required to power its turbines with “green” hydrogen, using today’s technology, it would take over 1,800 MW of renewables operating at a 100% capacity factor to generate the “green” hydrogen necessary to power a single 437 MW GE H-Class 7HA.03 turbine operating at a 30% capacity factor, as has been proposed by NRG to build in Astoria, Queens.⁶³ Because renewable generation resources typically operate at a lower capacity factor, even greater renewable capacity would be required to fully power such a facility with green hydrogen. For a 437 MW peaking turbine, GE’s calculator discloses that “[y]ou will need the equivalent of 2408—1.5 MW wind turbines to create the required energy for your hydrogen infrastructure.”⁶⁴ *In other words, it would require more than 8 times the capacity of wind generation to produce the green hydrogen required to power a turbine operating only at a 30% capacity factor!*

4. Other practical considerations render hydrogen combustion infeasible.

Finally, even if green hydrogen were actually zero-emissions and available in sufficient quantities, its high cost, risk of leakage, and tendency to corrode pipeline infrastructure still render hydrogen combustion infeasible as a power generation source.

Hydrogen—and especially green hydrogen—is prohibitively expensive. The consultant for Danskammer Energy, which has proposed to construct a new gas plant in the Hudson Valley, concedes that “[a]t current estimates, the cost of hydrogen in 2040 is \$45/MMBtu [“Metric Million British thermal unit”] (in nominal terms) for up to 30tBtu of fuel.”⁶⁵ In contrast, the Energy Information Administration (“EIA”) 2022 Annual Energy Outlook projects 2040 natural gas costs below \$4/MMBtu (in 2021 dollars).⁶⁶ And because using renewable electricity to power electrolysis is energy inefficient—approximately 20 to 40% of the energy is lost—green hydrogen will always be much more expensive than renewable electricity.⁶⁷

⁶³ *Hydrogen and CO2 Emissions Calculator for Gas Turbines*, General Electric, <https://www.ge.com/gas-power/future-of-energy/hydrogen-fueled-gas-turbines/hydrogen-calculator> (last visited May 4, 2022). These figures were derived from use of the cited calculator and based on NRG’s proposed GE H-Class 7HA.03 turbine and NRG’s permitted 30 percent capacity factor. See AECOM, *Draft Supplemental Environmental Impact Statement: Astoria Replacement Project 3-14* (2021), https://www.nrg.com/assets/documents/legal/astoria/00_2021/astoria-draft-dseis-06-30-2021.pdf.

⁶⁴ *Hydrogen and CO2 Emissions Calculator for Gas Turbines*, General Electric, <https://www.ge.com/gas-power/future-of-energy/hydrogen-fueled-gas-turbines/hydrogen-calculator> (last visited May 4, 2022) (choose “7HA.03” from question 1 dropdown; choose “simple” from question 2 dropdown; drag to “peaker” on question 3 bar; drag to “100%” on question 4 bar; choose “US New York(RGGI)” from question 5 dropdown; then follow the “Calculate my decarbonization savings” hyperlink; under results, find the “Electricity Required” section.).

⁶⁵ ICF, *Supplemental Greenhouse Gas Analysis of the Danskammer Energy Center 11* (2020), <https://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId={6C430CE8-D270-4D09-A4A0-031523905E63}>.

⁶⁶ EIA, *Annual Energy Outlook 2022: with Projections to 2050*, at 17, 30 (2022), https://www.eia.gov/outlooks/aeo/pdf/AEO2022_Narrative.pdf.

⁶⁷ Hydrogen Report at 16; Energy Transitions Commission, *Making the Hydrogen Economy Possible: Accelerating Clean Hydrogen in an Electrified Economy*, at 22 n.42 (2021), <https://www.energy-transitions.org/publications/making-clean-hydrogen-possible/>.

And as a smaller molecule than methane, hydrogen has a propensity for leakage at perhaps three times the rate of fossil gas.⁶⁸ Its small size also enhances diffusion within the lattice structure of pipeline material, leading to embrittlement.⁶⁹ Researchers studying the potential for leakage and embrittlement of hydrogen in steel pipes found that the “numerical obtained results have shown that using pipelines designed for natural gas conduction to transport hydrogen is a risky choice” and recommended that the “replacement of the transported gas [with hydrogen] has to be preceded by feasibility studies taking in account both aspect of fatigue of material and pipeline failure due to overpressure and also due to hydrogen embrittlement.”⁷⁰

Hydrogen’s corrosive and explosive tendencies, the need for higher pipeline pressure, and the risk of leakage could create serious safety issues.⁷¹ These problems are compounded in New York due to its aging pipeline infrastructure. In New York, for example, in 2020, there were 18,330 gas leaks reported, or about 370 gas leaks per 1,000 miles of pipeline.⁷² This crumbling infrastructure cannot handle an influx of a far more corrosive and leak prone fuel without significant costs to New York’s taxpayers and to the environment.

* * *

Rather than invest in the false solution of RNG and hydrogen combustion, NYSERDA should instead direct its support and funding toward the aggressive pursuit of true, clean, long-duration storage solutions consistent with a zero-emissions grid.

V. Conclusion

In summary, the FSP should include recommendations to:

- Prohibit new gas generation with only the narrowest exception for unavoidable and NYISO and local transmission operator confirmed reliability needs.
- Proactively and deliberately phase out existing gas generation with a priority focus on reducing emissions and closing plants in disadvantaged communities.

⁶⁸ Justin Mikulka, *Decoding the Hype Behind the Natural Gas Industry’s Hydrogen Push*, Desmog (Jan. 14, 2021), <https://www.desmog.com/2021/01/14/decoding-hype-behind-natural-gas-industry-hydrogen-push/> (citing M. W. Melaina et al., NREL; *Blending Hydrogen into Natural Gas Pipeline Networks: A Review of Key Issues* (2013)).

⁶⁹ Zahreddine Hafsi et al., *Hydrogen Embrittlement of Steel Pipelines during Transients*, 13 *Procedia Structural Integrity* 210, 210 (2018), <https://www.sciencedirect.com/science/article/pii/S2452321618302683#>.

⁷⁰ *Id.* at 210, 217.

⁷¹ Mike Soraghan, *Hydrogen Could Fuel U.S. Energy Transition. But is it Safe?*, E&E News (Aug. 20, 2021), <https://www.eenews.net/articles/hydrogen-could-fuel-u-s-energy-transition-but-is-it-safe/>; P.K.A. Verdonck & M. Kammoun, *Is Hydrogen a Viable Alternative to Lithium Under the Current Energy Storage Regulatory Framework?*, Lexology (Jan. 27, 2021), <https://www.lexology.com/library/detail.aspx?g=e908442d-8b33-462c-ae23-9c1dcb917127>.

⁷² U.S. Dep’t of Transp., Pipeline and Hazardous Materials Safety Admin., *Gas Distribution, Gas Gathering, Gas Transmission, Hazardous Liquids, Liquefied Natural Gas (LNG), and Underground Natural Gas Storage (UNGS) Annual Report Data*, Gas Distribution Annual Data - 2010 to Present (2020) [Workbook], https://www.phmsa.dot.gov/sites/phmsa.dot.gov/files/data_statistics/pipeline/annual_gas_distribution_2010_present.zip.

- Accelerate the installation of renewables through continued refinements to the ORES siting and NYSERDA RFP processes and by proposing legislation to ensure the timely processing of renewable developers' interconnection requests.
- Invest in transmission and distribution system upgrades, with a focus on ameliorating impacts to disadvantaged communities.
- Expand deployment of battery storage and fund research and development of zero-emission long duration storage technologies.
- Reject and discontinue expenditures on the false solutions of RNG and hydrogen combustion, which are neither zero-emissions nor feasible at scale.

Sincerely,

Acadia Center
 All Our Energy
 Alliance for a Green Economy
 Brookhaven Landfill Action and
 Remediation Group
 Catskill Mountainkeeper
 Clean Air Coalition of WNY
 Climate Reality Project, Capital Region NY
 Chapter
 Climate Reality Project, Finger Lakes
 Greater Region NY Chapter
 Climate Reality Project, Hudson Valley and
 Catskills Chapter
 Climate Reality Project, Long Island
 Chapter
 Climate Reality Project, NYC
 Climate Reality Project, Westchester NY
 Chapter
 Climate Reality Project, Western New York
 Chapter
 Climate Solutions Accelerator of the
 Genesee-Finger Lakes Region
 Committee to Preserve the Finger Lakes
 Community Food Advocates
 CUNY Urban Food Policy Institute

Earthjustice
 Environmental Advocates NY
 Fossil Free Tompkins
 Gas Free Seneca
 Green Education and Legal Fund
 HabitatMap
 Hotshot Hotwires
 Long Island Progressive Coalition
 Nassau Hiking & Outdoor Club
 Network for a Sustainable Tomorrow
 New Clinicians for Climate Action
 North Brooklyn Neighbors
 NY Renews
 People of Albany United for Safe Energy
 PUSH Buffalo
 Riverkeeper Inc.
 Roctricity
 Seneca Lake Guardian
 Sierra Club
 South Shore Audubon Society
 Sustainable Finger Lakes
 University Network for Human Rights
 UPROSE
 WE ACT for Environmental Justice



Buildings

I. Introduction

Commenters broadly support the CAC’s recommendations to decarbonize the residential and commercial building sectors. We fully support the Housing and Efficiency Advisory Panel’s recommendations and also urge the CAC to elaborate on certain aspects in the Final Scoping Plan (“FSP”). Increasing energy efficiency and electrification to fully transition off combustion for heating, cooling, and cooking will allow New York State to meet the CLCPA’s 2030 and 2050 emission reduction mandates by eliminating greenhouse gas (“GHG”) emissions from buildings. On-site fuel combustion in residential, commercial, and industrial buildings generates 32% of the State’s total GHG emissions, and combined buildings emissions, including electricity generation used for buildings, constitute approximately 45% of the State’s total GHG emissions.¹

¹ NYSERDA, *New York State Greenhouse Gas Inventory: 1990-2016* S-4 fig. S-1 (2019), <https://www.nyserdera.ny.gov/About/Publications/EA-Reports-and-Studies/Greenhouse-Gas-Inventory>; NYSERDA, *New York State Greenhouse Gas Inventory Fact Sheet*, <https://www.nyserdera.ny.gov/About/Publications/EA-Reports-and-Studies/Greenhouse-Gas-Inventory>; N.Y. Climate Action Council, *Draft Scoping Plan* (“DSP”), 24 (2021), <https://climate.ny.gov/-/media/Project/Climate/Files/Draft-Scoping-Plan.pdf>.

The technology required to make this transition exists today, but the State must work to overcome awareness and financial barriers. Additionally, the State must avoid endorsement of false solutions: costly and environmentally damaging dead ends such as combusting hydrogen or biomethane (which the gas industry calls “renewable natural gas” or “RNG”) for heating, domestic hot water, clothes drying, and cooking in buildings.

Ambitious energy efficiency improvements are also a critical part of the strategy to reduce building emissions and will benefit both communities and residents by reducing electricity bills and improving air quality. Additionally, building shell improvements will contribute to improving energy efficiency and lowering energy bills, while enhancing New Yorkers’ health and comfort.

We commend the Council for championing a just transition from New York’s reliance on gas and other fossil fuels to clean, renewable energy, which will make the building sector safe, healthy, affordable, efficient, and emissions-free. To fully decarbonize the building sector, the Council must (1) recommend that the State massively scale up financial support for energy efficiency and electrification upgrades, which includes the creation of an energy efficiency and electrification readiness fund to address pre-existing building conditions like roof repair/replacement, foundation repair, and abatement of legacy environmental toxins (e.g., lead, mold, and asbestos), (2) encourage the governor to direct the Public Service Commission to implement regulations that will phase out fossil fuel in an intentional and equitable way, (3) phase in new zero emission standards for existing and new buildings, (4) direct the PSC to develop and adopt a new rate design which incentivizes and is compatible with conservation, efficiency, and electrification, (5) prioritize accessible consumer finance and protection, (6) bolster local supply chains and create local jobs, and (7) ensure that building decarbonization solutions serve as a benefit to the grid.

Low-income households and disadvantaged communities have paid and continue to pay a greater price for the State’s dependence on fossil fuels because they face disproportionate levels of air pollution and related illnesses. As we increase efficiency and electrification, we must make sure the investments and policies are intentionally designed from the outset to include disadvantaged communities. While we endorse the Council’s recommendations, we are concerned by the lack of specificity regarding how the investments and policies will be targeted to reduce the burden and increase the benefits in disadvantaged communities. As a first step in implementing an equitable energy efficiency and building decarbonization strategy, we recommend that NYSERDA, DEC, PSC, HCR, and OGS work together, in consultation with the CJWG, and develop a tool to direct green investments and benefits to disadvantaged communities in line with the equitable investment mandate in the CLCPA. This tool should be executed quickly to ensure an equitable transition and incorporate the interim (and then final) criteria and maps for disadvantaged communities, identify which communities have been helped and by which program, and include annual goals. The tool should include specific benchmarks to ensure that investments are continually reaching DACs and LMI households at the pace needed to meet the Climate Act mandates. DACs and LMI households should be the vanguard of a just transition. Therefore, we recommend that investments are frontloaded and barriers to accessing energy efficiency and electrification programs and services are overcome in the early years of the transition. Early and targeted action will protect DACs and LMI households from being stranded

on a decommissioning, aging, and increasingly expensive to maintain fossil fuel energy system. In addition, it is imperative that an energy efficiency and electrification strategy does not drive increased housing costs for DACs and LMI households and must not result in gentrification and neighborhood displacement.

II. Regulations to Phase Out Fossil Fuels in Buildings

As the DSP recognizes, regulations must be put in place to phase out and retire fossil fuel use in buildings. New legislation is also needed to enact all of the policy changes required to achieve building electrification statewide. As discussed further in comments on the Gas Transition Chapter, electrification is essential to decarbonizing buildings.

A. Electrification is the only sensible approach to decarbonization of the building sector.

Commenters agree that widespread electrification of buildings is essential and urge the CAC to reject strategies built around combustion of alternative fuels such as RNG and hydrogen. Production and use of these fuels result in significant GHG emissions and other environmental impacts.² For example, hydrogen combustion creates significant emissions of nitrogen oxides (NO_x), a precursor to both ground-level ozone and fine particulate matter.³ These pollutants adversely impact local air quality and can cause serious health problems, and disproportionately affect communities of color.⁴ In fact, combusting hydrogen may produce NO_x emissions at six

² Sasan Saadat & Sara Gersen, Earthjustice, *Reclaiming Hydrogen for a Renewable Future: Distinguishing Oil & Gas Industry Spin from Zero-Emission Solutions* 10–11, 28 (Aug. 2021), https://earthjustice.org/sites/default/files/files/hydrogen_earthjustice.pdf.

³ See, e.g., Jeffrey Goldmeier et al., Gen. Elec., *Hydrogen as a Fuel for Gas Turbines* 5 (2021), https://www.ge.com/content/dam/gepower-new/global/en_US/downloads/gas-new-site/future-of-energy/hydrogen-fuel-for-gas-turbines-gea34979.pdf (finding that a 50/50 mixture of hydrogen and fossil gas (by volume) could increase concentrations of NO_x in gas exhaust by 35% using General Electric combustion turbines); Mirko Bothien et al., ETN Global, *Hydrogen Gas Turbines: The Path Towards a Zero-Carbon Gas Turbine* 9 (2020), <https://etn.global/wp-content/uploads/2020/01/ETN-Hydrogen-Gas-Turbines-report.pdf> (warning that higher flame temperatures for hydrogen-gas blends will produce more health-harming NO_x emissions “if no additional measures are undertaken”); Mehmet Salih Celtek & Ali Pinarbasi, *Investigations on Performance and Emission Characteristics of an Industrial Low Swirl Burner While Burning Natural Gas, Methane, Hydrogen-Enriched Natural Gas and Hydrogen as Fuels*, 43 Int’l J. of Hydrogen Energy 1194, 1205 (2018), <https://www.sciencedirect.com/science/article/abs/pii/S0360319917319791> (finding that hydrogen combustion can emit more than six times as much NO_x as does methane combustion).

⁴ NO_x is a pollutant that damages heart and respiratory function, impairs lung growth in children, and leads to higher rates of emergency room visits and premature death. Further, the state’s Department of Health has identified the reduction of air pollution, including ozone, as a key indicator to drive improvements in asthma rates and public health outcomes throughout the state. The New York State Prevention Agenda 2019-2024 notes the “extensive evidence” linking ozone with respiratory and cardiovascular illness and death and establishes a goal to “reduce exposure to outdoor air pollutants,” with an emphasis on vulnerable groups. See N.Y. State Dep’t of Health, *New York’s State Health Improvement Plan: Prevention Agenda 2019-2024* 72–3 (updated Sept. 2, 2021), https://www.health.ny.gov/prevention/prevention_agenda/2019-2024/docs/ship/nys_pa.pdf; see also *Nitrogen Dioxide & Health*, California Air Resources Board, <https://ww2.arb.ca.gov/resources/nitrogen-dioxide-and-health> (last visited May 31, 2022); see also Christopher W. Tessum et al., *PM_{2.5} Polluters Disproportionately and Systemically Affect People of Color in the United States*, 7 Sci. Advances eabf4491 (2021), <https://www.science.org/doi/pdf/10.1126/sciadv.abf4491>.

times the rate of combusting methane.⁵ Additionally, a growing body of research indicates that blending hydrogen with natural gas for use in buildings is highly inefficient and does little to reduce GHG emissions.⁶ Moreover, because of the difference in chemical properties between hydrogen and methane, it is not feasible to use the existing natural gas infrastructure to combust hydrogen in buildings.⁷ Natural gas pipelines can only handle low hydrogen blends before creating safety risks.⁸ Relying heavily on hydrogen to power appliances would therefore require utilities to retrofit or replace most pipelines, a huge capital investment, whereas electrification is significantly less disruptive because equipment and appliance replacements can occur incrementally using existing electrical infrastructure.⁹

Additionally, less than one percent of hydrogen is produced via electrolysis and only about 0.02 percent qualifies as green hydrogen (meaning that it is produced from electrolysis powered purely by renewable electricity).¹⁰ Green hydrogen production is currently limited to demonstration projects, with projects “mostly in the single-digit MW scale.”¹¹ Instead, nearly all hydrogen within the United States is gray hydrogen, produced via steam methane reformation (“SMR”) of fossil gas, an energy-intensive process emitting both GHGs and harmful co-pollutants including NO_x, fine particulate matter, carbon monoxide, and volatile organic compounds.¹² And because electrolysis is so energy-intensive, hydrogen produced using grid-average electricity is even more carbon-intensive than hydrogen produced via SMR.¹³ Producing hydrogen is also water-intensive, and at a large scale could lead to water stress.

Production and use of other non-fossil fuels such as RNG also results in harmful environmental impacts and can increase net GHGs.¹⁴ Indeed, because RNG is chemically identical to fossil gas, its combustion emits the same level of GHGs.¹⁵ Additionally, RNG cannot provide a meaningful source of energy: the supply of true, capturable waste methane (e.g., from

⁵ Lew Milford et al., Clean Energy Group, *Hydrogen Hype in the Air* (Dec. 14, 2020), <https://www.cleaneenergy.org/hydrogen-hype-in-the-air/>. (“The bad news is that H₂ combustion can produce dangerously high levels of nitrogen oxide (NO_x). Two European studies have found that burning hydrogen-enriched natural gas in an industrial setting can lead to NO_x emissions up to *six times that of methane* (the most common element in natural gas mixes). There are numerous other studies in the scientific literature about the difficulties of controlling NO_x emissions from H₂ combustion in various industrial applications” (emphasis in original).

⁶ Sara Baldwin et al., Energy Innovation Policy & Tech., *Assessing the Viability of Hydrogen Proposals: Considerations for State Utility Regulators and Policymakers 2* (2022), <https://energyinnovation.org/wp-content/uploads/2022/04/Assessing-the-Viability-of-Hydrogen-Proposals.pdf>.

⁷ *Id.*

⁸ *Id.* at 7

⁹ *Id.* at 10.

¹⁰ Saadat & Gersen, *supra* note 2, at 7; Emanuele Taibi et al., Int’l Renewable Energy Agency, *Green Hydrogen Cost Reduction: Scaling Up Electrolysers to Meet the 1.5°C Climate Goal* 18 (2020), https://irena.org/-/media/Files/IRENA/Agency/Publication/2020/Dec/IRENA_Green_hydrogen_cost_2020.pdf; *see also* *Decarbonising Industry with Green Hydrogen*, Int’l Energy Agency (Nov. 17, 2020), <https://www.iea.org/articles/decarbonising-industry-with-green-hydrogen> (defining “‘green’ hydrogen” as hydrogen produced “using electricity generated from renewable energy sources”).

¹¹ Taibi et al., *supra* note 10, at 18.

¹² Saadat & Gersen, *supra* note 2, at 10.

¹³ *Id.* at 13.

¹⁴ *See generally id.*

¹⁵ *Alternative Fuels Data Center*, U.S. Dep’t of Energy, https://afdc.energy.gov/fuels/natural_gas_basics.html#:~:text=RNG%20qualifies%20as%20an%20advanced,liquefied%20for%20use%20in%20vehicles (last visited May 31, 2022).

uncontrolled landfills and wastewater treatment plants) amounts to less than 1% of current gas demand.¹⁶

Moreover, any strategy built around continued reliance on the gas pipeline system necessitates massive investments in replacement of leak-prone pipes. Utilities are collectively planning to invest billions of dollars in LPP replacement over the next several decades. These costs are grossly disproportionate to their climate benefits and most of these costs could be avoided through a more surgical, safety-based approach to focusing instead on the most hazardous and environmentally significant leaks. For these reasons, building decarbonization must be pursued through electrification, and reliance on alternative fuels must be rejected.

B. The State should adopt standards for zero-emissions and electric appliances.

Commenters agree that the State should adopt standards for zero-emission equipment (B2). Additionally, to promote the transition to zero-emission equipment and appliances, the State should eliminate incentives for energy efficient gas appliances: such incentives would only prolong reliance on gas.

Transitioning from fossil fuel to electric appliances will achieve efficiency gains in addition to climate and public health benefits. For example, NYSERDA estimates that a geothermal heat pump is up to three times more efficient than an oil-fueled system, and that an air source heat pump is up to 50% more efficient than an oil-fueled system.¹⁷ Additionally, the CAC should reject false claims that heat pumps provide insufficient heat in cold climates. Geothermal heat pumps can operate in any climate, and modern cold-climate heat pumps can sufficiently heat homes in cold climates when the right technology is paired with the right improvements to building envelope. Field tests of some cold-climate air source heat pumps in Minnesota found that these systems maintain effectiveness up to negative thirteen degrees Fahrenheit.¹⁸

However, the onus should not be on customers to determine whether they are being sold a heat pump that is adequate for their building. Standards must be set and enforced for the sale and marketing of cold-climate heat pumps in New York so that only the most efficient cold-climate air source heat pumps are sold to customers in New York and that no customer is sold a heat pump for a building that does not have the adequate insulation to support that appliance. Heat pumps that are not designed for or that do not adequately provide heat in cold New York's cold climate should not be sold to customers.

New and modified buildings present an enormous opportunity to advance electrification and efficiency and achieve progress towards the State's 2050 mandates. Commenters agree with the DSP's recommendation to adopt, on an accelerated timeframe informed by the integration

¹⁶ Sasan Saadat et al., Earthjustice & Sierra Club, *Rhetoric v Reality: The Myth of "Renewable Natural Gas" for Building Decarbonization* 9 (July 2020), https://earthjustice.org/sites/default/files/feature/2020/report-decarb/Report_Building-Decarbonization-2020.pdf.

¹⁷ NYSERDA, NYS Clean Heat, *Keep Your Home Comfortable All Year Long* 3, https://cleanheat.ny.gov/assets/pdf/CHC-SFR-HP-buyingguide-br-1-v3_acc.pdf.

¹⁸ Minn. Com. Dep't Energy Res., *Cold Climate Air Source Heat Pump* 19 (2017), <https://www.mncee.org/sites/default/files/report-files/86417-Cold-Climate-Air-Source-Heat-Pump-%28CARD-Final-Report-2018%29.pdf>.

analysis, State building codes that will require new construction to be highly efficient and all-electric by a specified date and require grid-interactive electrical appliances as feasible (B1). Additionally, Commenters support the recommendation that DOS, NYSERDA, and the Code Council advance all-electric code provisions that prohibit fossil fuel equipment for space conditioning, hot water, cooking, and other appliances. It is critical that the State align regulatory incentives so that new, decarbonized, all-electric buildings cost less to build to code than those requiring additional gas infrastructure.

While commenters are disappointed that the All-Electric Building Act and the Advanced Building, Appliance, and Equipment Standards Act were not included in the 2022 State budget, the CAC should call on the State Legislature to pass both bills. Moreover, as the DSP recognizes, additional funding for local code enforcement, including training and a credentialing program for Energy Code inspectors, is critical to ensure that revised codes are implemented.

C. Public service law must align with Climate Act.

The FSP should recommend that PSC and DPS bring their policies in line with the Climate Act's mandates. Safe and reliable service cannot supplant the Climate Act. Reliability and climate justice are not incompatible, and the State must resolve any perceived tension between the two. Commenters support the elimination of subsidies for fossil fuels and subsidies for gas connections; the 100-foot rule; and the utility obligation to serve. The CAC should accordingly urge the Legislature to pass the Gas Transition and Affordable Energy Act, a necessary step for ending the expansion of gas infrastructure. Additionally, as the State develops a robust non-pipeline alternative framework, non-pipeline alternatives should be treated as the default, with gas investments made only as a last resort. To that end, Commenters support the proposal to develop a comprehensive plan to end investments in new gas infrastructure in coordination with municipalities.

III. Support Massive Investments to Scale Up Financial Support for EE Building Envelope Upgrades and Electric Heat Pump Systems

The CAC is aware that New York State has not yet allocated the necessary resources to decarbonize the existing building sector and explains that both public resources and private capital will be needed to pay for the required building upgrades. In the DSP, the CAC explains that to “meet New York’s GHG emission reduction requirements, more than 250,000 housing units each year will need to adopt electric heat pumps and energy efficiency measures from around 2030 onward.”¹⁹ Moreover, this year, Governor Hochul announced a plan to achieve two million electrification-ready homes by 2030, including by electrifying 200,000 homes per year by the end of the decade.²⁰ The DSP identifies some dedicated financial support programs that enable households to benefit from energy upgrades, but overall, the Council fails to identify which existing programs will contribute to fund efficiency upgrades and electrification installations and also neglects to provide policymakers with a financial roadmap to fund the

¹⁹ DSP at 131.

²⁰ NYSERDA, *Governor Hochul Announces Plan to Achieve 2 Million Climate-Friendly Homes by 2030* (Jan. 5, 2022), <https://www.nyserdera.ny.gov/About/Newsroom/2022-Announcements/2022-01-05-Governor-Hochul-Announces-Plan-to-Achieve-2-Million-Climate-Friendly-Homes-By-2030>.

Council’s one hundred billion dollar estimate.²¹ Based on the current incentives, rebates, and tax credits available to tenants and property owners, there is a clear risk that current programs have insufficient funds to support the transition off fossil fuels.²² Additionally, the FSP should include an accurate accounting of how many homes currently have heat pumps—without knowing where we start, the State cannot know how much financing is needed to achieve the 250,000 target.

In addition to developing a financial plan, the CAC must identify and direct policymakers to remove roadblocks to efficiency upgrades and electrification by improving affordability with incentives, rate reform, and financing with a primary focus on making it work for disadvantaged communities. A policy designed to work for the most vulnerable is more likely to work for everyone. The CAC must aim to be comprehensive and holistic. Combining energy efficiency and electrification programs with public health programs and initiatives could have both climate and health benefits. For example, braiding efficiency, weatherization, and building shell improvements into lead and mold remediation would address environmental and health concerns and enable New Yorkers to reside in healthier environments. Finally, the FSP must include benchmarks and incentives for end users, contractors, manufacturers and distributors, and policymakers in order to implement the Council’s massive decarbonization plan.

A. Equity must be centered when decarbonizing the building sector.

As New York State begins to accelerate its progress towards efficiency upgrades and electrification, the CAC must ensure that policies and investments focus on equity. The CLCPA requires “disadvantaged communities to receive forty percent of overall benefits of spending on clean energy and energy efficiency programs, projects or investments in the areas of housing workforce development, pollution reduction, low-income energy assistance, energy, transportation and economic development ...[and] no less than thirty-five percent of the overall benefits of spending.”²³ We commend the CAC for committing to meet or exceed the benefits required by the Climate Act. However, the programs that could be leveraged to achieve this goal are not sufficiently funded, scalable, or accessible to customers, and are hamstrung by supply constraints and the ability of industry and contractors to dramatically increase project volume while centering their business models around equity, community benefits, and high road labor standards. The CAC must create a plan for how the State will meet its statutory requirements. The Draft Scoping Document identifies several programs which will benefit LMI customers and disadvantaged communities, but many include limitations or continue to install fossil fuel boilers and appliances. Below are examples of existing programs:

- **EmPower** is a NYSERDA-administered weatherization and energy conservation program funded by utility ratepayers. Empower will spend up to around \$10,000 per household on free energy assessments, insulation, efficient lighting, and energy star refrigerators/appliances for families below a statewide income level. Homeowners and renters are both eligible. In cases where renters are income eligible, Empower will provide services at no cost with consent of the landlord. Empower, however, is not explicitly targeted to efficiency through electrification

²¹ DSP at 130.

²² See *id.* at 131, 134–136.

²³ ECL § 75-0117.

and may install new boilers and appliances that rely on natural gas, thus locking in the household for more years of gas usage in contravention of the State's goals to decarbonize and promote public health. Additionally, Empower provides no enforceable protection for tenants and there is a risk of rent increase or displacement once upgrades have been made.

- **The New York Federal Weatherization Assistance Program (WAP)** has \$65 million in funding and is administered by local non-profits throughout the State. The non-profits provide assistance with primarily insulation-related repairs as well as providing efficient appliances and lighting. Eligibility is for households below 60% of the State median income. Like Empower, WAP is not explicitly targeted to efficiency through electrification, and may install new boilers and appliances that rely on natural gas, thus also locking in the household for more years of gas usage.
- **NY-Sun Solar Equity Framework:** Is expected to disperse \$1.6 billion in loans for solar projects across the State. Most of the allotted funds are directed to commercial and industrial projects. However, only \$200 million are directed to increase access to solar energy for LMI households, affordable housing, and environmental justice communities.²⁴
- **NY Clean Heat:** is the State's building electrification program, which is jointly administered by the investor-owned utilities and NYSERDA. NYS Clean Heat is planning to invest nearly \$700 million to develop the market and drive customer adoption of efficient building electrification solutions and train the workforce required for this transformation.

Many of the existing State programs provide some financial assistance to lower the up-front cost of efficiency and electrification upgrades, by offering rebates for appliances. Customers are encouraged to weatherize and insulate their homes, and utilities are rolling out make-ready programs to update electric panels to accommodate electric appliances. However, while these programs are helpful, they are inadequate to meet financing needs at the scale required by the CAC Draft Scoping Plan. The CAC must urge policymakers to significantly increase the amount of funding to be used for programs in order to reduce GHG emissions.

As the Climate Action Council has recognized, the transition off fossil fuels in homes and buildings must be done in a manner that does not harm or burden lower-income households and disadvantaged communities. This includes phasing out incentives for non-electric appliances, which contribute to health harms and will become obsolete as the State advances building electrification. Instead, programs should focus on the specific steps needed to electrify homes. Additionally, while efficiency upgrades and electrification will provide individual households, communities, and the State enormous benefits, there are also some risks that must be managed. As such, efficiency upgrades and electrification must be implemented equitably and with due consideration. Ignoring the risks instead of addressing them could exacerbate the burdens on an already under-resourced group of people.

²⁴ NYSERDA, *NY-Sun's Commercial & Industrial Program: Making Solar Energy More Accessible to Homes, Businesses, and Communities* 5 (2021) <https://www.cenhud.com/globalassets/pdf/my-energy/solar-summit/2021/solar-summit-2021---ny-sun-program-updates.pdf>.

LMI and DAC customers and tenants already face significant obstacles to paying their utility bills and enjoying the benefits of building electrification. We applaud the Council for accounting for New York’s existing Energy Affordability Policy, which seeks to limit energy costs for low-income households to no more than 6% of their income. However, we urge the Council to direct the PSC and the legislature to develop a much more robust and workable electricity affordability policy in New York so that efficiency upgrades and electrification are made truly affordable for LMI customers as well as DACs, and that the electricity needed to operate electric equipment is affordable. Additionally, electrification and weatherization programs should be coordinated with other affordable housing programs to streamline the upgrade process for consumers. LMI and DAC customers requiring pre-weatherization and pre-electrification work, such as mold, lead, or asbestos remediation, should be able to access a single program that helps them navigate the entire process. In addition, as mentioned above, this customer base also needs protections to ensure that landlords who receive incentives and financial support to electrify do not indiscriminately and unjustly increase rents. We have concerns that as landlords and property owners move towards efficiency upgrades and electrification, tenants will face rent increases, displacement, and even eviction. The answer to this concern is not to avoid the upgrades—the housing stock in New York must be improved in order to protect the occupants from the climate and health impacts of burning fossil fuels—but the CAC should work with the housing advocates and environmental justice communities to develop the right local protections for tenants.

In order to prioritize energy affordability, the CAC must urge policymakers to integrate programs and require public assistance and benefits programs to communicate with each other. The public assistance and administering agencies include, but are not limited to: Temporary Assistance, HEAP, Weatherization Assistance Program, WIC, SNAP, Section 8 Vouchers, and NYCHA. Through increased integration and communication among programs, education, outreach, and bundling of benefits will increase which will help households and all New Yorkers to decrease their energy consumption. In partnership with community-based organizations, energy democracy advocates, and environmental justice communities, NYSERDA will soon launch a statewide Regional Clean Energy Hubs initiative that will lay a critical foundation for increasing access to energy efficiency and electrification upgrades for DACs and LMI households. However, funding levels for this new initiative are not adequate to fully engage these communities across a spectrum of interconnected needs from housing and neighborhood stabilization to workforce development to MWBE participation and capacity building.

B. The State must identify barriers, benchmarks and incentives for customers, contractors, manufacturers, and policymakers.

To adopt electric heat pumps and energy efficiency measures for more than 250,000 housing units each year,²⁵ New York State needs to address the fact that most people have still never heard of a heat pump and most people do not know about State and utility efficiency programs. The Council needs to direct the DEC, PSC, HCR, and NYSERDA to develop a major communications campaign to inform the public and conduct deep outreach to consumers and the workforce in order to inform them about the health, economic, and safety benefits of efficiency and electrification. To ensure compliance with the Climate Law mandates, the CAC must also

²⁵ DSP at 131.

establish benchmarks and incentives for (1) updating both single family and multi-family household for electrification, (2) purchasing household electric appliances, (3) installing the household electric appliances, and (4) efficiency upgrades (such as weatherization to improve building envelopes). The CAC should consider the following:

- Committing to all-electric public buildings—including public housing—is an important way to demonstrate and publicize the benefits of electrification while also reducing emissions;
- The house-by-house approach to weatherization and electrification will not get us to scale at the pace necessary and will be inequitable. Utilities and their workforces must be engaged and required to help plan and scale the investments and conversions necessary to meet the efficiency and electrification goals;
- Policymakers should invest in electrification and weatherization training programs as well as apprenticeship programs which will create long-term middle-class careers with livable wages for people facing barriers to competitive employment opportunities;
- Prevailing wages and project labor agreements should be incorporated into State and utility investments in efficiency and electrification programs;
- Creating a split incentive target program for landlords and tenants. Often times, renters and LMI customers face significant obstacles to enjoying the benefits of building electrification when the landlord is responsible for decisions about appliance replacements and the tenant is responsible for paying the energy bills. Funding must be provided to tackle this split incentive problem and identify the affected households and educate both tenant and landlord about available programs for purchase incentives and ratepayer protection;
- Building owners and tenants need to be educated, and myths surrounding increased costs and electrification must be dispelled; and
- Educate suppliers, contractors, HVAC professionals, electricians, and/or plumbers and provide them with incentives to sell, install and service advanced electric appliances. Capacity building and financial support to contractors should prioritize MWBEs and worker-owned cooperative businesses.
- Some incentives and rebates will be addressed and expanded in investor-owned utility rate cases. Typically, utility-run electrification programs in New York involve technology-based rebates to residential customers.²⁶ To expand on utility-run electrification programs, the PSC should authorize utilities to provide access to financing for home energy upgrades and require utilities to partner with community-led Regional Clean Energy Hubs in creating customer education plans and prioritizing financial assistance and education to residents in disadvantaged communities. Non-utility program administrators are more likely offer more

²⁶ Utilities offer a program called Heating Electrification Make-Ready, which involves making significant upgrades to electrical boxes, breaker boxes, and fuse boxes to accommodate electric appliances and climate-forward technologies. *See, e.g.*, ConEd Customer Energy Solutions Panel Testimony at 29, 22-E-0064 (Item No. 3) & 22-G-0065 (Item No. 2) (Jan 28, 2022). Switching appliances to run on electricity instead of fossil fuels increases the amount of power flowing through a home’s breaker box, which is why upgrades are necessary. As many as 70% of breaker boxes in the U.S. homes will need to be upgraded to handle the increased load of electric heating and vehicle charging. *See Residential Energy Consumption Survey (RECS)*, U.S. Energy Information Administration, <https://www.eia.gov/consumption/residential/> (last visited May 31, 2022).

comprehensive program models, including whole-home retrofit programs, financing for upgrades, workforce training programs, low- and moderate-income programs, market development, and other strategies. Program administrators should offer point of sale incentives to contractors and homeowners in order to resolve any cost differential.

It is critical that electric appliances—heat pumps and induction cooktops—are consistently the least expensive option for consumers, not only in terms of the expected total lifetime cost to own but also in terms of upfront costs. However, upstream incentives for heat pump manufacturers are currently not widely funded. Expanding and funding upstream incentives for heat pump manufacturers would be the most cost-effective energy savings and GHG reductions because they are scalable and savings can be passed on to end-use customers. Such incentives are not currently widely funded, presenting an opportunity for the State to leverage public investments to expand access to heat pumps.

The presence of well-known and available rebates will also help time-crunched consumers avoid making a rushed decision to install a fossil fuel appliance. Contractors and dealers should be knowledgeable of the financial incentives and rebates and should also encourage replacement of fossil equipment that is nearing the end of its useful life and likely to fail. The FSP should propose a plan similar to “cash for clunkers,” which would encourage retirement of fossil fuel appliances in exchange for a new electric one. Lastly, when offering financial incentives, it is important to not limit a program to tax credits for electrification because this would exclude customers who lack the tax equity to access these incentives.

Because contractors play a key role in building electrification, the CAC should consider establishing certification pathways to create standardized knowledge and skills for heat pumps and other electrification technology installation and maintenance. Expanding the workforce and educating and motivating contractors to install and service heat pumps is a critical strategy for scaling up capacity for electrification in buildings. Utilities can also consider offering partnerships with contractors to encourage heat pump sales and deployment. Most replacement purchases of furnaces, water heaters, and air conditioners happen when the current appliance stops working. Because this leaves little time for research, the recommendation of the general contractor, HVAC professional, electrician, or plumber who will do the installation has an outsized impact. That makes it essential both to motivate professionals to recommend this equipment and to have distributors stock heat pumps to prevent delay. Providing targeted upstream and midstream incentives to distributors, contractors, and qualified professionals will both increase sales of advanced electric appliances and move New York faster toward a mature heat pump market.

C. The State must adopt measures to protect consumers during the transition to electrification.

The FSP should incorporate the CJWG’s recommendations that are designed to protect consumers, and in particular, low-income ratepayers.

The Buildings Chapter of the DSP acknowledges concerns raised by the CJWG regarding the need to frontload investments, technical assistance, and other resources in DACs to ensure

those communities are not left stranded in an aging and expensive fossil fuel-based energy system. However, the DSP fails to align strategies that prioritize investments in DACs with the proposed timelines for the adoption of new codes and standards. These strategies must move in lockstep to create the conditions for a just transition. The Buildings Chapter calls for the creation of a new Retrofit and Electrification Readiness Fund. This fund should be created as soon as possible and capitalized at a minimum of \$1 billion per year, pursuant to the recommendations of the Energy Efficiency and Housing Advisory Panel. The fund should provide targeted direct investments to DACs and the affordable housing sector. Capitalizing the fund robustly and expeditiously will ensure that early investments in DACs and LMI households are done with proven technology, and therefore, that those investments will truly serve previously underserved populations. Additionally, the FSP should explicitly recognize and seek to achieve the State's goal that low-income families spend no more than 6% of their income on energy bills.²⁷

The DSP fails to advance recommendations from the CJWG regarding consumer and community protections that would guard against energy rate increases, predatory business practices, mistreatment by landlords, and gentrification and neighborhood displacement. The following recommendations should be included in the final Scoping Plan:

- Utility customer bill of rights;
- Safety net guarantee of affordable renewable energy to every household;
- Public education to combat the power of the investor-owned utilities and the opaqueness of the energy system; and
- Clawback provisions regarding public subsidies to private landlords as an anti-displacement strategy to mitigate rent increases and evictions.

Additionally, the CAC should consider recommending that intervenor funding be made available for rate cases, as in Article 10 cases. Rate cases are highly technical, and meaningful participation requires staff time, legal counsel, and expert witnesses. The costs of these services present high barriers to participation, creating an access to justice problem. Providing intervenor funding would allow more stakeholders to participate in this critical process.

Finally, the State should endeavor to increase and improve access to financing for energy efficiency and electric equipment. As discussed, only \$200 million of NY-Sun's financing is directed to increase access to solar energy for LMI households, affordable housing, and environmental justice communities.²⁸

The State can increase financing in the communities that need it most by expanding zero- or low-interest loans such as NYSERDA's Smart Energy and on-bill recovery loan programs. The FSP should also recommend reforming NYSERDA's underwriting requirements for on-bill recovery loans by eliminating credit score and debt-to-income requirements on projects that are budget neutral or cashflow positive, meaning projected energy savings are equal to or greater than project costs. Carefully designed tariff-based on-bill financing programs administered by utilities that include robust consumer protections are another viable option for scaling investments in energy efficiency and electrification. Additionally, the FSP should recommend

²⁷ Commenters note that as heating, cooking, and transportation electrify, this figure might require adjustment.

²⁸ NYSERDA, *supra* note 24, at 5.

watchdog measures to ensure that consumers are protected against predatory lending when borrowing money for capital improvements.

IV. New Standards for Existing Buildings

New York State must also tackle emissions from existing buildings through standards that incentivize electrification and energy efficiency measures.

A. Energy performance and zero-emissions standards are needed.

Commenters agree that energy efficiency performance standards are needed for large existing buildings (B2). The standards should include penalties for noncompliance, which can finance resources and staff for monitoring and enforcement.

Commenters support the DSP's recommendation to issue zero-emissions standards to phase out fossil fuel combustion equipment. Specifically, Commenters endorse the requirement of zero-emission equipment and appliances at the time of replacement and agree that regulations to end on-site GHG emissions must be added to the State Energy Code.

Commenters further support the proposal for a feebate, but, consistent with the CJWG's recommendations, urge the CAC to further flesh out and explain how the feebate would work in practice. Additionally, it is critical that new zero-emission standards send clear market signals to industry stakeholders, including manufacturers, architects, real estate agents, builders, and contractors. Commenters are also concerned about a lack of benchmarks and enforcement mechanisms. Establishing a 2030 target for building emissions is a good first step that provides an interim objective ahead of the 2050 mandate. However, the FSP should include concrete benchmarks and enforcement mechanisms to keep the State on track and guarantee that the Climate Law mandates are fulfilled.

In addition to establishing zero-emission standards, the State should establish and enforce energy efficiency standards for any appliances that are sold, leased, or installed in New York State where not preempted by federal law. As the DSP recognizes, electrification and efficiency are two sides of the same coin. However, we urge the CAC to accelerate its proposed timelines in the FSP. There is no reason to delay until 2030 the adoption of an energy efficiency performance standard for existing commercial and multifamily properties larger than 25,000 feet, and indeed, doing so would harm low-income households living in multifamily properties who will continue to endure the energy burden created by inefficient housing.

B. Benefits must target DACs and LMI households.

Additionally, Commenters support the CJWG's recommendation for regulatory sunset dates for combustion equipment in buildings coupled with public investments to benefit DACs and minimize the risk of negative impacts on lower-income and vulnerable households. While DACs should be targeted for the early benefits of retrofits, low-income housing should not be used as a test case for unproven technology. Additionally, while energy affordability is a challenge for many LMI households, and therefore, energy disclosure provides important

information to prospective renters and buyers, disinvestment could occur if disclosure of energy performance makes properties less attractive. Therefore, investment should be frontloaded to ensure that DACs truly reap the benefits of electrification as quickly as possible. Adequate technical and financial assistance will be critical to DACs.

V. New and Creative Rates to Accommodate Electric End Uses

While we commend the Council for identifying eleven key strategies that will allow New York to meet the climate mandates, developing a new and equitable rate design and structure that will accommodate electric end uses must also be included as a key strategy. To ensure affordability, the Council must recommend that the PSC evaluate and develop a variety of new rate structures, including but not limited to: an electrification rate, a low-to-moderate income rate class, voluntary time of use rates, voluntary demand rates, electric vehicle charging rates, renewable distributed generation rates, as well as bill assistance measures for LMI customers. In addition to developing new rate structures, the Council should urge the PSC to set a goal of ensuring that residential customers pay no more than six percent of their income for electricity.

Electrification should reduce costs, enhance grid flexibility, and reduce greenhouse gas emissions. Unlike traditional electricity load, much of the new electrification load from water and space heating and electric vehicles is flexible in when it draws energy from the grid. When connected with smart meters and thermostats, heat pumps can provide load-shifting capacity and electric vehicles can be programmed to charge in the middle of the night. Heat pumps run for longer at lower outputs than gas boilers and furnaces and with demand management, a customer can shift times of heating and cooling away from electricity network peaks. Thus, electric appliances not only benefit customers but also utilities who are concerned about peak loads with constrained networks. Because peak energy costs more than base load, utilizing load shifting with heat pumps allows customers to reduce their costs while also putting less strain on the electric grid.

Because electric appliances and electric vehicles are more efficient and flexible, it is imperative that policymakers understand customer needs and ensure customer involvement.

VI. Bolstering Local Supply Chains and Creating Local Jobs

The State should ensure that the transition to an electric building stock promotes workforce development and supports local supply chains. The FSP should recognize the important role that labor groups and community-based organizations can play in workplace development. Simply creating jobs is not sufficient: the State should endeavor to usher in a transition that creates good, well-paying jobs that are available in DACs and other underserved communities. Equitable job training programs should be launched in DACs so that people doing energy efficiency improvements and retrofits in DACs are residents of those communities. In sum, building electrification should aim to create communities-to-career pathways so that job creation has sustained and meaningful impacts on communities. In order to reach equitable employment outcomes, the CAC should direct NYSERDA, the PSC, DOL, and HCR to each leverage its authority around licensing, permitting, procurement, and program participation to transform the composition and diversity of the clean energy workforce in the State. Effective

policies and tools to accomplish this begin with high road labor standards and extend to Project Labor Agreements, community workforce agreements, and first source hiring.

Additionally, the final Scoping Plan should incorporate the CJWG's proposal that Minority- and Women-owned businesses be prioritized in contracting for building upgrades.

VII. Beneficial Electrification

Building decarbonization should achieve benefits to the electric grid and to public health, in addition to reducing greenhouse gases. Widespread building electrification will dramatically increase demand for electricity if the State does not properly manage the process by instating demand response, energy efficiency, and other load reduction measures discussed above. Additionally, the State must be able to reliably integrate renewable energy into the power supply at the lowest possible cost. The State should accordingly work to make sure that supply chains and delivery agents are able to meet rising demand for zero-emission buildings technologies.

A. The Final Scoping Plan should ensure that building decarbonization solutions benefit to the grid.

DPS, NYSERDA, and the PSC should offer a statewide electric panel upgrade program to promote beneficial electrification. Beneficial electrification refers to replacing fossil fuel equipment with electric alternatives in ways that deliver specific benefits, including lower costs to utility customers and better management of the electric grid.²⁹ Beneficial electrification of housing entails a combination of installing highly efficient electric equipment and appliances, reducing energy load by improving building envelopes, and using demand controls to manage the amount and timing of energy consumption.³⁰ Done properly, beneficial electrification of housing should lower housing cost burdens and improve housing quality to create a safe and healthy indoor environment, while improving how buildings interact with the electric grid. Housing cost burdens are lowered when inefficient gas appliances are replaced with more-efficient electric appliances such as heat pumps.

Moreover, when paired with demand controls and well-insulated building envelopes—and onsite renewable energy and/or battery storage—building electrification can be leveraged to reduce and manage the timing of electric energy consumption, decreasing overall strain on the grid.³¹ As the DSP recognizes, flexible demand technologies like smart water heaters and smart thermostats can achieve further load reductions and benefits to the grid.³² To begin the data collection and energy management required to utilize these technologies, the State should launch a panel upgrade system that is strategically focused to provide the greatest grid and ratepayer benefit.

Securing these benefits is critical to the just transition that the State seeks. In addition to upgrading panels to ensure these outcomes, the State should also empower and fund community-

²⁹ Yu Ann Tan et al., Rocky Mountain Inst., *Decarbonizing Homes* 9 (2021).

³⁰ *Id.* at 10.

³¹ *Id.*

³² *Id.* at 24.

based organizations to shape beneficial electrification policies, which will further socialize beneficial electrification at the community level.

B. Building electrification should achieve public health benefits.

Building electrification generates immediate public health benefits in addition to contributing to greenhouse gas reductions. In developing policies to electrify buildings, the State should consider health impacts associated with poor indoor air quality and insufficient thermal comfort. Additionally, DEC should take a more active role in monitoring indoor air quality, which will allow the State to target beneficial electrification efforts where they are most needed.

Burning fossil fuels in buildings contributes to dangerous air pollution including nitrogen oxides, carbon monoxide, fine particulate matter, ultrafine particles, and formaldehyde.³³ Cooking with gas, for example, can create spikes in nitrogen dioxide and carbon monoxide to levels that would violate pollution standards if they occurred outdoors.³⁴ Nitrogen dioxide poses threats to respiratory health; short-term exposure can aggravate respiratory disease, and long-term exposure can *cause* respiratory disease.³⁵ A study by the Rocky Mountain Institute found that children living in homes with a gas stove are 42% more likely to experience asthma symptoms and 24% more likely to be diagnosed with asthma by a doctor.³⁶ Additionally, when space and water heating appliances such as furnaces and boilers burn gas or oil to produce heat they also emit pollutants that can cause asthma attacks, hospitalizations, and even premature death.³⁷ A study released last year found that in 2017, fossil fuel combustion in residential and commercial buildings in New York lead to an estimated 1,940 premature deaths and totaled \$21.7 billion in health harms—more than in any other state in the country.³⁸ Burning fossil fuels within buildings is also a significant source of *outdoor* air pollution, including particulate matter and ozone.³⁹

Moreover, communities of color are disproportionately harmed by the indoor and outdoor air pollution emitted by gas-fired appliances, and the cumulative impacts of this pollution paired with other exposures produces poor health outcomes.⁴⁰

Insufficient heating and cooling contribute to these health harms. Heat is the deadliest form of extreme weather and can also cause or contribute to non-fatal health impacts ranging from headaches to heart attacks.⁴¹ In New York City, every year, on average 10 people die from heat stress, 100 die of chronic conditions exacerbated by extreme heat, and 350 die of natural causes exacerbated by heat.⁴² Cooling technology such as air conditioning provides critical

³³ *Id.* at 16.

³⁴ *Id.* at 17.

³⁵ *Id.* at 16.

³⁶ *Id.* at 17.

³⁷ *Id.* at 16.

³⁸ *What is the Health Impact of Buildings in Your State?*, Rocky Mountain Institute, <https://rmi.org/health-air-quality-impacts-of-buildings-emissions#NY> (last visited May 31, 2022).

³⁹ Tan et al., *supra* note 29 at 22.

⁴⁰ *Id.* at 10.

⁴¹ *Weather Related Fatality and Injury Statistics*, National Weather Service, <https://www.weather.gov/hazstat/> (last visited May 31, 2022); Tan et al., *supra* note 29 at 19.

⁴² Tan et al., *supra* note 29 at 19.

protection from the risks of extreme heat. Maintaining safe temperatures during cold weather is equally important. However, many families must choose between heating and eating when energy costs are unaffordable. Beneficial electrification that combines improved buildings envelopes, greater grid reliability, and lower household energy burdens will reduce the risk that New Yorkers will be without sufficient heating or cooling.

In sum, building tight, well-ventilated buildings with all-electric appliances and equipment will directly improve resident health by reducing indoor allergens and pollutants, including those emitted by combusting fossil fuels, and reduce outdoor combustion pollutants. Additionally, these benefits should be targeted at DACs and LMI households, which are disproportionately burdened by air pollution, lack of sufficient heating and cooling, and household energy costs.

VIII. Conclusion

In summary, the FSP should:

- Clarify that electrification is the only sensible path to building decarbonization and reject combustion of alternative fuels including hydrogen and RNG.
- Recommend that the State adopt standards for zero-emissions and electric appliances.
- Recommend that the State amend the Public Service Law to be in line with the Climate Law mandates.
- Recommend that electrification and energy efficiency investments should be front-loaded in LMI households and DACs.
- Recommend that the State establish energy performance and zero-emissions standards for existing buildings.
- Recognize that electrification should benefit public health and the grid.

Respectfully submitted,

Acadia Center
All Our Energy
Alliance for a Green Economy
Brookhaven Landfill Action and
Remediation Group
Clean Air Coalition of WNY
Climate Reality Project, Capital Region NY
Chapter
Climate Reality Project, Finger Lakes
Greater Region NY Chapter
Climate Reality Project, Hudson Valley and
Catskills Chapter
Climate Reality Project, Long Island
Chapter
Climate Reality Project, NYC

Climate Reality Project, Westchester NY
Chapter
Climate Reality Project, Western New York
Chapter
Climate Solutions Accelerator of the
Genesee-Finger Lakes Region
Committee to Preserve the Finger Lakes
Community Food Advocates
CUNY Urban Food Policy Institute
Earthjustice
Environmental Advocates NY
Fossil Free Tompkins
Gas Free Seneca
Green Education and Legal Fund
HabitatMap

Hotshot Hotwires
Long Island Progressive Coalition
Nassau Hiking & Outdoor Club
Network for a Sustainable Tomorrow
New Clinicians for Climate Action
North Brooklyn Neighbors
NY Renews
People of Albany United for Safe Energy
PUSH Buffalo
Rewiring America

Roctricity
Sane Energy Project
Seneca Lake Guardian
Sierra Club
South Shore Audubon Society
Sustainable Finger Lakes
University Network for Human Rights
UPROSE
WE ACT for Environmental Justice
350NYC



Economy-Wide Mechanisms

I. Introduction

The Economy-Wide Mechanisms Chapter proposes three market-based policy options: carbon pricing, cap-and-invest, and a clean energy supply standard. For the reasons discussed below, Commenters support a carbon pricing scheme. And while the discussion to date has largely focused on pricing carbon dioxide, an effective pricing scheme must include all significant greenhouse gases since methane and nitrous oxide contributed about a third of total greenhouse gas emissions in the state.

II. Endorsement of Carbon Pricing

Commenters support a carbon pricing scheme with safeguards to ensure that the cost burden is not regressive and that the State provides targeted relief for low- and moderate-income (“LMI”) consumers and disadvantaged communities (“DACs”). Additionally, it is critical that the revenue raised by a carbon pricing scheme be dedicated to investments in clean energy and energy efficiency measures and compliant with the Climate Law’s mandate that at least 35%-- and the goal that 40%--of such investments be made in DACs.¹

¹ See, e.g., ECL § 75-0117; PSL § 66-p(6).

A. Carbon pricing will provide a reliable source of revenue, which must be invested in clean energy and energy efficiency measures.

It is critical that New York establish a reliable source of revenue for climate investments. As the DSP recognizes, cap-and-invest is vulnerable to fluctuations in pricing,² and therefore could result in insufficient revenue; and a clean energy supply standard would not raise any revenue.³ By contrast, carbon pricing provides certainty with respect to the revenue that will be generated.⁴ Mechanisms can be developed, as needed, to adjust the price upward or downward in response to emission reduction levels. Moreover, adjusting a carbon price as necessary is easy compared to course-correcting a cap-and-invest system in which allowances are annually auctioned off and where there are fewer opportunities to adjust on a continual basis. Additionally, the primary advantage of a cap-and-invest system is the ability to set a binding and certain emissions cap.⁵ Because the Climate Law itself sets binding emissions caps, doing so through a pricing mechanism is unnecessary.⁶

Raising revenue is critical, as the State will need significant investments in energy efficiency, electrification, and renewable energy measures to achieve the just transition envisioned by the Climate Law. The CAC estimates that \$10 billion of annual investments in the early years will be needed to achieve the Climate Law mandates.⁷ NY Renews, joined by multiple State lawmakers, called for \$15 billion of climate funding in the 2022–23 budget based on its assessment that such a sum was required to jumpstart implementation of the Climate Law.⁸ The final 2022–23 budget woefully underfunds climate measures—headlined by a one-time \$4.2 billion environmental bond subject to voter approval—underscoring the urgent need for a dedicated revenue stream to fund the State’s transition to a clean energy economy.⁹

Any revenue raised by a carbon pricing scheme must be protected against “budget raids” that divert funding towards non-climate programs. According to an analysis by Environmental Advocates NY, \$251 million in funds raised by the Regional Greenhouse Gas Initiative (“RGGI”) has been raided since the program’s creation in 2008.¹⁰ While the 2022–23 budget finally included language to prevent future raids of RGGI funds, the Climate Action Council

² N.Y. Climate Action Council, *Draft Scoping Plan* (“DSP”) 256 (2021), <https://climate.ny.gov/-/media/Project/Climate/Files/Draft-Scoping-Plan.pdf>.

³ *Id.* at 259.

⁴ *Id.* at 256.

⁵ *Id.* at 255.

⁶ ECL § 75-0107.

⁷ *Climate Action Council October 14, 2021 Meeting*, Climate Action Council (2021), <https://climate.ny.gov/-/media/Migrated/CLCPA/Files/2021-10-14-CAC-Meeting-presentation.ashx>.

⁸ *State Legislators and NY Renews Coalition Call for \$15 Billion Investment in Climate, Jobs, and Justice*, NY Renews (Jan. 27, 2022), <https://www.nyrenews.org/news/2022/1/27/state-legislators-and-ny-renews-coalition-call-for-15-billion-investment-in-climate-jobs-and-justice>.

⁹ Sen. Alessandra Biaggi, *2022-2023 New York State Budget Breakdown*, N.Y. State Senate (Apr. 16, 2022), <https://www.nysenate.gov/newsroom/articles/2022/alessandra-biaggi/2022-2023-new-york-state-budget-breakdown>.

¹⁰ Reinvent Albany, *Memo of Support: S6268B (May)/A7611B (Kelles)* (2022), <https://reinventalbany.org/2022/03/ending-raids-on-clean-energy-funds/>.

(“CAC”) should propose safeguards to ensure that the same does not happen to the revenue raised by a new carbon pricing scheme.

Finally, any revenue raised must be invested in compliance with the Climate Law’s requirement that at least 35% of investments in clean energy and energy efficiency programs be made in and benefit DACs; and should meet the goal that at least 40% of such investments are funneled into DACs.¹¹

B. Carbon pricing will support the transition from fossil fuels to electrification.

A price on carbon is also the most equitable and efficient way to usher in the transition from a fossil fuel-based economy to one powered by clean power and electrification.

By contrast, a clean energy supply standard would fail to raise much-needed revenue and would promote gaseous fuels, which would prolong exposure to health-harming co-pollutants like particulate matter and nitrogen oxides and delay a transition to zero-emissions economy. Focusing on carbon intensity, rather than emissions reductions, does not address dangerous co-pollutants that disproportionately harm communities of color—and does not achieve the greenhouse gas (“GHG”) cuts required to meet the Climate Law mandates. Reliance on alternative “low-carbon” fuels, such as hydrogen blends, would slow decarbonization by prolonging the use of natural gas while increasing dangerous co-pollutants. For example, hydrogen combustion creates significant emissions of nitrogen dioxide, a precursor to both ground-level ozone and fine particulate matter.¹² These pollutants adversely impact local air quality and can cause serious health problems, and disproportionately affect communities of color.¹³ New York already suffers from unhealthy ozone levels. The New York Metropolitan Area (“NYMA”) failed to attain the 2008 ozone National Ambient Air Quality Standards

¹¹ ECL § 75-0117.

¹² See, e.g., Jeffrey Goldmeier et al., Gen. Elec., *Hydrogen as a Fuel for Gas Turbines: A Pathway to Lower CO₂* 5 (2021), https://www.ge.com/content/dam/gepower-new/global/en_US/downloads/gas-new-site/future-of-energy/hydrogen-fuel-for-gas-turbines-gea34979.pdf (finding that a 50/50 mixture of hydrogen and fossil gas (by volume) increased concentrations of NO_x in gas exhaust by 35% using General Electric combustion turbines); Mirko Bothien et al., ETN Global, *Hydrogen Gas Turbines: The Path Towards a Zero-Carbon Gas Turbine 9* (2020), <https://etn.global/wp-content/uploads/2020/01/ETN-Hydrogen-Gas-Turbines-report.pdf> (warning that higher flame temperatures for hydrogen-gas blends will produce more health-harming NO_x emissions “if no additional measures are undertaken”); Mehmet Salih Celik & Ali Pinarbasi, *Investigations on Performance and Emission Characteristics of an Industrial Low Swirl Burner While Burning Natural Gas, Methane, Hydrogen-Enriched Natural Gas and Hydrogen as Fuels*, 43 Int’l J. of Hydrogen Energy 1994, 1205 (2018) (finding that hydrogen combustion can emit more than six times as much NO_x as does methane combustion).

¹³ NO_x is a pollutant that damages heart and respiratory function, impairs lung growth in children, and leads to higher rates of emergency room visits and premature death. Further, the state’s Department of Health has identified the reduction of air pollution, including ozone, as a key indicator to drive improvements in asthma rates and public health outcomes throughout the state. The New York State Prevention Agenda 2019-2024 notes the “extensive evidence” linking ozone with respiratory and cardiovascular illness and death and establishes a goal to “reduce exposure to outdoor air pollutants,” with an emphasis on vulnerable groups. See N.Y. State Dep’t of Health, *New York’s State Health Improvement Plan: Prevention Agenda 2019-2024* 72–3, https://www.health.ny.gov/prevention/prevention_agenda/2019-2024/docs/ship/nys_pa.pdf (last updated Sept. 2, 2021); see also *Nitrogen Dioxide & Health*, CA. Air Res. Bd., <https://ww2.arb.ca.gov/resources/nitrogen-dioxide-and-health> (last visited Feb. 3, 2022); see also Christopher W. Tessum et al., *PM_{2.5} Polluters Disproportionately and Systemically Affect People of Color in the United States*, 7 Sci. Advances eabf4491 (2021).

(“NAAQS”) by the required date and was reclassified to be in “Serious” nonattainment effective September 23, 2019.¹⁴ Earlier this year, the U.S. Environmental Protection Agency proposed to downgrade NYMA to “Severe” nonattainment, given persistent challenges in meeting the standard.¹⁵ In 2018, NYMA was designated in nonattainment of the 2015 ozone NAAQS as well.¹⁶

Production of other non-fossil fuels such as “renewable natural gas” (“RNG”) also results in harmful environmental impacts and can increase net GHGs.¹⁷ As discussed more fully in comments on the Electric Sector, collection and generation of RNG facilities usually involves expensive and complicated systems that frequently leak and do not address the majority of GHG emissions from these facilities. They encourage systems that generate *more* methane to increase a feedstock, rather than systems that generate far less methane. Not only is this extremely expensive, but dairy RNG is likely to produce little to no climate change benefit.¹⁸

Moreover, because RNG is chemically identical to natural gas,¹⁹ its combustion emits the same level of GHGs.²⁰ A recent study suggests that combustion exhaust from biomethane (RNG used for heating and cooking) is even more toxic than exhaust from fossil gas.²¹ Additionally, the available and climate- or environmentally-beneficial supply of RNG is very small. The supply of true, capturable waste methane (e.g., from uncontrolled landfills and wastewater treatment plants) amounts to less than 1% of current gas demand.²²

Biodiesel, another “low-carbon” liquid fuel often touted by industry, has been shown to have a negligible impact on reducing PM emissions and can actually increase nitrous oxide, hydrocarbon, and carbon monoxide emissions, and its widespread use would therefore violate the

¹⁴ Reclassification of Several Areas Classified as Moderate for the 2008 Ozone National Ambient Air Quality Standards, 84 Fed. Reg. 44238 (Aug. 23, 2019).

¹⁵ *Proposed Determinations of Attainment by the Attainment Date, Extension of the Attainment Date, and Reclassification of Several Areas Classified as Serious for the 2008 Ozone National Ambient Air Quality Standards*, EPA, https://www.epa.gov/system/files/documents/2022-04/fact-sheet-proposed-2008-ozone-determinations-revised_0.pdf (last updated Apr. 14, 2022).

¹⁶ Additional Air Quality Designations for the 2015 Ozone National Ambient Air Quality Standards, 83 Fed. Reg. 25794 (June 4, 2018).

¹⁷ See Sasan Saadat et al., Earthjustice & Sierra Club, *Rhetoric vs. Reality: The Myth of “Renewable Natural Gas” for Building Decarbonization* (2020), https://earthjustice.org/sites/default/files/feature/2020/report-decarb/Report_Building-Decarbonization-2020.pdf.

¹⁸ *Id.* at 24.

¹⁹ *Alternative Fuels Data Center: Natural Gas Fuel Basics*, U.S. Dep’t of Energy, https://afdc.energy.gov/fuels/natural_gas_basics.html#:~:text=RNG%20qualifies%20as%20an%20advanced,liquefied%20for%20use%20in%20vehicles (last visited Apr. 27, 2022).

²⁰ As discussed in comments on the Electricity Chapter, NRG, the developer behind a recent NY gas plant proposal acknowledged as much in their Draft Supplemental Environmental Impact Statement: “RNG does not result in zero onsite GHG emissions. As RNG is methane and fully interchangeable with conventional natural gas, onsite GHG emissions would remain the same whether the Project is operating on RNG or conventional natural gas.” AECOM, *Draft Supplemental Environmental Impact Statement: Astoria Replacement Project* 3-51 (2021), https://www.nrg.com/assets/documents/legal/astoria/00_2021/astoria-draft-dseis-06-30-2021.pdf.

²¹ See Michael J. Kleeman et al., California Energy Commission, Publ’n No. CEC-500-2020-034, *Air Quality Implications of Using Biogas to Replace Natural Gas in California* (2020).

²² Saadat, *supra* note 16, at 9.

CLCPA’s requirement that agencies prioritize reductions of co-pollutants in DACs.²³ Furthermore, full lifecycle analyses of biodiesel and biofuel production demonstrate that when accounting for land-use impacts of corn-based ethanol or electricity from wood combustion, these products harm rather than benefit the climate due to releases of carbon from land conversion and reductions in carbon storage and sequestration relative to native vegetation, among numerous other harms to biodiversity, water quality, and other ecosystem processes.²⁴

In the transportation sector, policies like the Advanced Clean Trucks rule and a 100% zero-emission vehicle sales mandate, both adopted last year, have set the State up to leapfrog “low-carbon fuels” and directly eliminate not just carbon emissions but all tailpipe emissions. Moreover, there is strong agreement that reaching zero-emissions by 2050, as the Climate Law requires, will require the total “phase-out of internal combustion engine (ICE) vehicles” in favor of battery-electric and fuel-cell vehicles.²⁵

In the buildings sector, existing natural gas pipelines can only handle low hydrogen blends without safety risks.²⁶ Additionally, due to the different chemical properties of natural gas and hydrogen, hydrogen cannot be readily swapped for methane for use in heating or consumer appliances above a 5-20% blend with natural gas without enormous costs and disruption, and low blends achieve very few GHG emissions reductions while increasing emissions of nitrogen oxides.²⁷ Relying heavily on hydrogen to power appliances would require utilities to retrofit or replace most pipelines, a huge capital investment, whereas electrification is significantly less disruptive because equipment and appliance replacements can occur incrementally using existing electrical infrastructure.²⁸ Moreover, as the DSP recognizes, by 2050 the vast majority of building space statewide must be electrified with energy-efficient heat pumps in order to meet the Climate Act’s requirements.²⁹

Additionally, while a cap-and-invest scheme is distinct from cap-and-trade, experience with cap-and-trade programs suggests that a model that relies on allowances does not necessarily ensure direct emission reductions in communities that experience the highest levels of

²³ Jane O’Malley & Stephanie Searle, *Air Quality Impacts of Biodiesel in the United States* 19-20 (2021), <https://theicct.org/wp-content/uploads/2021/06/US-biodiesel-impacts-mar2021.pdf>.

²⁴ See Carrie Apfel & Matt Ellis-Ramirez, *Biofuels: Why Growing Food for Fuel is a Foolish Choice*, *Earthjustice* (Apr. 15, 2022), <https://earthjustice.org/from-the-experts/2022-april/biofuels-why-growing-food-for-fuel-is-a-foolish-choice>; See also Timothy D. Searchinger et al., *Assessing the Efficiency of Changes in Land Use for Mitigating Climate Change*, 564 *Nature* 249, 249 (2018); Matthew N. Hayek et al., *The Carbon Opportunity Cost of Animal-Sourced Food Production on Land*, 4 *Nature Sustainability* 21 (2021); Tyler J. Lark et al., *Cropland Expansion Outpaces Agricultural and Biofuel Policies in the United States*, 10 *Env’t Rsch. Letters* 044003 (2015); Tyler J. Lark et al., *Environmental Outcomes of the US Renewable Fuel Standard*, 119 *Proceedings of the Nat’l Acad. of Scis.* e2101084119 (2022).

²⁵ Nat’l Acad. of Scis., *Accelerating Decarbonization of the U.S. Energy System* 64 (2021).

²⁶ Sara Baldwin et al., *Assessing the Viability of Hydrogen Proposals: Considerations for State Utility Regulators and Policymakers* 7 (2022), <https://energyinnovation.org/wp-content/uploads/2022/03/Assessing-the-Viability-of-Hydrogen-Proposals.pdf>.

²⁷ *Id.* at 3.

²⁸ *Id.* at 10.

²⁹ DSP at 122.

pollution.³⁰ Lessons from California caution against this approach. For example, one study of California’s cap-and-trade system found that during the program’s first three years, “average co-pollutant emissions rose most in neighborhoods with higher concentrations of people of color, residents with low educational attainment and lower socioeconomic status, and in ‘disadvantaged communities.’”³¹ Additionally, California saw both vehicle miles traveled and transportation emissions increase after it incorporated transportation fuels into its cap-and-trade program,³² showing that the guarantee at the heart of a cap-and-trade system is the number of allowances only, not the amount of actual emissions. Indeed, a report issued by a state-appointed panel concluded that the number of allowances held in private and public accounts cast uncertainty over California’s ability to meet its emissions limit.³³ Additionally, although offsets would be very limited under the CLCPA, a system that depends on auctioning allowances still permits polluters to continue polluting for at least some time, and therefore fails to address the systematic nature of the status quo energy system that has led to disproportionate impacts on low-income communities and communities of color.

C. Carbon pricing must be designed and implemented to avoid regressive impacts.

It is critical that any carbon pricing scheme require polluters to pay and reduce regressive cost burdens on DACs and LMI New Yorkers. The FSP should recommend measures to reduce those burdens by returning revenue directly to consumers who need it and who are disproportionately impacted by rising energy costs. Potential mechanisms include feebates, rebates, incentives, and subsidies for early transition to electric vehicles, home heating, efficiency upgrades, and other clean energy and energy efficiency measures. Additionally, New York should begin making disbursements early—before revenue is raised if possible—to cushion overburdened households before cost impacts hit to avoid food insecurity, evictions, and other consequences of high energy burdens that can destabilize families and the State.

The CAC should also consider recommending measures to address the cost impacts on small businesses and the tax implications for municipalities, as well as potential challenges for energy-intensive industries that the State hopes to retain.

³⁰ See, e.g., Lara Cushing et al., *Carbon Trading, Co-Pollutants, and Environmental Equity: Evidence from California’s Cap-and-Trade Program (2011-2015)*, 15 Pub. Libr. Sci. Med. e1002604 (2018); see also generally Lara J. Cushing, et al., *A Preliminary Environmental Equity Assessment of California’s Cap-and-Trade Program* 5 (2016),

https://dornsife.usc.edu/assets/sites/242/docs/Climate_Equity_Brief_CA_Cap_and_Trade_Sept2016_FINAL2.pdf.

³¹ Manuel Pastor, et al., *Up in the Air: Revisiting Equity Dimensions of California’s Cap-and-Trade System* 5 (2022), https://dornsife.usc.edu/assets/sites/1411/docs/CAP_and_TRADE_Updated_2020_v02152022_FINAL.pdf.

³² CA. Air Res. Bd., *California Greenhouse Gas Emissions for 2000 to 2017: Trends of Emissions and Other Indicators* 7-8 (2018), https://ww3.arb.ca.gov/cc/inventory/pubs/reports/2000_2016/ghg_inventory_trends_00-16.pdf (showing transportation emission increases after 2015, when California incorporated transportation fuels into its cap-and-trade program); CA. Dep’t of Transp. (CALTRANS), *Historical Monthly Vehicle Miles of Travel 1972 - 2016*, <https://dot.ca.gov/-/media/dot-media/programs/traffic-operations/documents/f0017712-vmthist1.pdf> (showing vehicle miles traveled increased after 2015 as well).

³³ Dallas Burtraw, et al., *Indep. Emissions Mkt. Advisory Comm., 2021 Annual Report of the Independent Emissions Market Advisory Committee* 4 (2022), <https://calepa.ca.gov/wp-content/uploads/sites/6/2022/02/2021-IEMAC-Annual-Report.pdf>.

III. A Carbon Pricing Plan Must Include Pricing for Methane and Nitrous Oxide and Must Not Exempt the Agriculture, Forestry or Waste Sectors.

For a carbon pricing plan to effectively impact total GHG emissions, it must include pricing for non-CO₂ GHGs, in particular methane and nitrous oxide. These two GHGs account for 36% of New York’s GHG emissions and have global warming potentials 84 and 264 times greater than CO₂ on 20-year timescales, respectively.³⁴ Thus, a carbon pricing plan exclusively focused on CO₂ emissions would fail to address some of the most potent GHG emissions in the state.

Agriculture and waste account for 46% of New York’s methane emissions and 72% of the state’s nitrous oxide emissions.³⁵ These sectors must be included in emission pricing schemes to ensure such schemes represent an economy-wide strategy.

Although emissions of methane and nitrous oxide from agricultural activities are very different from carbon dioxide emissions from transportation, electricity, and other sectors and may be more challenging to measure, several feasible strategies exist to support pricing structures. These pricing schemes could be phased in over time to allow for producers to transition to more climate-friendly practices and adopt or install technologies that would significantly reduce their exposure to the fee.

Farmers routinely apply fertilizer at higher rates than crops require for a variety of reasons: as a form of insurance or risk avoidance, hope for a great year, over-focus on yield over return, habit, and misinformation.³⁶ Due to losses to the atmosphere, retention in soil, and runoff to waterways, only a proportion of the nitrogen applied to annual grains as fertilizer is removed at harvest.³⁷ In addition, in New York, application of manure from CAFOs in the winter or on saturated ground is allowed, even though plants will not take up any nutrients at those times. These practices result in large losses of nutrients, leading to nitrous oxide emissions among other negative consequences.

Improvements in fertilizer management are possible — and profitable — with accompanying reductions in nitrous oxide emissions. The FSP should include consideration of imposing a fertilizer fee that could directly encourage and fund assistance for farmers’ enhancing fertilizer use efficiency. For example, New York can apply a fertilizer fee upstream on the few fertilizer distributors in the state, similar to applying fees upstream for transportation carbon dioxide emissions. This fee structure should account for the fact that nitrous oxide emissions have a global warming potential 264 times that of carbon dioxide emissions, as well as

³⁴ See N.Y. State Dep’t of Env’t Conservation, *2021 Statewide Greenhouse Gas Emissions Report*, at iv Table ES.2, and at 5 Table 2 (2021), https://www.dec.ny.gov/docs/administration_pdf/ghgsumrpt21.pdf.

³⁵ *Id.*

³⁶ Farmers often apply excess fertilizer “in the hopes that ‘this year will be the one in ten’ when extra N will pay off.” G. Philip Robertson & Peter M. Vitousek, *Nitrogen in Agriculture: Balancing the Cost of an Essential Resource*, 34 Ann. Rev. Env’t & Res. 97, 117 (2009). As discussed in the Forestry and Agriculture Chapter, both incentives, such as a payment-for-ecosystem-services program that rewarded farmers using best management practices, and disincentives, such as a tax on fertilizer, could be used to reduce overfertilization.

³⁷ G. Philip Robertson, *Nitrogen Use Efficiency in Row-Crop Agriculture: Crop Nitrogen Use and Soil Nitrogen Loss*, in *Ecology in Agriculture* 351 (1997).

consideration of the fact that emissions are primarily associated with *excess* fertilizer use. This fee should be structured to apply only to excess fertilizer, such as applying over per-acre amounts that represent the plants' nutritional needs. More sophisticated fee schemes could provide a base rate with discounts for enhanced-efficiency fertilizers that emit less nitrous oxide. To assist in the transition, such a fee could be phased in with significant outreach and technical assistance beforehand to enable farmers to adopt precision and other improved fertilizer management regimes. And all revenue from the fee should be directed to farmer support.

Similarly, a pricing plan for methane is also feasible. Most agricultural methane emissions in New York are from enteric fermentation and wet manure management at CAFOs. Thus, a fee on animal feed purchases for ruminants at these facilities could place a cost on these emission sources. In contrast, dry manure management and pasture-based systems generate far less methane, and these types of operations may be exempted from such a pricing scheme.³⁸ This fee could also be reduced for feed that includes feed additives shown to reduce methane generation or for facilities that reduce manure methane emissions through improvements in manure management or cover and flare systems.

As described in further detail in our comments in response to the Waste Chapter of the DSP, a pricing plan would also be feasible to address methane emissions from the waste sector. For example, a per-ton surcharge on waste is a tried-and-true approach to creating a funding stream for waste reduction, reuse, and recycling infrastructure and programs while disincentivizing landfilling and incineration as waste management practices. Typically, these surcharges are added to per-ton tipping fees, and they can be charged to waste haulers or even at the generator-level so that businesses are taxed directly based on the waste they generate.

IV. Conclusion

In sum, Commenters support a pricing scheme with safeguards to ensure that the cost burden is not regressive and that the State provides targeted relief for LMI consumers and DACs. This approach will allow the State to generate sufficient revenue to meet the GHG reduction mandates while consistent with the Climate Law's equity requirements. Additionally, we urge the CAC to include in the FSP a recommendation to put a price on all GHGs, in addition to carbon dioxide.

Respectfully submitted,

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All Our Energy
Alliance for a Green Economy

Brookhaven Landfill Action and
Remediation Group
Catskill Mountainkeeper

³⁸ See Adam Kotin et al., CA Climate & Agric. Network, *Diversified Strategies for Reducing Methane Emissions from Dairy Operations* 9 (2015), <https://calclimateag.org/wp-content/uploads/2015/11/Diversified-Strategies-for-Methane-in-Dairies-Oct.-2015.pdf>; See also, Olga Gavrilova et al., *Emissions from Livestock and Manure Management*, in 2019 Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories 67 Table 10.17 (2019), https://www.ipcc-nggip.iges.or.jp/public/2019rf/pdf/4_Volume4/19R_V4_Ch10_Livestock.pdf.

Clean Air Coalition of WNY
Climate Reality Project, Capital Region NY
Chapter
Climate Reality Project, Finger Lakes
Greater Region NY Chapter
Climate Reality Project, Hudson Valley and
Catskills Chapter
Climate Reality Project, Long Island
Chapter
Climate Reality Project, NYC
Climate Reality Project, Westchester NY
Chapter
Climate Reality Project, Western New York
Chapter
Climate Solutions Accelerator of the
Genesee-Finger Lakes Region
Committee to Preserve the Finger Lakes
Community Food Advocates
CUNY Urban Food Policy Institute
Earthjustice
Environmental Advocates NY

Fossil Free Tompkins
Gas Free Seneca
Green Education and Legal Fund
HabitatMap
Hotshot Hotwires
Jobs to Move America
Long Island Progressive Coalition
Nassau Hiking & Outdoor Club
Network for a Sustainable Tomorrow
New Clinicians for Climate Action
North Brooklyn Neighbors
NY Renews
People of Albany United for Safe Energy
Roctricity
Seneca Lake Guardian
South Shore Audubon Society
Sustainable Finger Lakes
University Network for Human Rights
UPROSE
WE ACT for Environmental Justice



Gas System Transition

I. Introduction

Dismantling the gas system in an orderly, equitable, and expedient fashion is essential to meeting the Climate Law mandates. Commenters urge the CAC to recognize the need for the State to transition away from reliance on natural gas, electrify buildings, and invest in non-pipeline alternatives rather than spending ratepayer money on a gas system that will inevitably become stranded assets and obsolete.

II. Downsizing the Gas Distribution System

The DSP states that “achievement[s] of the [Climate Law] emissions limits will entail a downsizing of the fossil gas system.”¹ The FSP should clarify that the use of natural gas must decline to zero by 2050. As discussed below, combusting alternative fuels, such as RNG and hydrogen, is not a feasible or cost-effective solution and will not deliver the climate or public

¹ N.Y. Climate Action Council, *Draft Scoping Plan* (“DSP”) 264 (2021), <https://climate.ny.gov/-/media/Project/Climate/Files/Draft-Scoping-Plan.pdf>.

health benefits that New Yorkers need. Accordingly, the State’s planning efforts must work towards the target of dismantling the natural gas distribution system by 2050.

A. The use of natural gas must decline to zero by 2050.

Across all sectors, the Climate Act limits greenhouse gas emissions to 60% of 1990 levels by 2030 and 15% of 1990 emissions by 2050, with the goal of achieving net zero emissions by 2050.² The limited use of offsets that the Climate Act does permit must be constrained to sectors that cannot be electrified or in which GHG emissions cannot otherwise be zeroed out. Put differently, New York State cannot afford to continue emitting GHGs in sectors that can feasibly electrify, such as heating and cooking—the sectors currently served by the natural gas distribution system. Indeed, as the DSP recognizes, by 2050 the vast majority of building space statewide must be electrified with energy-efficient heat pumps in order to meet the Climate Act’s requirements.³

B. Reducing load demand is essential.

Attaining this goal will require not only scaling up alternatives to natural gas, but also reducing demand for the energy sources currently provided by natural gas. For this reason, Commenters support the proposal to expeditiously ramp up load reduction measures such as demand response and energy efficiency and submit that such measures must be further evaluated and explored. Additionally, pursuant to Section 7(3) of the Climate Act and the CJWG’s interpretation thereof, at least 35% of investments in load reduction measures must be located in DACs.

New York has extensive large building loads, which represent high potential to tap a flexible resource. In a Summer 2020 effort, New York City’s Department of Citywide Administrative Services used a demand response program that produced 103 megawatts of load reductions.⁴ And as a further indicator of promising and extensive potential, as part of a 2020 Demand Response Forum presentation on unrealized commercial demand response, Con Edison reported that the “[m]ajority of customers enroll less than 20% of their highest summertime kW demand.”⁵

A recent analysis focused on load curtailment, prepared for NYSERDA by Elementa Engineering in collaboration with UPROSE and NYC-EJA (“Replacing Peaker Plants: DER Strategies for Sunset Park, Gowanus, and Bay Ridge”), showed significant reduction in peak

² ECL §§ 75-0107(1), 75-0109(4)(a)–(b), (f).

³ DSP at 122.

⁴ See *Demand Response Program*, N.Y.C. Dep’t Citywide Admin. Serv., <https://www1.nyc.gov/site/dcas/agencies/demand-response.page> (last visited June 17, 2022).

⁵ ConEdison, *2020 Demand Response Forum* 11 (2020), <https://www.coned.com/-/media/files/coned/documents/save-energy-money/rebates-incentives-tax-credits/smart-usage-rewards/demand-response-forum.pdf>.

demand for the study areas of Sunset Park, Gowanus, and Bay Ridge⁶ The office and industrial sectors demonstrated particularly high opportunities for load reduction.⁷ The analysis also noted the additional potential of energy efficiency retrofits, indicating that when buildings performed in compliance with modern energy codes, “which could be achieved through envelope and system upgrades,” peak demand dropped by 11%.⁸ Relatedly, NYSERDA has been advancing efficiency upgrades to reduce demand. For example, Business Energy Pro⁹ is just one new pay-for-performance pilot “collaboration among NYSERDA, Con Edison, and energy efficiency service providers that aimed to transform the energy efficiency market by using smart meter technology.”¹⁰ The State should continue to seize load reduction opportunities through similar programs.

C. Hydrogen and renewable natural gas are not viable replacements for natural gas in buildings.

Commenters oppose maintaining the existing distribution system for alternative fuel sources, which do not represent a feasible or cost-effective alternative to widespread electrification of buildings. Commenters are concerned about reliance on “low-carbon fuels” such as renewable natural gas (“RNG”), biofuels, and hydrogen. Production and use of these fuels results in significant greenhouse gas emissions and other environmental impacts.¹¹

Because RNG is chemically identical to natural gas,¹² its combustion emits the same level of GHGs.¹³ A recent study suggests that combustion exhaust from biomethane (RNG used for heating and cooking) is even more toxic than exhaust from fossil gas.¹⁴ Additionally, the available and climate- or environmentally beneficial supply of RNG is very small. The supply of true, capturable waste methane (e.g., from uncontrolled landfills and wastewater treatment

⁶ Elementa Eng’g, *Replacing Peaker Plants: DER Strategies for Sunset Park, Gowanus, and Bay Ridge* (2021), https://earthjustice.org/sites/default/files/files/peak_coalition_comments_astoriagasplant_sept132021.pdf.

⁷ *Id.* at 20.

⁸ *Id.* at 21.

⁹ See *Business Energy Pro*, NYSERDA, <https://www.nyserd.ny.gov/All-Programs/Programs/Business-Energy-Pro> (last visited Mar. 29, 2022).

¹⁰ *Id.*

¹¹ Sasan Saadat & Sara Gersen, Earthjustice, *Reclaiming Hydrogen for a Renewable Future: Distinguishing Oil & Gas Industry Spin from Zero-Emission Solutions* 10-11 (2021), https://earthjustice.org/sites/default/files/files/hydrogen_earthjustice.pdf.

¹² *Alternative Fuels Data Center: Natural Gas Fuel Basics*, U.S. Dep’t of Energy, https://afdc.energy.gov/fuels/natural_gas_basics.html#:~:text=RNG%20qualifies%20as%20an%20advanced,liquefied%20for%20use%20in%20vehicles (last visited Apr. 27, 2022).

¹³ As discussed in comments on the Electricity Chapter, NRG, the developer behind a recent NY gas plant proposal acknowledged as much in their Draft Supplemental Environmental Impact Statement: “RNG does not result in zero onsite GHG emissions. As RNG is methane and fully interchangeable with conventional natural gas, onsite GHG emissions would remain the same whether the Project is operating on RNG or conventional natural gas.” AECOM, *Draft Supplemental Environmental Impact Statement: Astoria Replacement Project* 3-51 (2021), https://www.nrg.com/assets/documents/legal/astoria/00_2021/astoria-draft-dseis-06-30-2021.pdf.

¹⁴ See Michael J. Kleeman et al., Cal. Energy Comm’n, Publ’n No. CEC-500-2020-034, *Air Quality Implications of Using Biogas to Replace Natural Gas in California* (2020), <https://www.energy.ca.gov/sites/default/files/2021-05/CEC-500-2020-034.pdf>.

plants) amounts to less than 1% of current gas demand.¹⁵ Due to high production costs, RNG is also 4-17 times more expensive than fossil gas.¹⁶ Production of RNG also results in harmful local environmental impacts and can increase net GHGs.¹⁷ For these reasons, RNG is not a viable alternative to fossil gas.

Hydrogen combustion creates significant emissions of nitrogen dioxide, an irritant that causes asthma and other respiratory conditions, and a precursor to both ground-level ozone and fine particulate matter.¹⁸ These pollutants adversely impact local air quality and can cause serious health problems, and disproportionately affect communities of color.¹⁹ In fact, hydrogen blends emit even higher levels of nitrogen oxides than natural gas when combusted.²⁰ Additionally, a growing body of research indicates that blending hydrogen with natural gas for use in buildings is highly inefficient and does little to reduce GHG emissions.²¹ Moreover, using hydrogen in buildings creates major challenges and safety risks throughout the existing natural gas infrastructure system because of the difference in chemical properties between hydrogen and methane.²² Natural gas pipelines can only handle low hydrogen blends before creating safety risks.²³ Relying heavily on hydrogen to power appliances would therefore require utilities to retrofit or replace most pipelines, a huge capital investment, whereas electrification is

¹⁵ Sasan Saadat et al., *Rhetoric vs. Reality: The Myth of “Renewable Natural Gas” for Building Decarbonization* 9 (2020), https://earthjustice.org/sites/default/files/feature/2020/report-decarb/Report_Building-Decarbonization-2020.pdf.

¹⁶ *Id.* at 2.

¹⁷ See generally Sadaat & Gersen, *supra* note 10; Saadat, et al., *supra* note 14.

¹⁸ See, e.g., Integrated Science Assessment for Oxides of Nitrogen -- Health Criteria 81 Fed. Reg. 4910-02 (Jan. 28, 2016); Jeffrey Goldmeer et al., Gen. Elec., *Hydrogen as a Fuel for Gas Turbines: A Pathway to Lower CO₂* 5 (2021), https://www.ge.com/content/dam/gepower-new/global/en_US/downloads/gas-new-site/future-of-energy/hydrogen-fuel-for-gas-turbines-gea34979.pdf (finding that a 50/50 mixture of hydrogen and fossil gas (by volume) increased concentrations of NO_x in gas exhaust by 35% using General Electric combustion turbines); Mirko Bothien et al., ETN Global, *Hydrogen Gas Turbines: The Path Towards a Zero-Carbon Gas Turbine* 9 (2020), <https://etn.global/wp-content/uploads/2020/01/ETN-Hydrogen-Gas-Turbines-report.pdf> (warning that higher flame temperatures for hydrogen-gas blends will produce more health-harming NO_x emissions “if no additional measures are undertaken”); Mehmet Salih Celtek & Ali Pinarbasi, *Investigations on Performance and Emission Characteristics of an Industrial Low Swirl Burner While Burning Natural Gas, Methane, Hydrogen-Enriched Natural Gas and Hydrogen as Fuels*, 43 Int’l J. of Hydrogen Energy 1194, 1205 (2018) (finding that hydrogen combustion can emit more than six times as much NO_x as does methane combustion).

¹⁹ NO_x is a pollutant that damages heart and respiratory function, impairs lung growth in children, and leads to higher rates of emergency room visits and premature death. Further, the State’s Department of Health has identified the reduction of air pollution, including ozone, as a key indicator to drive improvements in asthma rates and public health outcomes throughout the state. The New York State Prevention Agenda 2019-2024 notes the “extensive evidence” linking ozone with respiratory and cardiovascular illness and death and establishes a goal to “reduce exposure to outdoor air pollutants,” with an emphasis on vulnerable groups. See N.Y. State Dep’t of Health, *New York’s State Health Improvement Plan: Prevention Agenda 2019-2024*, at 72–3 (updated Sept. 2, 2021), https://www.health.ny.gov/prevention/prevention_agenda/2019-2024/docs/ship/nys_pa.pdf; see also *Nitrogen Dioxide & Health*, Cal. Air Res. Bd., <https://ww2.arb.ca.gov/resources/nitrogen-dioxide-and-health> (last visited Feb. 3, 2022); see also Christopher W. Tessum et al., *PM_{2.5} Polluters Disproportionately and Systemically Affect People of Color in the United States*, 7 Sci. Advances eabf4491 (2021).

²⁰ Sara Baldwin et al., *Assessing the Viability of Hydrogen Proposals: Considerations for State Utility Regulators and Policymakers* 3 (2022).

²¹ *Id.* at 2.

²² *Id.*

²³ *Id.* at 7.

significantly less disruptive because equipment and appliance replacements can occur incrementally using existing electrical infrastructure.²⁴

In some particular situations, it may be appropriate to employ limited use of “green” hydrogen for sectors that truly cannot be electrified. Green hydrogen is produced by electrolysis of water using renewable electricity. While the use and production of green hydrogen does not emit GHGs, diversion of renewable energy to produce hydrogen rather than powering electric vehicles and building appliances would increase consumer costs and slow economy-wide decarbonization.²⁵ Producing hydrogen is also water-intensive, and at a large scale could lead to water stress. The use of green hydrogen should therefore be treated as a last resort and limited to only those sectors that cannot be electrified, such as marine shipping and aviation. However, as discussed, natural gas pipelines can only handle low hydrogen blends before imposing safety risks and are therefore not appropriate for transporting 100% green hydrogen.²⁶

As such, maintaining a gas system for a small sector, which cannot electrify, will likely be costly. Further analysis must be completed to determine who will cover the costs associated with future investments, safety, and maintenance of a gas system that would be purely operational for the hard to electrify sectors. Existing gas infrastructure is vulnerable to climate extremes such as sea level rise and storm surges and must be included in the above-mentioned analysis.²⁷

III. Restructuring the Gas Planning Docket

The Gas Planning docket should be restructured to advance building electrification. The Public Service Commission (“PSC”) should also revisit its benefit-cost analysis framework order.

A. The gas planning docket must advance building electrification.

As discussed, combustion of RNG and hydrogen are false solutions, and electrification is the only sensible pathway to building decarbonization. While Commenters are glad that the PSC’s May 12 Gas Planning Order begins the process of creating a framework for non-pipeline alternatives (“NPA”), the Order also specifies that “[t]he final recommendations from the CAC will guide how RNG will be part of the [local distribution companies’] supply portfolio.”²⁸ It is therefore essential that the FSP clarify that decarbonization must occur through electrification and reject any plans to rely on RNG.

²⁴ *Id.* at 10.

²⁵ Baldwin, et al., *supra* note 20, at 12.

²⁶ Baldwin, et al., *supra* note 20, at 7.

²⁷ See, e.g., Con Edison, *Climate Vulnerability Study* 1, 32 (2019), <https://www.coned.com/-/media/files/coned/documents/our-energy-future/our-energy-projects/climate-change-resiliency-plan/climate-change-vulnerability-study.pdf>.

²⁸ N.Y. State Dep’t of Pub. Serv., Case No. 20-G-0131, *Proceeding on Motion of the Commission in Regard to Gas Planning Procedures, Order Adopting Gas System Planning Process*, at 34 (issued May 12, 2022).

The CAC should also urge the PSC, in developing the NPA framework, to consider changes to the utility revenue model including shifting the balance from earnings based on capital investments to performance-based incentives. The current incentive structure pushes utilities to invest in pipelines and other gas infrastructure projects that are costly for ratepayers, the climate, and public health: incentives should instead be in place to drive electrification.

Additionally, the PSC's Gas Planning Order does not require utilities to reflect known building electrification requirements and policies in their long-term plans, even though the State's largest city requires new buildings to be all-electric starting in 2024, and the State is considering similar legislation.²⁹ The CAC should urge the PSC to reconsider this decision to ensure that the PSC's management of the gas system ushers in, rather than impedes, the required transition to electric buildings.

B. The PSC should revisit the BCA framework order.

The State must develop a robust benefit-cost analysis ("BCA") to evaluate the gas transition and decarbonization that considers the true cost to ratepayers of maintaining the current gas system, taking into account the amortization and socialization of the costs of repairing and replacing leak-prone pipes ("LPPs"); that accounts for the relative efficiency of heat pumps and other electric appliances; and that accounts for the public health benefits of electrification.

In the Gas Planning Order, the PSC rejected a number of suggestions as inconsistent with the BCA Framework Order. For example, the PSC rejected a recommendation that utilities' annual reports should include all-in costs for design day and per estimated use to allow for a truer accounting of the different supply and demand options.³⁰ Similarly, the PSC also rejected calls to revise its BCA framework to consider not only economic and environmental concerns associated with new infrastructure investments, but also the health and equity impacts to realize the true cost effectiveness of NPAs.³¹

However, the PSC's refusal to revisit the BCA Framework Order in order to incorporate these recommendations will obscure the true benefits of electrification and true costs of maintaining the gas existing system. Fealty to the BCA Framework Order therefore threatens the PSC's ability to usher in the transition required to comply with CLCPA mandates. Moreover, a failure to dismantle the gas system in an orderly fashion risks leaving a small group of LMI customers paying for stranded assets.

Additionally, the PSC's Gas Planning Order recognizes the need to comply with Section 7(3) and avers that the PSC will have "the necessary information to assess the potential impacts of [utilities'] long-term plans and alternatives, both benefits and burdens, on disadvantaged communities."³² However, without a BCA framework that can capture the health benefits and

²⁹ *Id.* at 31-32; Local Law No. 154 (2021) of City of NY; *All-Electric Buildings Act*, 2022 NY Senate Bill S6843(C).

³⁰ N.Y. State Dep't of Pub. Serv., Case No. 20-G-0131, *Proceeding on Motion of the Commission in Regard to Gas Planning Procedures, Order Adopting Gas System Planning Process 22* (issued May 12, 2022).

³¹ *Id.* at 44.

³² *Id.* at 57.

threats associated with different energy sources, the PSC cannot adequately fulfill this mandate. For these reasons, the FSP should call on the PSC to revisit the BCA order.

C. The State must deny permits for new natural gas infrastructure projects.

The DSP states, “[t]o the extent consistent with reliability and safety, the State should deny as inconsistent with the Climate Act additional gas infrastructure permits.” The FSP should clarify that under Section 7(2) of the Climate Act, the State is required to deny permits for new gas infrastructure except where justified by a reliability need and then, require mitigation measures.

Section 7(2) vests State agencies with the authority to deny permit applications where a project would be inconsistent with or interfere with the Climate Act’s greenhouse gas limits, and where 1) no justification exists *or* 2) a justification exists but neither alternatives nor adequate mitigation measures can be identified. Section 7(2) requires in relevant part that in “considering and issuing” all permits, licenses and other administrative approvals, agencies “*shall consider* whether such decisions are inconsistent with or will interfere with the attainment of the statewide greenhouse gas emissions limits established in article 75 of the environmental conservation law.”³³

Section 7(2)’s use of the word “shall” makes plain that, before permitting a project that would be inconsistent with or would interfere with the Climate Act’s greenhouse gas reduction mandates, a state agency is required to provide a justification *and* identify alternatives or mitigation measures. *See McMillian v. Krygier*, 153 N.Y.S.3d 198, 201 (App. Div. 2021) (“[U]se of the word ‘shall’ generally denotes a mandatory requirement.”) (quoting *Haynie v. Mahoney*, 48 N.Y.2d 718, 719 (1979)). Put differently, Section 7(2) sets forth a three-part process: 1) consider whether the project would be inconsistent with or interfere with the Climate Act’s emissions limits; 2) if so, determine whether a sufficient justification exists; 3) if so, identify alternatives or mitigation measures. If no justification exists—or if a justification exists but the State cannot identify alternatives or mitigation measures—then no permit can be issued. Reading the provision any other way would produce the absurd result of requiring the State to permit projects that are inconsistent with State law, and to manufacture justifications for them. *See Lubonty v. U.S. Bank Nat’l Ass’n*, 116 N.Y.S.3d 642, 645 (2019) (The State must “interpret [the] statute so as to avoid [this] unreasonable [and] absurd application of the law.” (citation omitted)).

Additionally, as DEC recognized in proposing guidance on Section 7(2), it is not only important that new facilities not *add* GHG emissions; new facilities also must not make it more challenging to decrease GHG emissions or interfere with attainment of a zero-emission electric generation sector by 2040.³⁴ Moreover, projects that facilitate the expanded or continued use of fossil fuels are inconsistent with the Climate Act.³⁵ New infrastructure projects that expand or

³³ CLCPA § 7(2) (emphasis added).

³⁴ DEC, *DAR-21 The Climate Leadership and Community Protection Act and Air Permit Applications* 5 (Dec. 1, 2021), https://www.dec.ny.gov/docs/air_pdf/dar21.pdf.

³⁵ *Id.*

prolong the use of natural gas are therefore inconsistent with the Climate Act, and may only be permitted if justified due to a reliability need and if the State imposes mitigation measures.

IV. Legislative Amendments

Commenters agree with the DSP that the State should amend the Public Service Law and the Transportation Corporations Law because public policy should not promote natural gas. As the DSP recognizes, current law erects barriers to transitioning off the gas system. The final Scoping Plan should recommend that the legislature adopt the Gas Transition and Affordable Energy Act. The bill will end costly ratepayer-subsidized natural gas expansion while ensuring the equitable provision of electric service and efficient heating, cooling, cooking, and hot water services. Similarly, Commenters agree that incentives and rebates for gas equipment offered by utilities or NYSERDA must be immediately ended. The State cannot with one hand impose greenhouse gas limits while with the other encouraging the use of natural gas; Commenters urge the CAC to include this recommendation in the FSP.

V. Conclusion

In summary, the FSP should:

- Recognize the need to reduce gas usage to zero by 2050 and to dismantle the gas distribution system.
- Reject combustion of alternative fuels including hydrogen and RNG.
- Call for load reductions through efficiency measures.
- Call for restructuring the gas planning docket to advance electrification.
- Call for legislative enactments to achieve the CLCPA mandates.

Respectfully submitted,

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Chapter
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Greater Region NY Chapter
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Catskills Chapter
Climate Reality Project, Long Island
Chapter
Climate Reality Project, NYC

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Environmental Advocates NY
Fossil Free Tompkins
Gas Free Seneca
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Hotshot Hotwires

Long Island Progressive Coalition
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Energy Intensive and Trade Exposed Industry - Cryptocurrency

I. Introduction

The climate and energy impacts of proof-of-work cryptocurrency mining, such as for Bitcoin, in New York and throughout the United States are staggering and increasing every day.¹ Following China's ban on proof-of-work mining in September 2021, the U.S. is now the largest proof-of-work mining location in the world, accounting for more than one-third of the global market.² New York is home to approximately 20% of the country's proof-of-work cryptocurrency mining operations.³

¹ Renee Cho, *Bitcoin's Impacts on Climate and the Environment*, Columbia Climate School (Sept. 20, 2021), <https://news.climate.columbia.edu/2021/09/20/bitcoins-impacts-on-climate-and-the-environment/>.

² See, e.g., BBC, *US Leads Bitcoin Mining as China Ban Takes Effect* (Oct. 13, 2021), <https://www.bbc.com/news/technology-58896545>; see also Letter from Senator Elizabeth Warren et al. to Cryptominers (Jan. 27, 2022) (explaining that the United States' share of global Bitcoin mining increased from 4% in August 2019 to 35% in July 2021).

³ MacKenzie Sigalos, *New York and Texas are Winning the War to Attract Bitcoin Miners*, CNBC (Oct. 9, 2021), https://www.cnbc.com/2021/10/09/war-to-attract-bitcoin-miners-pits-texas-against-new-york-kentucky.html?utm_term=Autofeed&utm_medium=Social&utm_content=Main&utm_source=Twitter#Echobox=1633780959.

The dramatic increase in fossil fuel-generated electricity consumption caused by proof-of-work cryptocurrency mining operations directly interferes with New York State’s ability to reach the greenhouse gas emission reductions and renewable energy mandates established in the Climate Leadership and Community Protection Act (“CLCPA”). New York’s proof-of-work cryptocurrency mining operations threaten local health, local ecosystems, local economies,⁴ and divert renewable energy away from areas where it is truly needed—all issues that the New York State Energy Research and Development Authority (“NYSERDA”), New York Public Service Commission (“PSC”), New York State Department of Environmental Conservation (“DEC”), New York Department of Public Service (“DPS”), and the New York Independent System Operator (“NYISO”) have been working so hard to decarbonize despite fierce fossil-fuel industry opposition.⁵ Proof-of-work mining will very likely prevent the State from meeting the statutory mandates of the CLCPA, as described further below.

An increased use of fossil fueled electricity has terrible consequences for climate, air and water pollution, and is unconscionable during a climate crisis, especially when the Co-Chair of IPCC Working Group III C recently warned that, “[i]t’s now or never, if we want to limit global warming to 1.5°C (2.7°F); without immediate and deep emissions reductions across all sectors, it will be impossible.”⁶

II. Proof-of-work Cryptocurrency Mining Threatens New York’s Climate Goals and Its Grid

The CLCPA’s short timeline to achieve 70% renewable energy by 2030 and 100% zero-emissions electricity by 2040, along with a reduction in greenhouse gas (“GHG”) emissions by 40% by 2030 and by 85% by 2050 necessitates aggressive GHG emissions reductions, and proof-of-work cryptocurrency mining’s insatiable energy appetite makes it more difficult to meet those requirements.⁷ In fact, DEC affirmed that New York cannot afford to maintain fossil fuel use by stating, “[t]he continued long-term use of fossil fuels to produce electricity . . . is inconsistent with the State’s statutory requirement[s].”⁸ To reduce GHG emissions 85% by 2050, with an interim requirement of 40% by 2030,⁹ we must rapidly scale up a renewable-powered

⁴ See Marissa Solomon, *Gillibrand Commits LIVE ON AIR to Visit FLX & Meet w/Residents on Climate Killing Cryptomining @ Greenidge*, Seneca Lake Guardian (Apr. 27, 2022) (e.g., pointing to the \$3 billion agritourism economy, employing approximately 60,000 people in the Finger Lakes), <http://readme.readmedia.com/Gillibrand-Commits-LIVE-ON-AIR-to-Visit-FLX-Meet-w-Residents-on-Climate-Killing-Cryptomining-Greenidge/18521058>.

⁵ See, e.g., *Tier 4 – New York City Renewable Energy*, NYSEDA, <https://www.nyserda.ny.gov/All-Programs/Programs/Clean-Energy-Standard/Renewable-Generators-and-Developers/Tier-Four> (last visited May 14, 2021); see also NYISO, *Power Trends 2021: New York’s Clean Energy Grid of the Future, Tale of Two Grids*, at slide 6 (2021), <https://www.nyiso.com/documents/20142/21201742/PT-2021-Tale-of-Two-Grids.png/6fbedc32-4316-f11b-3f76-74742258d456?t=1619805707764>.

⁶ Africa Renewal, *UN Climate Report: It’s ‘Now or Never’ to Limit Global Warming to 1.5 Degrees*, UN News (Apr. 4, 2022), <https://www.un.org/africarenewal/magazine/april-2022/un-climate-report-it%E2%80%99s-%E2%80%98now-or-never%E2%80%99-limit-global-warming-1-5-degrees>.

⁷ See Irene Weiser, Tompkins League of Women Voters, *Bitcoin, Cryptocurrency, Blockchain: The Promise and the Peril*, YouTube (Jan. 13, 2022), <https://www.youtube.com/watch?v=qLuMqn2ISA4>.

⁸ Letter from Daniel Whitehead, Dir. Div. of Env’t Permits, DEC, to Andrew Scano, Astoria Gas Turbine Power, *Re: Notice of Denial of Title V Air Permit 11* (Oct. 27, 2021), https://www.dec.ny.gov/docs/permits_ej_operations_pdf/nrgastoriadecision102721.pdf (“Astoria Title V Permit Denial”).

⁹ ECL § 75-0107(1).

electrified economy. As the cryptocurrency market continues to grow, the associated increased demand in energy consumption to operate proof-of-work cryptocurrency mining threatens to make the clean energy transition and the likelihood of meeting federal and state-level climate and energy goals much more difficult, if not impossible.

Furthermore, our grid needs to rapidly decarbonize in order to meet CLCPA mandates and to prevent the worst of climate impacts on New Yorkers. Building electrification and transportation electrification will increase the amounts of load coming on to the grid. There is not enough clean energy in New York State (or nearby) to meet all that demand, plus the new load for proof-of-work cryptocurrency mining.

A. Proof-of-work cryptocurrency mining uses an enormous amount of energy, including fossil fuels.

Proof-of-work cryptocurrency mining consumes massive amounts of electricity.¹⁰ Bitcoin's global electricity consumption alone increased more than threefold between the beginning of 2019 and May 2021.¹¹ Estimates of global energy use are approximately 152 terawatt hour ("TWh").¹² In fact, in the past five years, proof-of-work's energy use across the United States has risen 320%.¹³ Due to this enormous amount of energy usage, Bitcoin's annual global emissions have been estimated by some to be between roughly 60 to 100 million tons of carbon dioxide ("CO₂"), though this is most likely an underestimate given the exponential growth of mining in recent years.¹⁴ Further, a recent congressional memo estimates that the annual emissions from Bitcoin and Ethereum are equal to roughly 15.5 million car tailpipes.¹⁵ Although it is difficult to forecast emissions in coming years given the rapid growth of proof-of-work cryptocurrency mining in the United States after China's ban in September 2021, academics estimate that "cryptocurrency's energy usage will rise another 30% by the end of the decade—producing an additional 32.5 million metric tons of carbon dioxide a year."¹⁶

¹⁰ Jon Huang et al., *Bitcoin Uses More Electricity Than Many Countries. How is that Possible?*, N.Y. Times (Sept. 3, 2021), <https://www.nytimes.com/interactive/2021/09/03/climate/bitcoin-carbon-footprint-electricity.html>.

¹¹ *Id.*

¹² Bitcoin's network power demand is estimated to be in the range of 57.13 TWh to 343.75 TWh annually. See *Cambridge Bitcoin Electricity Consumption Index*, Univ. of Cambridge, <https://ccaf.io/cbeci/index> (last visited May 3, 2022).

¹³ See, e.g., Yvonne Taylor, *Bitcoin Mining is a Threat to New York's Climate. Here's Why* | Opinion, Lohud (Jan. 14, 2022), <https://www.lohud.com/story/opinion/2022/01/14/bitcoin-mining-threat-new-yorks-climate-heres-why/6519094001/>; Zach Budryk, *Democrats Press Cryptomining Companies on Energy Consumption*, The Hill (Jan. 27, 2022), <https://thehill.com/policy/energy-environment/591714-eight-congressional-democrats-press-cryptomining-companies-on>.

¹⁴ *Bitcoin Energy Consumption Index*, Digiconomist, <https://digiconomist.net/bitcoin-energy-consumption> (last visited June 15, 2022) (estimating Bitcoin's annual carbon footprint at 84.69 million metric tons of CO₂, comparable to the carbon footprint of Bangladesh); see also Forex Suggest, *Global Impact of Crypto Trading*, <https://forexsuggest.com/global-impact-of-crypto-trading/> (last visited Jan. 21, 2022) (estimating that Bitcoin emits ~57 million metric tons of CO₂ annually).

¹⁵ Memorandum from Comm. on Energy & Commerce Staff to the Subcomm. on Oversight & Investigations, *Re: Hearing on "Cleaning Up Cryptocurrency: The Energy Impacts of Blockchain"* (Jan. 17, 2022), https://energycommerce.house.gov/sites/democrats.energycommerce.house.gov/files/documents/Briefing%20Memo%20OI%20Hearing_2022.01.20.pdf.

¹⁶ Lois Parshley, *How Bitcoin Mining Devastated This New York Town*, MIT Tech. Rev. (Apr. 18, 2022), <https://www.technologyreview.com/2022/04/18/1049331/bitcoin-cryptocurrency-cryptomining-new-york/>.

B. Proof-of-work mining places a large new load on the New York State electric grid.

At a recent legislative budget hearing, when asked about the potential impact of the escalating cryptocurrency mining activity in upstate NY on the state’s energy grid, NYSERDA President Doreen Harris stated, “[t]here could be a very significant impact on NY load resulting from cryptocurrency mining depending on the penetration of the resource.”¹⁷

To our knowledge, there is no registry of proof-of-work mining facilities in New York State or anywhere in the United States. Data on mining facilities in New York State in Table 1 below, are derived from various news stories, press releases, videos, town board minutes, etc.¹⁸ Based on the information we could locate, there are currently thirteen proof-of-work mining facilities imposing at least a 576-megawatt (“MW”) load in New York State. Data on the number of specialized computers, (aka mining rigs or ASICs—Application Specific Integrated Circuits) used at a given site was even harder to come by, but we were able to approximate at least 88,000 mining rigs in New York State, (*see Table 1 below*). If these mining operations expand to the extent their literature suggests, by the fourth quarter of 2022, there could be up to 1,626 MW of proof-of-work mining operations in New York State.

¹⁷ Seneca Lake Guardian, *Gov Hochul + DEC Punt Decision on Greenidge Generation Air Permits Again* (Mar. 31, 2022), <https://www.senecalakeguardian.org/index.php?tray=content&tid=1SLGtop4&cid=1SLG141>.

¹⁸ Provided by Fossil Free Tompkins.

Table 1: Known Proof-of-work Mining Facilities Currently Operating in New York State

Mining Facility	MW	Electric Source	# Machines	Status
Coinmint NCDC Massena, Old Alcoa W	250 --> 435	NYPA, hydro	46,000 → 81,000	Operating @ 250; 185 request pending NYISO review
Greenidge LLC Coal → Gas power plant Seneca Lake, Dresden	25 – >100	Onsite Gas Generation Carbon offsets, 2MW solar proposed	17,300 →31,700	Operating @ 25MW, propose increase to 100MW. Already 10x increase GHG emissions. DEC air permit renewal pending 3/31/22
Fortistar (Digihost) Operating gas peaker plant N. Tonawanda	35 --> 55	Gas	9400	Proposal to convert pending PSC decision. DEC air permit renewal soon. Convert to RNG or Hydrogen? 14 containers @700 rigs each
Somerset, Lake Mariner Retired coal plant, Barker	0 - 250 --> 500	Hydro, grid mix		NYPA approved 90 MW hydro. Town approved; construction underway.
Cayuga, TeraWulf Retired coal plant Cayuga Lake, Lansing	0 --> 100	Hydro, grid mix		NYPA approved 2.5 MW hydro. Possible 100-200 MW solar? No active proposal w Town.
Wattum Niagara Falls area	5 → 50	Hydro Grid mix		Operating 5MW now. Expand to 50MW in 2022.
Weitsman Owego	8 --> 115	Grid mix	2500 ->35,000	Operating 8 MW now. 100 more pending. Interconnection app?
Massena Containers	2 → 20	Hydro Grid mix		Multiple. Town issued moratorium
Mechanicsville	4	Hydro		Operating.
US Bitcoin Niagara Falls	45	Hydro Grid mix	12,600	Operating. 18 containers@ old DuPont site in Niagara Falls x 700 rigs per container
Bit Digital / Blockfusion Niagara Falls	150	Hydro Grid mix		GM coal plant along Niagara River
Plattsburgh NCDC	10	Hydro Grid mix		
Digihost American Axle Buffalo	42	Hydro Grid Mix		
TOTAL	576 MW now 1336 – 1626 MW by Q4 2022		87,800 known	

To put the above cryptocurrency mining load in perspective, consider the following: For the year 2020, NYISO reports that the State used 150,198 gigawatt hours (“GWh”) electricity.¹⁹ Thus, the 576 MW (5,046 GWh) load we have identified for active, known instances of proof-of-work mining is 3.35% of NYS’s 2020 energy use. If the proof-of-work mining expansion to 1,626 MW (14,244 GWh) by Q4 2022 occurs—this would be a whopping 9.5% of NYS’s 2020 energy use.²⁰

C. Proof-of-work cryptocurrency mining operations will make it harder to achieve New York State renewable energy commitments.

Adding demand from proof-of-work cryptocurrency mining to the New York grid could increase capacity problems, especially downstate.²¹ In order to simultaneously meet CLCPA renewable energy mandates while also rapidly electrifying the building and transportation sectors, the NYISO projects the need to install 15,000 MW new solar and 8,700 MW land-based wind by 2030.²² To accomplish this task in the next eight years is daunting. In addition, new transmission lines will need to be installed to convey this energy from where the land is upstate to where the load is downstate.

Clearly allowing underutilized fossil fuel power plants to engage in proof-of-work mining of digital assets 24/7/365 would take the State (and the country) in the wrong direction relative to meeting renewable energy and greenhouse gas reduction goals.

To satisfy the voracious appetite of proof-of-work mining for electricity with renewable energy sources while also meeting the State’s ambitious renewable energy goals is likely not feasible. A likely result is that fossil-fueled power plants will need to continue operation in order to satisfy the added grid load from proof-of-work mining activities.

By way of example, 100 MW energy drawn from the grid is not the same as installing 100 MW renewable resources. In New York State, solar has a capacity factor of approximately 14%,²³ meaning that one would need to install 714 MW solar to generate the equivalent of 100 MW grid power. Similarly, the capacity factor for wind in New York State at present is approximately 29%,²⁴ meaning that one would need to install $100/0.29 = 345$ MW wind to produce 100 MW grid power. Applying these capacity factors to the current 576 MW proof-of-work cryptocurrency mining in New York State would require adding an additional 4,144 MW (27%) of solar energy to the 15,000 MW needed by 2030 as NYISO indicated, and a colossal

¹⁹ NYISO, *Delivering the Grid of the Future: How Markets Support Climate & Policy Goals*, at slide 10, <https://www.nyiso.com/documents/20142/2225523/How-Markets-Support-Climate-and-Policy-Goals.pdf> (last visited June 15, 2022).

²⁰ Provided by Fossil Free Tompkins.

²¹ See Severin Borenstein, *Crypto Mining for a More Stable Grid?*, Energy Inst. at HAAS (Mar. 21, 2022), <https://energyathaas.wordpress.com/2022/03/21/crypto-mining-for-a-more-stable-grid/>.

²² NYISO, *2019 Caris Report: Congestion Assessment and Resource Integration Study* 5–6 (2020), <https://www.nyiso.com/documents/20142/2226108/2019-CARIS-Phase1-Report-Final.pdf/bcf0ab1a-eac2-0cc3-a2d6-6f374309e961>.

²³ NYISO, *Power Trends 2020: The Vision for a Greener Grid* 18 (2020), <https://www.nyiso.com/documents/20142/2223020/2020-Power-Trends-Report.pdf/dd91ce25-11fe-a14f-52c8-f1a9bd9085c2>.

²⁴ *Id.*

11,614 MW (77% increase) to provide enough solar power to cover the 1,626 MW added proof-of-work mining load anticipated by Q4 of 2022. Alternatively, adding wind for 576 MW would entail adding 1,986 MW wind, at 4 MW per turbine, equal to adding another 496 turbines—a 23% increase over the 2,200 turbines already planned. To cover the 1,626 MW load anticipated by Q4 2022 would require an additional 5,607 MW wind, or 1,401 additional turbines by 2030—an increase of 64% over the NYISO-planned build out. Investigative studies will be essential for understanding what necessary additions would need to be made to the transmission system to provide interconnection and hosting for this added capacity.

Further, as indicated above in the Table 1 list of current mining operations in the State, much of the current proof-of-work mining activity is taking place near Niagara Falls and the St. Lawrence River hydro plants. Mining facilities are utilizing the State’s few sources of baseload renewable energy, while not providing any additive renewable energy or storage resources to the grid to compensate.

D. Proof-of-work cryptocurrency mining operations could displace renewables away from residential and commercial uses as well as hard-to-decarbonize industries.

Across the country, the cryptocurrency mining industry has been arguing that proof-of-work cryptocurrency mining could “stabilize” the grid. Grid experts are doubtful. For example, a recent analysis by UC Berkeley’s Energy Institute found that “[a]dding demand will just make a grid tighter and increase capacity problems.”²⁵ In addition, it is patently unfair for miners to add enormous new loads on the grid and then seek to be paid, handsomely, to take that load off the grid during emergencies or peak times, at the expense of ratepayers.²⁶ As explained recently by

²⁵ Borenstein, *supra* note 24.

²⁶ See, e.g., MacKenzie Sigalos, *Bitcoin Miners Say They’re Helping to Fix the Broken Texas Electric Grid – and Ted Cruz Agrees*, CNBC (Dec. 4, 2021) (“Miners commit to buying a certain amount of power, and either use it for mining if the grid doesn’t need it, or sell it back at a profit if the grid demands it.”), <https://www.cnbc.com/2021/12/04/bitcoin-miners-say-theyre-fixing-texas-electric-grid-ted-cruz-agrees.html>; Naureen S. Malik & Michael Smith, *Crypto Mania in Texas Risks New Costs and Strains on Shaky Grid*, Bloomberg (Mar. 15, 2022) (“Upgrades to the power system will be needed because the grid ‘can’t handle all of this new load,’ said Evan Caron, a former power trader in Austin who invests in energy technology. New investments in the transmission system are typically shared among ERCOT’s consumers and show up in their utility bills.”), <https://www.bloomberg.com/news/articles/2022-03-15/crypto-mania-in-texas-risks-new-costs-and-strains-on-shaky-grid>; Chris Tomlinson, *Crypto Could Raise Texas Electricity Prices if Not Planned Well*, Houston Chronicle (Apr. 15, 2022) (“Crypto-miners often brag they can shut down in five seconds if the grid needs the power, but rising cryptocurrency values make voluntarily ‘saving the grid’ less attractive. Miners are enrolling in ERCOT programs where they are paid to shut down, creating an additional cost.”), <https://www.houstonchronicle.com/business/columnists/tomlinson/article/Crypto-could-raise-Texas-electricity-prices-if-17081552.php>; Sabrina Toppa, *In Texas, an Influx of Crypto Miners May Mean Higher Elec. Bills for Consumers*, The Street (Mar. 16, 2022) (explaining that “upgrades to the local electricity grid may soon involve an increase in electricity fees for consumers across the Lone Star state”), <https://www.thestreet.com/crypto/news/in-texas-the-influx-of-crypto-miners-may-mean-higher-electricity-bills>; Karin Rives, *Crypto Mining Industry’s Greening Campaign Raises New Questions*, S&P Global (May 4, 2022) (“[C]oncerns are growing that the industry could be using too much of the state’s wind capacity and could drive up power prices for homes and businesses.”), <https://www.spglobal.com/marketintelligence/en/news-insights/latest-news-headlines/crypto-mining-industry-s-greening-campaign-raises-new-questions-69679254>; see also Ariana Garcia, *Can Texas’ Power Grid Withstand Cryptocurrency Mining?*, Governing (Nov. 2, 2021), <https://www.governing.com/next/can-texas-power-grid-withstand-cryptocurrency-mining>.

a professor at the Berkeley HAAS Energy Institute, “the crypto mining business model is based on buying electricity at wholesale prices or on a real-time variable price tariff. . . . That means the mining companies get paid for taking demand off the grid that they never would have put on the grid at those high prices anyway.”²⁷

The recent challenges to the state of Texas’s grid are illustrative, where proof-of-work miners have also flocked for access to cheap but GHG-intensive electricity. For comparison, ERCOT, the independent system operator of Texas, estimates that proof-of-work cryptomining alone will account for 6 GWs of new demand over the next two years—with peak demand in 2022, a 7.7% increase over 2021 demand.²⁸ Due to the immense increase in load from proof-of-work cryptomining operations alone, regardless of electrification loads expected from transportation and building electrification in the coming decade or from new renewable energy needed for *truly* green, clean hydrogen, ERCOT is instituting additional processes and requirements for new large-scale crypto miners seeking to connect to the state’s power grid.²⁹ On March 25, 2022, ERCOT released a notice instructing utilities to submit studies on the impact of miners and other large users tapping the grid before they can get “approval to energize.”³⁰ ERCOT’s new rule applies to both new projects and expansions, as well as projects at the site of power generation, and projects that do not have their own power generation, specifically: any project that will add 20 MW of demand on the site of a generator within the next two years, and any project that will add 75 MW of demand without its own power generation on site within the next two years, will have to undergo a review process.³¹ NYISO should consider additional processes and differential rates like these for crypto miners in New York State who tax our grid and raise rates as they divert cheap renewable energy for essential home and commercial use.³²

In New York, this equally enormous amount of energy use (20% of the country’s mining) threatens to undo our State’s climate efforts to date, and at a time when New York needs to drastically reduce consumption of fossil fuels across its economy, prolongs the usage of fossil fuels by diverting renewable energy sources away from where it is needed to achieve New York’s climate and energy goals. If proof-of-work cryptocurrency mining operations run on fossil fuels—with the resultant spewing of toxic air and increasing climate pollution, and

²⁷ Borenstein, *supra* note 24 (emphasis added).

²⁸ Naureen S. Malik, *Crypto Miners’ Electricity Use in Texas Would Equal Another Houston*, Bloomberg (Apr. 27, 2022), <https://www.bloomberg.com/news/articles/2022-04-27/crypto-miners-in-texas-will-need-more-power-than-houston>; Michael Smith, *Texas Governor Eyes Bitcoin to Fortify the Electric Grid*, Bloomberg (Jan. 27, 2022), <https://www.bloomberg.com/news/articles/2022-01-27/texas-governor-eyes-bitcoin-mining-to-fortify-the-electric-grid>.

²⁹ See Naureen S. Malik, *Texas Grid’s Review of Crypto Miners Connection May Take Months*, Bloomberg (Apr. 4, 2022), <https://www.bloomberg.com/news/articles/2022-04-04/texas-grid-s-review-of-crypto-miners-connection-may-take-months>.

³⁰ ERCOT, W-A032522-01, *Market Notice re Interim Large Load Interconnection Process* (Mar. 25, 2022), https://www.ercot.com/services/comm/mkt_notices/detail?id=fc84b65f-72fe-4704-9974-b52974cdb81e.

³¹ Bloomberg Wire, *Texas now requiring crypto miners to seek ‘approval to energize’ before plugging into grid*, Dallas Morning News (Mar. 30, 2022), <https://www.dallasnews.com/business/energy/2022/03/30/texas-now-requiring-crypto-miners-to-seek-approval-to-energize-before-plugging-into-grid/>; Chris Reeder & Miguel Suazo, *ERCOT Now Requires Cryptocurrency Miners to Provide Information on Their Impact to the Texas Power Grid*, JDSupra (Apr. 6, 2022), <https://www.jdsupra.com/legalnews/ercot-now-requires-cryptocurrency-6065651/>.

³² See *id.*

generation of enormous amounts of electronic waste—they contravene New York’s several statutory mandates of the CLCPA.

Even when powered by renewables, the explosion of proof-of-work mining threatens New York’s climate goals by diverting renewables from being sent to the grid that is rapidly electrifying and the State will not be able to ensure that the limited renewable energy that exists today goes where the state’s energy is most demanded. Contrary to proof-of-work cryptocurrency mining proponents, mining is not a catalyst for growth in clean energy. Clean energy is already cost-effective, efficient, and decentralized in comparison to dirty fossil fuel plants, even without the presence of cryptocurrency mining.

In actuality, cryptocurrency mining companies are predominantly utilizing fossil fuel generation,³³ to mine for cryptocurrency. And even where clean, renewable energy technologies like solar or wind are being used to mine, many operations do not have commitments for renewable-only power supply. Further, considering how volatile the cryptocurrency market is and the fact that cryptocurrency mining companies come and go, there are serious implications for what happens when a cryptocurrency mining facility leaves an area and the economics of the renewable energy project becomes unable to properly compete in an open market, thereby potentially becoming stranded.

Crypto miners also often assert that they can spur renewable energy growth. But renewable energy costs are already low,³⁴ its growth is exponential,³⁵ and it does not need crypto

³³ While proponents of proof-of-work cryptocurrencies claim that mining makes use of excess renewable generation, thereby reducing curtailment and helping to financially support renewable power development, miners have largely relied on baseload power supplied primarily by fossil fuels. Guest Contributor, *Cryptocurrency Mining and Renewable Energy: Friend or Foe?*, Smart Energy Int’l, (May 25, 2021), <https://www.smart-energy.com/renewable-energy/cryptocurrency-mining-and-renewable-energy-friend-or-foe/>.

³⁴ According to a 2020 report by the International Energy Agency, solar power now offers the “cheapest electricity in history” with technology cheaper than coal and gas in most major countries, and an estimated 43% increase in solar output expected by 2040. Simon Evans, *Solar is Now ‘Cheapest Electricity in History’*, Confirms IEA, CarbonBrief (Oct. 13, 2020), <https://www.carbonbrief.org/solar-is-now-cheapest-electricity-in-history-confirms-iea>; Utility-scale solar and wind power costs have dropped 90% and 71% respectively in the last 10 years, now costing less than gas, geothermal, coal, or nuclear. Ula Chrobak, *Solar Power Got Cheap. So Why Aren’t We Using It More?*, Popular Science (Oct. 8, 2021), <https://www.popsci.com/story/environment/cheap-renewable-energy-vs-fossil-fuels/>.

³⁵ PJM, a regional transmission organization that coordinates the movement of wholesale electricity across 13 Mid-Atlantic and Midwest states, plus the District of Columbia, had over 288,609 MW in their interconnection queue at the end of December 2021, with projects including 136,293 MW of solar, 74,498 MW of energy storage, 34,152 MW of hybrid projects that combine storage and renewables, 25,336 MW of onshore wind and 18,330 MW of offshore wind. Ethan Howland, *PJM Stakeholders Advance Interconnection Reform Plan to speed Process, Clear Clean Energy Backlog* (Feb. 11, 2022) <https://www.utilitydive.com/news/pjm-interconnection-reform-plan-renewable/618707/>; Currently, developers have more than 2,000 solar, wind, battery storage and hybrid solar plus storage projects waiting for approval in the PJM interconnection queue, totaling nearly 300 GW of generating capacity that, if built, could generate power for 68 million homes and support approximately 1.7 million jobs. Jeff Dennis & Kat Burnham, *In PJM, Renewable Energy Projects Are Getting Stuck* (Feb. 10, 2022), <https://blog.aee.net/in-pjm-renewable-energy-projects-are-getting-stuck>; The Midcontinent System Operator (MISO), similarly has more than 64,000 MW of wind and solar in their interconnection queue, and is working on proposals to assist renewable energy developers to bring their projects to market quicker. Kelley Welf, *Miso Leads in Renewable Energy Interconnection* (Sept. 1, 2021), <https://www.renewableenergyworld.com/solar/miso-improved-interconnection-process-saves-precious-time/#gref>.

mining operations to prop it up. Even if cryptocurrency mining companies only used excess renewable energy that would otherwise be curtailed, there are serious implications with wasting energy at a time when we need to be placing that energy in energy storage technologies for dispatch at peak usage times. The answer to any purported stranded renewable energy is increased investments in battery storage and transmission, which the State is laudably doing.³⁶ The answer is not using that renewable energy for private gain by a crypto-mining operation that has no incentive to develop clean resources other than for their own use private profits.

Building and transportation electrification will further increase demand on the grid, and green hydrogen proposals would also require copious amounts of zero-emissions energy.³⁷ Simply put, there is not enough clean energy in New York State to meet all that required demand and also supporting the extensive demands of proof-of-work cryptocurrency mining.

Increases in proof-of-work cryptocurrency mining in New York State would undoubtedly interfere with the achievement of a net zero electric sector because it increases New York's

³⁶ PSC has approved contracts for renewable energy and transmission projects expected to deliver up to \$5.8 billion in overall societal benefits statewide, including GHG reductions and air quality improvements, and \$8.2 billion in economic development. See NYSERDA, *Largest Renewable Energy and Transmission Projects in New York State in 50 Years* (April 14, 2022), <https://www.nyserda.ny.gov/About/Newsroom/2022-Announcements/2022-04-14-Governor-Hochul-Announces-Approval-of-Contracts>; To date, the Commission has authorized offshore wind solicitations, funded programs to support the electrification of buildings, supported both large scale and distributed clean energy project development, and instituted a coordinated planning process to evaluate local transmission and distribution system needs to support the State's full transition to renewable generation. See, e.g., Order Adopting Modifications to the Clean Energy Standard, *Proceeding on Motion of the Commission to Implement a Large-Scale Renewable Program and a Clean Energy Standard*, N.Y. Dep't of Pub. Serv. Case No. 15-E-0302, (Oct. 15, 2020) (Docket No. 826), <https://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId={EAAF1A1E-2A05-49A7-A4D1-C5755E5BE536}>; *Proceeding on Motion of the Commission to Implement Transmission Planning Pursuant to the Accelerated Renewable Energy Growth and Community Benefit Act*, N.Y. Dep't of Pub. Serv. Case No. 20-E-0197, Order on Phase 1 Local Transmission and Distribution Project Proposals (Feb. 11, 2021) (Docket No. 58), <https://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId={F8CA2C7D-F6A9-480D-8329-AA0312C5F3E4}>.

³⁷ The limited clean renewable energy is also needed for the green hydrogen buildout as presently envisioned by the Biden administration. For clean hydrogen power generation, there cannot be grey or blue hydrogen, only hydrogen powered entirely by renewable energy. See, e.g., Dep't of Energy, *DOE Seeks Public Input on New Hydrogen Hubs, Clean Hydrogen Manufacturing Programs to Decarbonize Industry, Transportation Sectors and Provide Healthier Air for All* (Feb. 15, 2022), <https://www.energy.gov/articles/doc-establishes-bipartisan-infrastructure-laws-95-billion-clean-hydrogen-initiatives>; see also Sasan Saadat & Sara Gersen, *Reclaiming Hydrogen for a Renewable Future: Distinguishing Oil & Gas Industry Spin from Zero-Emission Solutions*, at 24–26, Earthjustice (2021), https://earthjustice.org/sites/default/files/files/hydrogen_earthjustice.pdf (citing Jeffrey Goldmeier et al., *Hydrogen as a Fuel for Gas Turbines* at 3–4, Gen. Elec. (2021)), https://www.ge.com/content/dam/gepower-new/global/en_US/downloads/gas-new-site/future-of-energy/hydrogen-fuel-for-gas-turbines-gea34979.pdf.

dependence on fracked gas resources for capacity generation.³⁸ The CLCPA requires upstream emissions from a fossil fuel-fired electric generating facility to be included in the calculation of GHG emissions.³⁹ Upstream emissions include “greenhouse gases produced outside of the state that are associated with the generation of electricity imported into the state and the extraction and transmission of fossil fuels imported into the state.” ECL § 75-0101(13). Historically, upstream emissions make up around 30–40% of sectoral emissions for electricity generation.⁴⁰

New York State currently generates more than half of its capacity basis from gas plants.⁴¹ Without focusing now on meeting the 2030 mandate, the State risks retaining and installing even more gas capacity than could possibly run—and consequently installing less renewable capacity than the State must run—to achieve a minimum of 70% renewable generation and ensure that overall statewide emission reductions reach 40% by 2030.

E. Proof-of-work mining increases the operation of fossil fueled power plants.

Companies and private-equity firms have invested significantly in proof-of-work mining facilities in New York and throughout the U.S.⁴² We frequently hear from the Bitcoin community about the merits of financial decentralization, but the reality does not seem to bear out that utopian dream.⁴³ Because of the immense amount of capital needed to purchase enough application-specific integrated circuit (“ASIC”) miners⁴⁴ to competitively mine bitcoin, there are fewer miners today compared to even a few years ago.⁴⁵ In 2021, before China banned mining, a whitepaper published by the National Bureau of Economic Research found that the top 10% of crypto miners control 90% of mining and just 0.1% (about 50 miners) control close to 50% of all

³⁸ First, New York State currently generates more than two-thirds of its capacity basis from natural gas plants. See *N.Y. State Profile and Energy Estimates*, U.S. Energy Info. Admin., <https://www.eia.gov/state/analysis.php?sid=NY> (last updated Oct. 21, 2021); Second, Greenidge was able to get permission for a pipeline from Pennsylvania to supply its fracked natural gas, with immense upstream GHG emissions. For example, at full plant capacity and including upstream emissions, plant emissions at Greenidge could be over 1,127,061 short tons of CO₂e per year. The CLCPA requires accounting of GHG emissions associated with the extraction and transmission of fossil fuels imported into the state using a 20-year time horizon. This form of net accounting necessitates using upstream fossil fuel cycle factor data that cover extraction, processing and transmission/distribution of natural gas, coal, and petroleum into the state. 6 NYCRR § 496.4; See also ECL § 75-0105(3); Astoria Title V Permit Denial, *supra* note 8 at 5.

³⁹ The CLCPA requires accounting of GHG emissions associated with the extraction and transmission of fossil fuels imported into the state using a 20-year time horizon. This form of net accounting necessitates using upstream fossil fuel cycle factor data that cover extraction, processing and transmission/distribution of natural gas, coal, and petroleum into the state. 6 NYCRR § 496.4; See also N.Y. E.C.L. § 75-0105(3); Astoria Title V Permit Denial, *supra* note 8 at 5.

⁴⁰ N.Y. Climate Action Council, *Meeting 13* at 27 (July 22, 2021), <https://climate.ny.gov/-/media/Migrated/CLCPA/Files/2021-07-22-CAC-Meeting-Presentation.ashx>.

⁴¹ See *N.Y. State Profile and Energy Estimates*, U.S. Energy Info. Admin., <https://www.eia.gov/state/analysis.php?sid=NY> (last updated Oct. 21, 2021).

⁴² See, e.g., *supra* note 17.

⁴³ See Christopher J. Brooks, *Bitcoin Has Its Own 1% Who Control Outsized Share of Wealth*, CBS News (Dec. 21, 2021), <https://www.cbsnews.com/news/bitcoin-cryptocurrency-wealth-one-percent/>.

⁴⁴ Paul Kim, *ASIC Mining: Computers Built Specifically For Mining Cryptocurrency*, Insider (Mar. 16, 2022), <https://www.businessinsider.com/personal-finance/asic-mining>.

⁴⁵ Kristina Zucchi, *Is Bitcoin Mining Still Profitable?*, Investopedia (June 10, 2022), <https://www.investopedia.com/articles/forex/051115/bitcoin-mining-still-profitable.asp>.

mining—which directly translates to “ownership” of Bitcoin.⁴⁶ It has been surmised that the concentration of mining wealth is even more pronounced in the U.S. today.⁴⁷

In New York, those entities are resurrecting and extending the life of old, inefficient, fossil-fueled power plants to mine proof-of-work cryptocurrency—yet again, resulting in significant greenhouse gas emissions and the resurgence of dire environmental pollution and injustice consequences. Two upstate New York power plants in particular tell a worrying story:

In North Tonawanda, New York, just outside Buffalo, is the fossil gas Fortistar North Tonawanda (“FNT”) power plant where a new owner intends to convert the little-used 60 MW gas turbine facility to mine proof-of-work cryptocurrency 24/7, 365 days per year. Over the past five years, the FNT plant operated at 2–13% capacity factor emitting relatively small amounts of CO₂, nitrogen oxide (“NO_x”), and other harmful air pollutants.⁴⁸ If the plant operates every day at full capacity, the potential emissions from the facility will sharply increase to 339,068 tons of CO₂ per year—a nearly **3,000%** increase in its CO₂ emissions—while also significantly increasing emissions of NO_x, particulate matter, carbon monoxide, and volatile organic compounds.⁴⁹ This significant increase in air pollution will impact several nearby environmental justice areas.⁵⁰

In addition, increased operation of the power plant significantly increases clean water intake and discharge of hot water. The FNT facility plans to use 500,000 gallons of water per day

⁴⁶ Igor Makarov & Antoinette Schoar, Nat’l Bureau of Econ. Rsch., Working Paper 29396, *Blockchain Analysis of the Bitcoin Market* 4 (Oct. 2021), https://www.nber.org/system/files/working_papers/w29396/w29396.pdf (note: this analysis was for the time period before China banned mining); see also Emily Graffeo, *Bitcoin Is Still Concentrated in a Few Hands, Study Finds*, Time (Oct. 25, 2021), <https://time.com/6110392/bitcoin-ownership/> (showing that it is believed that the concentration of mining and wealth is even more stark in the U.S. today).

⁴⁷ See Paul Vigna, *Bitcoin’s ‘One Percent’ Controls Lion’s Share of the Cryptocurrency’s Wealth*, The Wall Street J. (Dec. 20, 2021), <https://www.wsj.com/articles/bitcoins-one-percent-controls-lions-share-of-the-cryptocurrencys-wealth-11639996204>; Laurence Fletcher, *Hedge Funds Expect to Hold 7% of Assets in Crypto Within Five Years*, Financial Times (June 15, 2021), <https://www.ft.com/content/4f8044bf-8f0f-46b4-9fb7-6d0eba723017>; Khristoper J. Brooks, *Bitcoin Has Its Own 1% Who Control Outsized Share of Wealth*, CBS News (Dec. 21, 2021), <https://www.cbsnews.com/news/bitcoin-cryptocurrency-wealth-one-percent/>; Gregory Zuckerman, *Mainstream Hedge Funds Pour Billions of Dollars into Crypto*, The Wall Street J. (Mar. 9, 2022), <https://www.wsj.com/articles/mainstream-hedge-funds-pour-billions-of-dollars-into-crypto-11646808223>.

⁴⁸ *Air Markets Program Data*, Env’t Prot. Agency (“EPA”), <https://ampd.epa.gov/ampd/> (last visited May 5, 2022) (filtering by Customized Data Queries > ‘All Programs’ > ‘Emissions’, ‘Unit Level’ > ‘Facility Attributes’ > ‘Daily,’ > ‘Facility ID and Name’: ‘Fortistar North Tonawanda Inc’ > ‘Select All’ under Emissions Unit).

⁴⁹ DEC, Facility ID: 9291200059, Air Title V Permit Renewal to Fortistar North Tonawanda Inc., (Issued Nov. 09, 2016), https://www.dec.ny.gov/dardata/boss/afs/permits/929120005900013_r2.pdf.

⁵⁰ N.Y. Dep’t of Env’t Conservation (“DEC”), *Potential Environmental Justice Area (PEJA) Communities*, ArcGIS, https://www.arcgis.com/home/webmap/viewer.html?url=https://services6.arcgis.com/DZHQZm9cxOD4CWM/ArcGIS/rest/services/Potential_Environmental_Justice_Area_PEJA_Communities/FeatureServer&source=sd (filtering results to display: PEJA, 15000US360290091074, Census Block Group 15000US360290091074, Census Block Group 15000US360630232003, and Census Block Group 15000US360630232003); see also EPA, *EJSCREEN: EPA’s Environmental Justice Screening and Mapping Tool*, <https://ejscreen.epa.gov/mapper/> (according to EPA’s EJScreen, the area around the FNT plant has a disproportionately high ozone index when compared to the New York average).

for cooling purposes, which will discharge to the local wastewater treatment plant.⁵¹ That will account for approximately 12% of the City of North Tonawanda's current total water usage.⁵² This significant additional thermal discharge comes at a time when the city can least afford it and in contrast, where clean energy jobs and economies abound. The North Tonawanda water treatment plant recently discovered that it needs \$3 million in emergency repairs and \$30 million for long term repairs.⁵³

In another instance, on the western shores of Seneca Lake, amongst the productive vineyards and farms of the Finger Lakes, is the Greenidge Generating Station. Like FNT, in recent years Greenidge was operating infrequently⁵⁴ and is now operating 24/7/365 to mine cryptocurrency. In 2020, the Greenidge CFO stated “[w]ithout the crypto mining operation, we would not be running most of the time.”⁵⁵ Indeed for six years, the plant did not operate at all.⁵⁶ The Greenidge facility emissions history tells the story, (*see Table 2 below*):

⁵¹ Digihost, *Full Environmental Assessment Form 5* (Aug. 12, 2021), https://www.northtonawanda.org/documents/legal%20notice/fortistar%20amended%20seqr_2.pdf (finding that the City's current usage averages 4 million gallons per day).

⁵² *Id.*

⁵³ Thomas J. Prohaska, *North Tonawanda Asks for \$30 Million in Emergency Aid to Repair Sewer Plant*, Buffalo News (Mar. 12, 2022), https://buffalonews.com/news/local/government-and-politics/north-tonawanda-asks-for-30-million-in-emergency-aid-to-repair-sewer-plant/article_91b32598-a145-11ec-b35d-7314fe498fd0.html.

⁵⁴ After only a few years of operating as an electric generating facility, the facility's owners realized that there was not enough demand for electricity to make operating the facility profitable. Greenidge's CFO stated that rather than close the power plant, they decided to convert the facility to a Bitcoin mining operation. *See* John Christensen, *Power Plant to Add Data Center*, Chronicle-Express (July 31, 2019), <https://web.archive.org/web/20190731061907/https://www.chronicle-express.com/news/20190731/power-plant-to-add-data-center - expand>.

⁵⁵ *Digital Assets: Greenidge Gen, Once a Coal Plant, Is Now a Profitable Crypto Miner*, DailyAlts (Aug. 19, 2020) <https://dailyalts.com/digital-assets-greenidge-gen-once-a-coal-plant-is-now-a-profitable-crypto-miner/>.

⁵⁶ *Power Sector Emissions Data*, EPA, <https://www.epa.gov/airmarkets/power-sector-emissions-data>; <https://ampd.epa.gov/ampd/> (last visited May 4, 2022), (filtering by Customized Data Queries > 'All Programs' > 'Emissions', 'Unit Level' > 'Facility Attributes' > 'Daily,' 'Select All' under Emissions Unit). These numbers do not include upstream emissions. For a full recitation of the facts and issues concerning the air permit at Greenidge, please see the Comments from Seneca Lake Guardian et al., *in Opposition to the Draft Title V Air Permit for Greenidge Generating Station, located at 590 Plant Road, Dresden, New York 14441* (Nov. 19, 2021), https://earthjustice.org/sites/default/files/files/2021-11-19_slg-cpfl-fft-sc-ej-comments-to-dec.pdf.

Table 2: Greenidge Generating Station Emissions 2009–2022

Year	Days of Operation ⁵⁷	Approx. Annual Capacity Factor ⁵⁸	CO2 (tons/ year)	No. of Miners	Fuel source
2009	267	~34%	455,795	0	Coal
2010	358	~65%	599,105	0	Coal
2011 ⁵⁹	77	~10%	113,357	0	Coal
2012	0	0%	0	0	none
2013	0	0%	0	0	none
2014	0	0%	0	0	none
2015	0	0%	0	0	none
2016	0	0%	0	0	none
2017	135	~17%	124,009	0	Gas
2018	147	~19%	119,304	0	Gas
2019 ⁶⁰	48	~6%	39,406	0	Gas
2020	343	~42%	228,303	6,900 miners⁶¹	Gas
2021	353	~51%	278,846	15,300 miners ⁶²	Gas
2022	Every day	Increasing	91,530 (for 01/01–03/31/2022) ⁶³	32,500 miners ⁶⁴	Gas

The Greenidge plant also discharges hot water from the plant, and the plant owners are permitted to discharge 134 million gallons of water daily into a nearby trout stream at temperatures of *up to 108 degrees Fahrenheit*.⁶⁵ This high quantity of thermal pollution endangers the Keuka Outlet and Seneca Lake—potentially impacting health and wildlife habitability, including but not limited to potential harmful algal blooms, migration and loss of biodiversity, oxygen depletion, direct thermal shock, and changes in dissolved oxygen.⁶⁶

As high-profile as they are, the conversion of Greenidge Generating Station and Fortistar North Tonawanda from low-capacity plants to round-the-clock mining operations are just two examples of how a low-capacity power plant can ramp up operations to increase their profits at the expense of local air and water and increase GHG emissions that accelerate the impending climate crisis. Indeed, Senator Kirsten Gillibrand stated in her September 8, 2021 letter to the

⁵⁷ Days with less than three hours of operation were not included.

⁵⁸ The annual capacity factor is a percentage measurement of actual generation in relation to potential maximum generation on an annual basis. For example, a generator with a 1 MW capacity operating at full capacity for a year (8,760 hours) would produce 8,760 megawatt-hours of electricity. The generator’s annual capacity factor would be 100%. NYISO, *New York’s Clean Energy Grid of the Future*, Glossary at 49 (2021), <https://www.nyiso.com/documents/20142/2223020/2021-Power-Trends-Report.pdf/471a65f8-4f3a-59f9-4f8c-3d9f2754d7de>.

⁵⁹ Based on its emissions, it appears that the power plant operated for the three months of 2011 before going offline.

⁶⁰ The year before Greenidge changed the operations at the plant to begin mining.

⁶¹ Greenidge Generation Holdings Inc., Sec. & Exch. Comm’n, *Form S-1/A*, at 2 (Oct. 5, 2021), <https://sec.report/Document/0001193125-21-291578/>.

⁶² *Id.* at 13.

⁶³ Projected annualized CO2 emissions for 2022, if no more miners are installed. *Id.*

⁶⁴ *Id.* at 3.

⁶⁵ Seneca Lake Guardian, *Facts Matter: Greenidge Bitcoin Mining Expansion* (Mar. 10, 2021), <https://senecalakeguardian.org/Facts-Matter-Greenidge-Bitcoin-Mining>; see also DEC, *Water Withdrawal Permit*, Permit ID 8-5736-00004/00015, (effective 09/11/2017), https://treichlerlawoffice.com/water/greenidge/WaterPermit_Final_2017-09-11_.pdf.

⁶⁶ See, e.g., *Causes and Effects of Thermal Pollution*, Arcadia: Blog, (Aug. 2, 2017), <https://blog.arcadia.com/causes-effects-thermal-pollution/>.

EPA that “the potential consequences of the plant’s Bitcoin mining operations and the effect on local emissions and air quality” are significant and require full assessment.⁶⁷ Senator Chuck Schumer also recently “urged the Environmental Protection Agency (EPA) to exercise its oversight powers under the Title V Clean Air Act and Clean Water Act and closely review Greenidge Generation Plant’s permit renewal application” because “[t]he EPA and NYSDEC regulate such plants to keep these negative impacts on our health and the environment to a minimum, while maximizing the public good” and “[t]his increase in emissions may bring profits to the plant’s owners, but it does not provide the same pub[l]ic good to the surrounding community. . . .”⁶⁸

Notably, as New York and the U.S. transition to renewable energy resources, there will be an increasing number of fossil fuel power plants that operate less frequently. Evaluation of NYISO’s 2021 Load and Capacity Data spreadsheet identifies a potential 22,891 MW capacity from fossil fueled power plants operating at less than 30% capacity factor—all of which, under current lack of regulations, could be utilized for proof-of-work mining operations.⁶⁹ Indeed, a March 2021 opinion piece in the Albany Times Union, penned by the President and CEO of the Independent Power Producers of New York titled “There’s a Role for Natural Gas in the Renewable Energy Future” foreshadowed such a turn, describing Greenidge’s transition to crypto mining as a “model for innovation.”⁷⁰

F. Electricity prices for local residents and businesses spike when proof-of-work mining moves into town.

Several New York localities have seen their local electricity prices rise when proof-of-work cryptocurrency miners move into town.

For example, in Plattsburgh, New York, residents’ electricity bills increased 30% when a mining boom came to town a few years ago.⁷¹ As a result, the New York Municipal Power Agency (“NYMPA”), an association of thirty-six municipal power authorities, petitioned the State Public Service Commission to prevent high-density load customers, specifically cryptocurrency companies, from requesting disproportionately large amounts of power (in some

⁶⁷ Letter from Senator Kirsten Gillibrand to Michael Regan, EPA Administrator, Re: Greenidge Bitcoin Plant Title V Permit (Sept. 8, 2021),

<https://www.gillibrand.senate.gov/imo/media/doc/Gillibrand%20Letter%20to%20EPA%20on%20Greenidge%20Bitcoin%20Plant%20Title%20V%20Permit%20-%20Updated.pdf>.

⁶⁸ Press Release, Sen. Charles E. Schumer, *Citing Environmental Concerns, Schumer Calls on EPA to Review Air Permit For Greenidge Power Plant Cryptocurrency Mining Facility*, (Oct. 12, 2021),

<https://www.schumer.senate.gov/newsroom/press-releases/citing-environmental-concerns-schumer-calls-on-epa-to-review-air-permit-for-greenidge-power-plant-cryptocurrency-mining-facility-senator-reveals-emissions-from-plant-have-recently-increased-tenfold-and-with-ownership-planning-to-expand-virtual-mining-operation-pollution-from-mining-will-only-increase>.

⁶⁹ Provided by Fossil Free Tompkins (citing NYISO, *2021 Load and Capacity Data*, at 80 (2021),

<https://www.nyiso.com/documents/20142/2226333/2021-Gold-Book-Final-Public.pdf/b08606d7-db88-c04b-b260-ab35c300ed64>).

⁷⁰ Gavin Donohue, *There’s a Role for Natural Gas in the Renewable-Energy Future*, Times Union (Mar. 2, 2021), <https://www.timesunion.com/opinion/article/There-s-a-role-for-natural-gas-in-the-15993563.php>.

⁷¹ Patrick McGeehan, *Bitcoin Miners Flock to New York’s Remote Corners, but Get Chilly Reception*, N.Y. Times (Sept. 19, 2018), <https://www.nytimes.com/2018/09/19/nyregion/bitcoin-mining-new-york-electricity.html>.

cases amounting to up to 33% of municipal utility's total load).⁷² Concerns about electric rates, noise complaints, and unsightly server setups ultimately led the town of Massena to issue a moratorium on crypto operations while public hearings are conducted to consider their continued impact in the small town.⁷³ Cryptocurrency companies that require high quantities of power increase bulk power supply costs with little to no capital investment in the local community. A recent study found that Plattsburgh residents and small businesses paid \$244 million more in higher electric bills due to crypto's arrival.⁷⁴ After NYMPA increased rates for supplemental electricity used by high-density load customers, large-scale cryptocurrency data centers were forced to move from Plattsburgh to Massena, which is not a NYMPA member, as their costs increased over \$1 million more than the year prior when they were allowed to buy market-rate electricity.⁷⁵

Other parts of the country have and continue to face the same issues. For example, in eastern Washington, the Chelan County Public Utility District was overwhelmed by demand for cheap hydropower from crypto miners, and had to institute two moratoriums on new mining operations and a new rate structure to discourage miners from placing further strains on their grid.⁷⁶ Many cryptocurrency miners left the area because of the rate changes,⁷⁷ and when miners leave an area, there is a recurring concern across the country that they might "leav[e] ratepayers to cover the costs of upgrades that may no longer be needed."⁷⁸ For example, a congressional memo cited to a cryptocurrency mining operation in Washington state that "declared bankruptcy in 2018, leaving more than \$700 thousand in unpaid utility and electricity bills."⁷⁹

For a fuller discussion of the economic and ratepayer impacts on local residents and municipalities, we refer to the comments submitted by Dr. Colin Read and Buffalo Niagara Waterkeeper, as well as our partners' New York-focused comments filed in response to the

⁷² Paul Ciampoli, *Public Power Can Charge Cryptocurrency Firms Higher Rates: N.Y. PSC*, Am. Pub. Power Ass'n (Mar. 16, 2018), <https://www.publicpower.org/periodical/article/public-power-can-charge-cryptocurrency-firms-higher-rates-ny-psc>.

⁷³ Keith Benman, *Massena Seeks Public's Input on Cryptocurrency Mining*, 7 News WWNY (Feb. 15, 2022), <https://www.wwnytv.com/2022/02/15/massena-seeks-publics-input-cryptocurrency-mining/>.

⁷⁴ Laura Counts, *Power-hungry Cryptominers Push Up Electricity Costs for Locals*, Berkeley Hass (Aug. 3, 2021), <https://newsroom.haas.berkeley.edu/research/power-hungry-cryptominers-push-up-electricity-costs-for-locals/>; see also Mateo Benetton et al., *When Cryptomining Comes to Town: High Electricity-Use Spillovers to the Local Economy*, SSRN (May 14, 2021), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3779720.

⁷⁵ McKenzie Delisle, *Mining Operation Moves Out of City for Winter*, Press-Republican (Nov. 11, 2019), https://www.pressrepublican.com/news/local_news/mining-operation-moves-out-of-city-for-winter/article_4c86c044-4e1e-5ad6-8e6d-0ad19b875e35.html.

⁷⁶ See Steve Wright, Testimony before the Subcommittee on Oversight and Investigations, House Energy & Com. Comm. Hearing: Cleaning Up Cryptocurrency: The Energy Impacts of Blockchains at 2 (Jan. 20, 2022), https://energycommerce.house.gov/sites/democrats.energycommerce.house.gov/files/documents/Witness%20Testimony_Wright_OI_2022.01.20.pdf.

⁷⁷ *Id.*; see also Corbin Hiar, *Crypto Mining Gulps Power. Can It Help Renewable Energy?*, E&E News (Jan. 21, 2022), <https://subscriber.politicopro.com/article/eenews/2022/01/21/crypto-mining-gulps-power-can-it-help-renewable-energy-285435>.

⁷⁸ Naureen S. Malik & Michael Smith, *Crypto Mania in Texas Risks New Costs and Strains on Shaky Grid*, Bloomberg (Mar. 15, 2022), <https://www.bloomberg.com/news/articles/2022-03-15/crypto-mania-in-texas-risks-new-costs-and-strains-on-shaky-grid>.

⁷⁹ Comm. on Energy & Com., *supra* note 16 at 9.

Biden Administration Executive Order and Request for Information on the climate and energy impacts of digital assets.⁸⁰

III. Mitigation Strategies the Climate Action Council Should Seriously Consider to Avert a Climate Crisis for All New Yorkers

With such a significant likelihood of the cryptocurrency mining industry derailing our State’s climate and energy commitments, several mitigation strategies should be considered. Yet, none appear as possibilities in the draft scoping plan. This is an enormous oversight for an industry that already uses 576 MW of state energy resources and is estimated to use 1,626 MW of state energy resources by the end of this calendar year.⁸¹

A. The Final Scoping Plan should recommend a temporary moratorium on proof-of-work mining until the impacts on the state’s climate and energy can be ascertained and mitigated.

The Governor is currently considering a partial temporary moratorium on any new or expanded proof-of-work mining operations at fossil-fueled power plants until a General Environmental Impact Statement (“GEIS”) under the State Environmental Quality Review Act (“SEQRA”) can be conducted. 2022 NY Senate-Assembly Bill S6486D, A7389C. The bill via the GEIS requirement, seeks to address the climate and local pollution impacts of fossil-fueled mining operations, concerns raised by the strain on the grid created by the enormous new energy demand in the State from mining, as well as the diversion of renewables needed for other economic sectors to meet the CLCPA’s statutory mandates.⁸²

In recognition of this, recently, forty-five state legislators sent a letter to the Governor stating:

We cannot meet these critical CLCPA goals to break our current dependency on fossil fuels as a state if we are simultaneously significantly increasing our total state energy consumption from fossil fuel sources.⁸³

Recent letters to the Governor echo this sentiment. In addition to a partial temporary moratorium, or if the Governor cannot implement such much-needed remedies before the

⁸⁰ See Dr. Colin Read, Dep’t of Econ & Finance, SUNY Plattsburgh, *Who Pays for Bitcoin Mining?* (2022) [attached as Exhibit A]; Comments by Buffalo Niagara Waterkeeper, *re: Request for Information on the Energy and Climate Implication of Digital Assets* (May 09, 2022) [attached as Exhibit B]; Comments by Seneca Lake Guardian et al., *re: The Energy and Climate Implications of Digital Assets in New York State* (May 09, 2022) [attached as Exhibit C].

⁸¹ Provided by Fossil Free Tompkins; *see also* n. 19, Table 1.

⁸² See Earthjustice, *Statewide Organizations, Faith Based Groups, Labor Union, and Businesses Come Together to Urge Governor Hochul to Deny Greenidge Generation Cryptocurrency Mining Facility Permit; Adopt Moratorium Cryptocurrency Mining* (Oct. 13, 2021), <https://earthjustice.org/news/press/2021/statewide-organizations-faith-based-groups-labor-union-and-businesses-come-together-to-urge-governor-hochul-to>; Marie French, *Cryptocurrency Industry Fights Proposed NY Moratorium. Here is What’s at Stake*, POLITICO (Jan. 28, 2022), <https://www.politico.com/news/2022/01/29/cryptocurrency-industry-fights-proposed-ny-moratorium-here-is-whats-at-stake-00001994>.

⁸³ Letter from Assembly Member Anna R. Kelles & Senator Kevin S. Parker et al. to Gov. Kathy Hochul & DEC Commissioner Basil Seggos, *Re: Greenidge Generating Station* (Oct. 6, 2021).

scoping plan is finalized, New York State should consider the following complimentary strategies to mitigate the enormous climate and energy impacts of proof-of-work mining.

B. The State should strictly review all air and water permits for any proof-of-work mining operations as likely inconsistent with the CLCPA.

The State should deny any air or water permit or renewal for any proof-of-work mining operations as inconsistent with the CLCPA.⁸⁴ As described in November 2021 comments from Seneca Lake Guardian, The Committee to Preserve the Finger Lakes, Fossil Free Tompkins, Sierra Club, and Earthjustice to DEC about the Greenidge plant, the Clean Air Act, the CLCPA, and SEQRA all contain provisions that give DEC ample authority and multiple opportunities to deny air and water permits for proof-of-work cryptocurrency mining operations.⁸⁵ DEC should not renew or grant water permits for any proof-of-work mining operations. Because of the current reliance on fossil fuel power plants and the massive amounts of water needed to cool off their operations, proof-of-work mining also poses enormous threats to accessible, clean water as well as to the ecosystems that rely on clean water. Thermal discharges into freshwater lakes in particular can create conditions that are conducive for algal blooms.⁸⁶ When combined with agricultural runoff and rising temperatures due to climate change, these warmer water discharges have been demonstrated as catastrophic for a local environment.⁸⁷ As mentioned above, the Greenidge power plant is allowed to discharge 134 million gallons of water at up to 108 degrees Fahrenheit under its existing permit.⁸⁸ In the case of Fortistar North Tonawanda, the city of North Tonawanda must expend over \$30 million dollars⁸⁹ to upgrade its wastewater infrastructure to accommodate discharging the estimated 500,000 gallons of hot water per day from the plant.⁹⁰

C. PSC should refuse to grant permission for proof-of-work mining operations as inconsistent with the CLCPA.

As described in the letters from the Sierra Club Atlantic Chapter and Earthjustice in PSC Case No. 21-M-0238, behind-the-meter proof-of-work cryptocurrency mining operations are not

⁸⁴ See, e.g., CLCPA § 7(2); Comments from Seneca Lake Guardian et al., *supra* note 60; Astoria Title V Permit Denial, *supra* note 8; Letter from Daniel Whitehead, Dir. Div. of Env't Permits, DEC, to Brenda D. Colella & Danielle E. Mettler-LaFeir, Danskammer Energy LLC., *Re: Notice of Denial of Title V Air Permit* (Oct. 27, 2021), https://www.dec.ny.gov/docs/permits_ej_operations_pdf/danskammerdecision102721.pdf (“Danskammer Title V Permit Denial”).

⁸⁵ Comments from Seneca Lake Guardian et al., *supra* note 60.

⁸⁶ Kathleen M. Kowalski, *Harmful Lake Erie Algal Blooms Worsened by Power Plant Pollution*, Energy News Network (Jan. 25, 2016), <https://energynews.us/2016/01/25/harmful-lake-erie-algal-blooms-worsened-by-power-plant-pollution/>.

⁸⁷ Rob Herman, *Toxic Algae Blooms are on the Rise*, Sci. Am. (Sept. 7, 2016), <https://blogs.scientificamerican.com/guest-blog/toxic-algae-blooms-are-on-the-rise/>.

⁸⁸ Seneca Lake Guardian, *Facts Matter: Greenidge Bitcoin Mining Expansion* (Mar. 10, 2021), <https://senecalakeguardian.org/Facts-Matter-Greenidge-Bitcoin-Mining>; see also DEC, *Water Withdrawal Permit*, Permit ID 8-5736-00004/00015, (effective 09/11/2017), https://treichlerlawoffice.com/water/greenidge/WaterPermit_Final_2017-09-11_.pdf.

⁸⁹ Prohaska, *supra* note 57.

⁹⁰ Digihost, *supra* note 55.

in the public interest under both the CLCPA and the Public Service Law.⁹¹ The Public Service Commission itself has stated “New York is committed to ensuring energy intensive industries in general, including cryptocurrency mining, comply with the emissions limits set forth under the CLCPA and advancing the State’s climate goals.”⁹²

The conversion of retiring, retired, or low-capacity power plants for 24/7/365 data centers and bitcoin mining operations undermines our collective ability to meet the mandatory emissions reductions and equity goals in the CLCPA. Any decision by PSC that allows for significant increases in GHG emissions (*see* Greenidge Generation’s increases in Table 2 above) from these operations is inconsistent with the CLCPA.

D. The State should establish a registry for proof-of-work mining over a certain megawatt threshold.

Determining which sites have begun proof-of-work mining is difficult to ascertain, whether it be a power plant, a purported “data center,” or an industrial operation. Many can operate as of right now under existing laws, regulations, and permits with no additional oversight. Mining operations can negotiate private contracts with merchant generators or utilities for discounted rates. Given the unregulated nature of crypto mining, it is notoriously difficult to determine how much energy a particular entity is using, what fuel source the mining operation relies on, or estimate how much a particular entity is mining in general. Without a standardized methodology to collect data to properly estimate energy consumption from cryptocurrency mining, estimates will continue to vary widely. Without accurate information, it is nearly impossible for the State (and it goes without saying, the impacted communities, local groups, and interested residents) to understand the environmental impact a mining operation can have on a community or the planet.

Despite how little we know about mining operations, what we do know for certain is that the expansion of crypto currency mining in the United States increases air and water pollution, strains the electrical grid, and can increase electricity rates of local residents.

It would be beneficial for the public and local communities to know which power plants, data centers, and industrial operations near them are planning to convert to proof-of-work mining, and to know which energy sources they will be using, to assess potential local impacts, climate impacts, and to monitor CLCPA compliance.

⁹¹ See Earthjustice and Sierra Club Response Letter to FNT Letter, *Petition of Fortistar North Tonawanda Inc. and Digihost International Inc. for a Declaratory Ruling Regarding Application of Section 70 and 83 of the New York State Public Service Law and the Alternative, Approval of the Proposed Transaction Pursuant to Sections 70 and 83*, N.Y. Dep’t of Pub. Serv. Case No. 21-M-0238 (Jan. 27, 2022) (Docket No. 13), <https://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId={11800B32-7569-44E8-A99D-26C2B2B8ADAC}>. Section 70(5) of the Public Service Law states: “No consent shall be given by the commission to the acquisition of any stock in accordance with this section unless it shall have been shown that such acquisition is in the public interest.” Section 83(5) of the Public Service Law also states: “No consent shall be given by the commission to the acquisition of any stock in accordance with this section unless it shall have been shown that such acquisition is in the public interest.”

⁹² Testimony of the Public Service Commission, Assembly Standing Committee on Environmental Conservation et al. on Cryptocurrency Mining and the CLCPA at 4 (Oct. 27, 2021).

Thus, the Final Scoping Plan should call for the establishment of a crypto mining registry which would allow for increased transparency between the public commenting processes and can inform other state agencies of the changes occurring in day-to-day operations. The registry could also inform NYISO and the utilities serving that additional power load about the potential strain such operations will place on the grid.⁹³ The Department of Financial Services has a registry of cryptocurrencies,⁹⁴ and a registry of proof-of-work miners could be set up in a similar way.

One important required component of the registry would be to ensure that operations that mine cryptocurrency disclose their energy sources, with specificity. Many cryptocurrency mining operations advertise the use of renewable energy to mine, without detailing the source or amount of the energy used. The public should know and would benefit from being able to ascertain how much wind, solar, coal, or other energy source, is being used for the mining of cryptocurrency by every miner.

E. The State should increase system benefit charge surcharge on high-density load customers that have established or expanded operations in New York State since the passage of the CLCPA.

In 1996, PSC established a Systems Benefit Charge (“SBC”) as a surcharge on electric bills based on volumetric use to provide funding to public policy initiatives not addressed by competitive electricity markets.⁹⁵ In 1998, PSC determined that SBC funds should be targeted to programs that support energy efficiency, research and development, and low-income energy affordability.⁹⁶ Since then, the SBC program provides funding to these programs and more as part of the Clean Energy Fund, with existing utility customers paying an average of over \$300 million per year into the Clean Energy Fund.⁹⁷ Unfortunately, the new high-energy load from proof-of-work mining operations have not paid into the system, yet is taking advantage of the low-cost clean energy resources that New York State residents and businesses have been subsidizing for over 20 years. We urge that in order to ensure that New York’s statutory climate commitments are met and that electricity and gas rates paid by customers throughout New York are just and reasonable, that PSC increase the SBC surcharge to high-intensity users that have come into operation or increased load by more than 8,760 MWh per year since the CLCPA went into effect.⁹⁸ In doing so the State should exempt high intensity uses attributable to beneficial electrification of buildings or EV charging, and may want to consider other benefits to the State such as direct jobs created per MW hour or other metrics.

⁹³ Borenstein, *supra* note 24.

⁹⁴ Department of Financial Services, *Virtual Currency Businesses: Regulated Entities*, https://www.dfs.ny.gov/virtual_currency_businesses (last visited June 16, 2022).

⁹⁵ See N.Y. Dep’t of Pub. Serv., *Systems Benefits Charge*, <https://www3.dps.ny.gov/W/PSCWeb.nsf/All/58290EDB9AE5A89085257687006F38D1> (last updated June 3, 2014).

⁹⁶ *Id.*

⁹⁷ N.Y. Pub. Serv. Comm’n, Case No.14-M-00094, *Order Authorizing the Clean Energy Fund Framework* at app. J-1 (effective Jan. 21, 2016), <https://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId={B23BE6D8-412E-4C82-BC58-9888D496D216}>.

⁹⁸ Provided by Fossil Free Tompkins. Power density limit of 8,760 MWh per year is based on a 1 MW load operating 24/7/365.

F. The CAC should encourage DEC and PSC to establish and require best management practices for high-density load energy users, including but not limited to energy efficiency requirements.

One mitigation strategy the CAC could consider is setting a minimum energy efficiency limit, set around a kilowatt-hour (kWh) per transaction or block to ensure that the methodology being used in New York State to mine blockchain/cryptocurrency is the best available technology and uses the least amount of energy, such as the proof-of-stake method, the federated consensus method, the proof-of-authority method, and the open representative voting method, among others. The efficiency limit could tighten over time to eventually eliminate proof-of-work mining.

G. The State should consider reforms for high-density-load businesses such as proof-of-work cryptocurrency mining operations.

One mitigation strategy the CAC could consider is setting a power density limit that sets a cap on the number of kilowatts of energy consumption or load per thousand square feet. A power density limit could be set at an initial limit and tightened over time to allow existing operations to adjust operations over time to mitigate their impacts.

The CAC should also consider clarifying the authority to regulate behind-the-meter power generation for high-density and high-load energy generation not in compliance with the CLCPA or not in the public interest and to incentivize proper energy regulation over a new industry that is both burning additional fossil fuels and diverting renewable energy from the State's grid.

For proof-of-work mining operations that are using energy from the State's grid, the State could ensure that ratepayers do not unduly pay higher rates due to their energy use.

Look no closer than the City of Plattsburgh for a roadmap, which instituted such a power density limit, which successfully mitigated the climate and energy impacts of mining in their municipality when rates increased significantly during the peak winter demand due to new electricity demands from crypto-mining. The New York Municipal Power Authority studied and then mitigated the ramifications of high-density load businesses and instituted several rate-payer protections.⁹⁹ The CAC should consider a study to assess the impacts that High Density Load

⁹⁹ N.Y. Pub. Serv. Comm'n, Case No. 18-E-0126, *Order Approving Rider A* (Mar. 2018) (showing that just two high density load customers with a combined demand of 11 MW caused energy costs to increase over \$200,000 for ratepayers in January, during the winter peak demand).

users, such as cryptocurrency data centers, will have on the residential rates, as seen in Plattsburgh.¹⁰⁰

The CAC should consider similar state-wide or utility-service area studies by PSC or NYISO to protect New York utility ratepayers, such as a review of location-based marginal price changes before and after proof-of-work mining operations began, and look at seasonal differences and multiple other variables, and develop rate-payer mitigation strategies.

Additionally, because some front-of-the meter proof-of-work miners can cease operations or relocate easily, thereby allowing the possibility that utility bills could go unpaid, New York State should establish a revenue assurance in the form of an upfront deposit or letter of credit to be used as a way to protect customers in the event that a high-density-load customer does not pay its utility bills.

H. The State should require high-density-load customers to purchase New York State renewable energy certificates for any site that has added more than 8760-megawatt hour per year load since the CLCPA was enacted.

Proof-of-work mining operations have clustered in the Niagara Falls/Buffalo and Massena areas where they take advantage of low-cost power. Many of these operations boast on their websites and marketing materials that they are using renewable energy, a statement that presumably attracts investors. Yet in New York State, to be able to properly claim the use of renewable energy, one must purchase Renewable Energy Credits through the New York Generation Attribute Tracking System.¹⁰¹

We urge the CAC to recommend that NYSERDA and PSC study policy mechanisms to require high-density load customers that have added more than 8,760 MWh/yr load since CLCPA's passage be required to purchase RECs on a schedule of 10% in 2023, 20% in 2024, 30% in 2025, etc. to offset their energy use by 70% by 2030 and 100% by 2040, thereby spurring renewable energy development (on the grid, not behind the meter) to offset their energy use. As mentioned above in the discussion of SBC charges, the State should exempt high intensity uses attributable to beneficial electrification of buildings or EV charging and may want to consider other benefits to the State such as direct jobs created per MW hour or other metrics.

I. The CAC should encourage that PSC and DEC establish requirements for waste heat to be recycled or used.

¹⁰⁰ An analysis by UC Berkeley's Haas School of Business found that cryptocurrency mining operations in Plattsburgh, NY were directly linked to the increase in the monthly electricity bills of small businesses by \$12 and residential customers by \$8—equivalent to \$165 million and \$79 million extra annually, respectively—with little or no economic benefit. Mateo Benetton et al., *supra* note 78; *see also* Laura Counts, *supra* note 78. In fact, at a recent congressional hearing, one witness testified offering that the utility he ran had to institute two moratoriums on new mining operations and a new rate structure to discourage miners from chasing short-term gains. Steve Wright, *supra* note 80; Corbin Hiar, *supra* note 81.

¹⁰¹ *See New York Generation Attribute Tracking System (NYGATS) Frequently Asked Questions*, NYSERDA, <https://www.nyserda.ny.gov/All-Programs/NYGATS/Renewable-Energy-Credits-Policy-Change/FAQ> (last visited June 16, 2022).

One major by-product of proof-of-work mining is the excess heat created by the energy-intensive computational efforts.¹⁰² To mitigate the heat waste, one mitigation strategy the CAC could consider is setting a minimum threshold of waste heat to be recycled or used.¹⁰³ Examples include waste heat being recycled to power a greenhouse in Norway¹⁰⁴ and supplying waste heat for residential and industrial purposes in Singapore.¹⁰⁵

J. The CAC should call for PSC and NYPA to consider requirements for public power authorities to halt all discounted energy allocations to proof-of-work mining.

The New York Power Authority offers low-cost hydropower allocations to several upstate communities that ensure economic development and a form of relief for residents to have access to a cheap, clean source of power.¹⁰⁶ The State should ensure that allocations are not diverted from residents to large-scale proof-of-work mining operations. Hydro-powered plants mining Bitcoin already exist throughout New York, including but not limited to operations in

¹⁰² Marco Streng, *How Heat From Crypto Mining Farms Could Be Recycled into Energy for Greenhouses*, NASDAQ (Dec. 23 2020), <https://www.nasdaq.com/articles/how-heat-from-crypto-mining-farms-could-be-recycled-into-energy-for-greenhouses-2020-12-23>.

¹⁰³ See Kate Marsh et al., Sabin Ctr. For Climate Change Law, *Compilation of Recommendations to Reduce Greenhouse Gas Emissions in New York State* 144 (July 30, 2020), https://climate.law.columbia.edu/sites/default/files/content/CLCPA%20Proposal%20Recommendations%20_0.pdf. Waste heat capture and reuse is needed to reduce the carbon intensity of industrial operations within the state. As Plattsburgh Mayor Colin Read suggested when discussing the growing energy demand of cryptocurrency mines in Plattsburgh, “I’d much rather see our power going to companies that are providing jobs, products or services that benefit Plattsburgh . . . [o]r tailor their industry so the waste heat they wish to dissipate can be returned to the communities which depend on that power to heat their homes.” Press Release, Adirondack N. Country Ass’n, *Boom or Bust: Economic Impacts of Cryptocurrency* (May 21, 2018), https://www.adirondack.org/sites/default/files/Press%20release_%20Cryptocurrency%20Summit.pdf.

¹⁰⁴ *Genesis Mining Announces Pilot Project*, PR Newswire (Dec. 15, 2020), <https://www.prnewswire.com/news-releases/genesis-mining-announces-pilot-project-to-recycle-crypto-mining-farm-energy-waste-into-energy-for-greenhouses-301192973.html>.

¹⁰⁵ Zhiyuan Sun, *This Singapore Tech Company Says Its Recycling 90% of Waste Heat From Bitcoin Mining*, Cointelegraph (Nov. 22, 2021), <https://cointelegraph.com/news/this-singapore-tech-company-says-its-recycling-90-of-waste-heat-from-bitcoin-mining>.

¹⁰⁶ See, e.g. PSC Tariff Rule A – allowing municipal utilities to charge higher rates to high-density load customers. NYPA, *2020 Report to the Governor and Legislative Leaders on Power Programs for Economic Development* 26–34 (April 2021), <https://www.nypa.gov/-/media/nypa/documents/document-library/governance/2020govrep.pdf>.

Mechanicville and Massena, New York.¹⁰⁷ No allocations at all should be made to any operation which is not in the local or state public interest or to any operation which is inconsistent with the CLCPA.

K. The CAC should request that all State Economic Development Agencies identify and halt all subsidies to proof-of-work mining.

State and local economic development agencies should not support proof-of-work mining operations powered by fossil fuels in the State of New York. CLCPA §§ 7(2) and 7(3) impose duties on “all state agencies, offices, authorities and divisions” to take no action that might interfere with the emissions reduction mandates of the statute without justification or disproportionately burden disadvantaged communities.¹⁰⁸ This includes funding decisions by economic development agencies that are inconsistent with or interfere with the mandates of the CLCPA.

L. The CAC should request that NYSERDA evaluate the number of jobs created per megawatt hour expended.

Economic development agencies should also evaluate the number of jobs created per megawatt hour expended. Even as cryptocurrency mining generates a flurry of climate, energy, and environmental justice issues, it offers few benefits to the local community in terms of job creation.¹⁰⁹ As outlined in a congressional memo, the number of jobs is extremely limited due to

¹⁰⁷ See, e.g., Bob Joseph, *First Look as Adam Weitsman Sets Up Owego Crypto Mining Farm*, WNBC (Dec. 20, 2021), <https://wnbf.com/adam-weitsman-sets-up-owego-crypto-mining-farm/> (finding that in Owego, Tioga County, a crypto mining farm under development plans to install 35,000 mining units that run entirely on renewable energy); NYPA, *2020 Report to the Governor and Legislative Leaders on Power Programs for Economic Development* 26–34 (April 2021), <https://www.nypa.gov/-/media/nypa/documents/document-library/governance/2020govrep.pdf> (citing that NYPA allocated 1.32 MW per year in reduced rate power to the owner of the Owego crypto mining farm, Weitsman Shredding LLC, as well as 90 MW to Somerset Operating Company LLC and 2 MW to Cayuga Operating Company LLC, which are both retired coal plants being repurposed as data center enterprises); *CleanSpark Announces Agreement with ESG-Focused Crypto-Miner*, Coinmint, PR Newswire (July 14, 2021), <https://www.prnewswire.com/news-releases/cleanspark-announces-agreement-with-esg-focused-crypto-miner-coinmint-301333316.html> (Coinmint’s facility in Massena expects to deploy nearly 25 MW of power primarily derived from hydroelectric sources); *AEC’s Hydroelectric Plant Mechanicville Repurposed for Bitcoin Mining*, Coinspeaker (July 9, 2021), <https://www.coinspeaker.com/aec-hydroelectric-plant-bitcoin-mining/>; Corey Kilgannon, *A Bitcoin Boom Fueled by Cheap Power, Empty Plants and Few Rules*, N.Y. Times (Dec. 5, 2021), <https://www.nytimes.com/2021/12/05/nyregion/bitcoin-mining-upstate-new-york.html>.

¹⁰⁸ See also ECL § 75-0101; “The public service commission, the New York state energy research and development authority, the department of health, the department of transportation, the department of state, the department of economic development, the department of agriculture and markets, the department of financial services, the office of General Services, the division of housing and community renewal, the public utility authorities established pursuant to titles 1, 1-A, 1-B, 11, 11-A, 11-B, 11-C and 11-D of article 5 of the public authorities law and any other state agency shall promulgate regulations. . . .” CLCPA § 8 (emphasis added); Michael B. Gerrard, *The Effect of New York’s New Climate Law on Municipalities: Deep but Uncertain*, 20 N.Y. Zoning Law & Practice Report 6 (2019), https://climate.law.columbia.edu/sites/default/files/content/NYZLPR_03.pdf.

¹⁰⁹ Steve Wright, *supra* note 80. (Steve Wright, former head of the Bonneville Power Administration and Chelan County Public Utility District: “we heard substantial reservations from our community about supporting cryptocurrency mining due to . . . [the] relatively low number of local jobs per unit of electricity consumed.”)

the highly automated nature of cryptocurrency mining and the limited need for skilled technicians on-site.¹¹⁰

M. The State should consider regulating electronic waste disposal in large quantities.

Proof-of-work mining results in enormous amounts of electronic waste (“e-waste”) which can cause significant harm to the environment and human health.¹¹¹ Proof-of-work mining generates approximately 31 metric kilotonnes of e-waste every year, which is comparable to the e-waste produced by the whole country of the Netherlands.¹¹² The mining devices used for proof-of-work quickly go obsolete, often lasting less than two years.¹¹³ The e-waste generated from proof-of-work mining is significant, and experts predict it will continue to increase as proof-of-work mining operations increase in scale.¹¹⁴ Much of this waste is sent to low-income communities around the state, the country, and the world who bear the harms of this toxic waste.¹¹⁵ The CAC Waste Advisory Panel should also examine these serious implications in New York from this tremendous amount of waste.

N. The State should consider regulating noise pollution.

¹¹⁰ Comm. on Energy & Com., *supra* note 16 at 9.

¹¹¹ *Id.*; See also, Megan Avakian, *E-waste: An Emerging Health Risk*, Nat’l Inst. of Env’t Health Scis. (Feb. 2014), https://www.niehs.nih.gov/research/programs/geh/geh_newsletter/2014/2/spotlight/ewaste_an_emerging_health_risk_.cfm; *Cleaning Up Electronic Waste (E-waste)*, EPA, <https://www.epa.gov/international-cooperation/cleaning-electronic-waste-e-waste> (last updated Nov. 2, 2021) (“Without proper standards and enforcement, improper practices may result in public health and environmental concerns, even in countries where processing facilities exist.”).

¹¹² BBC, *Bitcoin Mining Produces Tonnes of Waste*, (Sep. 20, 2021), <https://www.bbc.com/news/technology-58572385>; Alex de Vries & Christian Stoll, *Bitcoin’s Growing E-waste Problem*, 175 Res., Conservation & Recycling 105901 (Dec. 2021), <https://www.sciencedirect.com/science/article/pii/S0921344921005103>; *Bitcoin Electronic Waste Monitor*, Digiconomist, <https://digiconomist.net/Bitcoin-electronic-waste-monitor/> (last updated Sep. 13, 2021).

¹¹³ Joachim Klement, *Geo-Economics: The Interplay Between Geopolitics, Economics, and Investments* 106 (CFA Inst. Rsch. Found. 2021).

¹¹⁴ See Mark Peplow, *Bitcoin Poses Major Electronic-Waste Problem*, Chem. & Eng’g News (Mar. 14, 2019), <https://cen.acs.org/environment/sustainability/Bitcoin-poses-major-electronic-waste/97/i11>.

¹¹⁵ Peter Howson & Alex de Vries, *Preying on the Poor? Opportunities and Challenges for Tackling the Social and Environmental Threats of Cryptocurrencies for Vulnerable and Low-income Communities*, 84 Energy Rsch. & Soc. Sci. 102394 (2022).

Proof-of-work mining generates a tremendous amount of noise that can be heard miles from those operations.¹¹⁶ Proof-of-work mining operations typically generate noise at certain decibel levels dependent on the size of the operation. The CAC should consider measures to mitigate the noise levels from such generation and propound requirements for insulation and declining noise limits over time to give existing operations time to ramp down or reduce the noise impacts. The federal government has noise regulations in place to protect public health and welfare, and state regulations if they do not already exist should be explored to mitigate the enormous noise pollution generated by the hundreds to thousands of mining rigs set up at each location.¹¹⁷

IV. Conclusion

As crypto continues to grow, the associated surge in energy consumption to maintain proof-of-work cryptocurrency mining threatens to make the clean energy transition and meeting federal and state-level climate and environmental justice goals much more difficult, if not impossible. While the impacts of large-scale cryptocurrency operations have been mostly felt in small towns by local residents bearing the brunt of local air and water pollution, and with increased electricity costs, the consequences of allowing cryptocurrency mining operations to expand unmitigated are far too great to ignore.

The ever-increasing public health and environmental threat that cryptocurrency mining poses requires state attention and addressing. Without proper standards and the federal action, proof-of-work cryptocurrency mining will elongate the life of fossil fuels and will divert renewable energy from where it is needed most to avert the worst of the climate crisis.

Thank you for the opportunity to provide comments concerning the impacts of proof-of-work cryptocurrency mining in New York State.

Respectfully submitted,

Acadia Center
All Our Energy
Alliance for a Green Economy

Brookhaven Landfill Action and
Remediation Group
Catskill Mountainkeeper

¹¹⁶ See, e.g., Jeff Keeling, *Professor: Bitcoin Mining's Model Brings Not Just Noise, but Environmental Cost That's Under Scrutiny*, WJHL (May 18, 2021), <https://www.wjhl.com/news/local/professor-bitcoin-minings-model-brings-not-just-noise-but-environmental-cost-thats-under-scrutiny/>; Robert Houk, *Officials Press Bitcoin Company to Find a Solution to Noise Issues*, Johnson City Press (Aug. 23, 2021), https://www.johnsoncitypress.com/news/officials-press-bitcoin-company-to-find-a-solution-to-noiseissues/article_78e62c44-0434-11ec-af1c-bf43ccb2b545.html; Andy Koen, *Noise Complaint Over Crypto Mining Business Led City To Buy New Equipment*, KOAA News (July 26, 2019), <https://www.koaa.com/news/covering-colorado/noise-complaint-over-crypto-mining-business-led-city-to-buy-new-equipment>; Andy Fox, *What's That Noise? One of World's Largest Bitcoin Facilities is Too Loud, VB Neighbors Say*, Wavy (Aug. 15, 2018), <https://www.wavy.com/news/whats-that-noise-one-of-worlds-largest-bitcoin-facilities-is-too-loud-vb-neighbors-say/>; *Norway Council May Shut Down Noisy Bitcoin Miner*, The Local, (Aug. 21 2018) <https://www.thelocal.no/20180821/norway-council-may-shut-down-noisy-bitcoin-miner/>.

¹¹⁷ Noise Control Act of 1972, 42 U.S.C. § 4901–4918; Quiet Communities Act of 1978; see also Vipal Monga, *Bitcoin Mining Noise Drives Neighbors Nuts—a Giant Dentist Drill That Won't Stop*, Wall Street J. (Nov. 12, 2021), <https://www.wsj.com/articles/bitcoin-mining-noise-drives-neighbors-nuts-giant-dentist-drill-that-wont-stop-11636730904>.

Clean Air Coalition of WNY
Climate Reality Project, Capital Region NY
Chapter
Climate Reality Project, Finger Lakes
Greater Region NY Chapter
Climate Reality Project, Hudson Valley and
Catskills Chapter
Climate Reality Project, Long Island
Chapter
Climate Reality Project, NYC
Climate Reality Project, Westchester NY
Chapter
Climate Reality Project, Western New York
Chapter
Climate Solutions Accelerator of the
Genesee-Finger Lakes Region
Coalition for Outreach, Policy & Education
Committee to Preserve the Finger Lakes
Community Food Advocates
CUNY Urban Food Policy Institute
Dryden Resource Awareness Coalition
Earthjustice
Environmental Advocates NY

Fossil Free Tompkins
Gas Free Seneca
Grassroots Environmental Education
Green Education and Legal Fund
HabitatMap
Hotshot Hotwires
Long Island Progressive Coalition
Nassau Hiking & Outdoor Club
Network for a Sustainable Tomorrow
New Clinicians for Climate Action
North Brooklyn Neighbors
NY Renews
People of Albany United for Safe Energy
PUSH Buffalo
Roctricity
Sane Energy Project
Seneca Lake Guardian
Sierra Club
South Shore Audubon Society
Sustainable Finger Lakes
University Network for Human Rights
UPROSE
WE ACT for Environmental Justice



Just Transition

I. Introduction

In order to successfully reach New York’s climate mandates as outlined in the Climate Leadership and Community Protection Act (“CLCPA”), the State must prioritize a just transition not only for our disadvantaged communities (“DAC”), but also for our workers. By putting our workers at the forefront of the transition, New York can improve living standards for workers and communities, tackle racial and economic injustices, and promote economic development while reducing greenhouse gas emissions.

According to the State’s research, New York’s green workforce is expected to grow by 38%, or 189,000 net jobs, by 2030.¹ By 2050, these numbers will jump to 54% and at least 268,00 net jobs.² Although New York may lose up to 22,000 jobs in fossil fuel sectors by 2030, for every one job displaced, the State can expect to see ten new jobs in its place.³ Investing in a

¹ Just Transition Working Group, *2021 Jobs Study* 6 (2021), <https://climate.ny.gov/-/media/Project/Climate/Files/JTWG-Jobs-Report.ashx>.

² *Id.*

³ *Id.*

green economy not only helps grow the number of overall jobs in clean energy industries but will also specifically help grow middle-class jobs. In fact, the number of jobs with family-sustaining wages (between \$28-\$37 dollars per hour) is expected to increase by 6% while the proportion of low-wage jobs shrinks.⁴ Moreover, each region of New York State stands to gain new green jobs with family-sustaining wages.⁵

In addition to strengthening New York’s middle class, the growth of green jobs has the power to create an equitable, accessible, empowered green workforce that reflects the makeup of our communities. The growth of green jobs represents an opportunity to create long-term career opportunities for women, Black, Indigenous, and People of Color (“BIPOC”), justice-impacted individuals, unemployed individuals, members of disadvantaged communities, and other traditionally underrepresented groups. It will also create job opportunities for workers at all education levels at nearly equal rates,⁶ further demonstrating the potential accessibility of the green energy economy.

In order to deliver on these goals, however, the Final Scoping Plan must lay out a fulsome just transition roadmap. A robust just transition for New York State will:

- Guarantee a fossil-free future;
- Adequately support existing workers in fossil fuel-dependent industries;
- Prepare new workers for large scale growth across clean energy industries;
- Capitalize on opportunities to innovate and expand good green jobs in New York; and
- Unlock possibilities of re-prioritizing workers; and
- Remediate the legacy of structural inequities through New York’s transition to a green economy.

II. Just Transition

The just transition chapter of the Scoping Plan includes many provisions essential to delivering on a just transition for communities and a clean, green, fossil fuel free economy with high-quality union jobs accessible to all. Most notably, the just transition principles provide a framework for a transition that is collaborative, community-centered (particularly in reference to disadvantaged communities), that seeks to uplift equity, and that emphasizes the need to create

⁴ *Id.* at 8.

⁵ *Id.* at 7.

⁶ See generally Robert Pollin et al., Univ. Mass.-Amherst, *Clean Energy Investments for New York State: An Economic Framework for Promoting Climate Stabilization and Expanding Good Job Opportunities* (2017), <https://peri.umass.edu/publication/item/1026-clean-energy-investments-for-new-york-state-an-economic-framework-for-promoting-climate-stabilization-and-expanding-good-job-opportunities>.

high-quality, family-sustaining jobs across all sectors in the new green economy. Additional highlights of the chapter include the recognition of the need for accessibility in workforce and career trainings – including multi-lingual trainings, online and in-person options, and trainings at varied times – the suggestion to combine green economy workforce development with wraparound services and additional workforce trainings (e.g. OSHA or EPA trainings); the need to fund job recruitment, training, hiring, and retention for DAC, minority- and women-owned business enterprises, service-disabled veteran-owned businesses, co-ops, and employee-owned businesses; and the need to incentivize stable employment over the gig economy.

However, despite its strengths, the just transition chapter and the Draft Scoping Plan (“DSP”) as a whole lack substantive proposals to ensure that these principles are translated into the reality of New York’s transition off fossil fuels. Moreover, the DSP falls short of proposing discrete actions the State should take to ensure that existing and new workers are not only protected during this transition but benefit from it as well.

A. The Final Scoping Plan must advocate for specific protections for existing workers in fossil-fuel-dependent industries.

In order to deliver on a just transition to a fossil-free economy, New York must first and foremost commit to protecting those workers whose livelihoods are dependent on the fossil fuel industry. According to the jobs study conducted pursuant to the Climate Act, up to 22,000 jobs will be displaced in New York by 2030 due to the decommissioning of the fossil fuel industry.⁷ Job loss is expected predominantly in the following sub-sectors: Natural Gas Generation, Natural Gas Distribution, Fossil Fuel, Nuclear, Petroleum Fuels, Conventional Fueling Stations, and Vehicle Maintenance.⁸ In the Draft Scoping Plan, potential policy interventions to support displaced workers are primarily discussed under subsection “Direct Displaced Worker Support” of the just transition chapter. The recommendations focus on potential retraining opportunities for displaced workers including continuing education, registered apprenticeship programs, certifications, and licensing in trades and professions in clean energy industries. While retraining is an important part of the displacement support puzzle, our workers need more and better direct support mechanisms.

To ensure that both existing and retiring fossil fuel industry workers as well as communities dependent on the fossil fuel industry for their economic development are directly supported, the Final Scoping Plan (“FSP”) should recommend the establishment of a Workforce and Community Assurance Fund. The purpose of the fund should be to provide:

- Pension support and wage replacement for displaced fossil fuel industry workers matching their current salaries;

⁷ N.Y. Climate Action Council, *Draft Scoping Plan* (“DSP”) 50 (2021), <https://climate.ny.gov/-/media/Project/Climate/Files/Draft-Scoping-Plan.pdf>.

⁸ Robert Pollin et al., Univ. Mass.-Amherst, *Clean Energy Investments for New York State: An Economic Framework for Promoting Climate Stabilization and Expanding Good Job Opportunities* 10 (2017), <https://peri.umass.edu/publication/item/1026-clean-energy-investments-for-new-york-state-an-economic-framework-for-promoting-climate-stabilization-and-expanding-good-job-opportunities>.

- Expanded funding for lost tax base to local governments and school districts in communities reliant on fossil fuel industry for their economic development;
- Grants to communities that host fossil fuel infrastructure and/or are home to fossil fuel-dependent industries for energy and transition planning; and
- Employer decarbonization support to avoid job losses or wage and benefits cuts.

The FSP should also recommend the usage of Workforce Assessment Planning where fossil fuel plants are decommissioned. A Workforce Assessment Plan is a tool to keep impacted workers informed on job creation and losses, give impacted workers a dedicated space to contribute to the transition process, and help accommodate workers' career and retirement plans into transition planning.

Finally, for transitioning industries such as the transportation sector, the Final Scoping Plan should recommend mechanisms to preserve existing workers' rights, benefits, collective bargaining membership, and employment status.⁹ Efforts to electrify public fleets should include planning and assessment of potential workforce impacts and opportunities to mitigate those impacts.

B. The Final Scoping Plan must require strong labor standards on State-funded projects and projects that take place on State property.

As the State has committed its resources to developing renewable energy projects, labor advocates have fought hard to include labor standards on these projects. These standards include but are not limited to: provisions such as prevailing wage requirements, project labor agreements, and labor peace agreements. As the State continues the transformation to a fossil-free economy, it should strengthen its support for labor standards across the green economy, starting with the recommendations within the Scoping Plan.

Under the subheading "Evaluation of Labor Standards," current language on labor standards in the Draft Scoping Plan reads as follows: "labor standards should be further evaluated and enhanced [...] [and] [w]here appropriate, feasible, and permitted by law, project labor and community workforce agreements, as well as local and targeted hiring provisions, should be explored."¹⁰ The FSP must be much more explicit in its support of labor standards, including recommending the requirement of prevailing wage, benefits, project labor agreements ("PLA"s), local hire provisions, and community benefits agreements. In particular, under Section 224-a of New York Labor Law, prevailing wage is required on construction work and engineering consulting services for renewable energy systems, renewable heating or cooling systems, or energy storage systems equal to or greater than five megawatts. The FSP should explicitly recommend lowering this threshold to extend labor standards on a wider set of renewable energy, energy storage, and energy efficiency projects. Beyond this, the FSP should advance a recommendation to require the above-referenced labor standards on all projects

⁹ An example of such language can be found in New York Education Law § 3638(5)(a)-(b).

¹⁰ DSP at 44.

targeted to achieving CLCPA goals that receive State funding or take place on State property. Expanding the reach of labor standards in the green energy economy will be instrumental in helping raise workers' living standards, grow the labor movement, and guarantee job opportunities for disadvantaged community members.

C. The Final Scoping Plan must focus on additional opportunities to incentivize job creation in New York's clean energy economy

While the energy transition already promises to bring hundreds of thousands of new jobs to the State, there are still more opportunities for job growth that are currently under-explored in the DSP. In particular, the FSP should increase its focus on incentivizing the creation of good jobs along the manufacturing and supply chain.

The FSP must lay out specific policies for how the State can create opportunities to direct its purchasing and contracting power in a way that uses State funds to (a) incentivize job creation along the clean energy, clean transportation, and zero-carbon supply chains; and (b) prioritize high-road employers, i.e., employers that foster jobs with family-sustaining wages, benefits, and investments in employee development. These policies should include, but are not limited to, Buy American provisions and best-value procurement. Buy American provisions would require that certain clean energy, clean transportation, and/or low carbon components utilized in State-funded projects must be made, produced, and assembled in the United States. Best-value procurement is a procurement method that evaluates bids on factors outside of cost, for instance, weighing local job creation, job training for disadvantaged communities, or other additional equity and climate goals alongside cost. Recommending such policies in the FSP will allow New York State to better deliver on the just transition values laid out in its just transition chapter by intentionally supporting prevailing wage and benefits, local hiring provisions, and job access for traditionally excluded populations. Another benefit of utilizing State funding in the renewable energy transition is that it will ensure that a larger proportion of the resources put into building out New York's green energy economy are bound to the goals and mandates within the CLCPA—for instance, the goal of having 40% of funds invested into disadvantaged communities.

The FSP should also identify opportunities to conduct competitive solicitations for bulk purchasing or centralized procurement contracts for clean energy, clean transportation, or zero-carbon products. Well-designed State purchasing programs could create strong price competition while also providing incentives to manufacturers to create high-quality jobs in New York.

D. The Final Scoping Plan should outline discrete strategies the State will pursue to support workforce development.

According to the *2021 Jobs Study*, over 200,000 new workers will need to be deployed across at least 20 different sub-sectors in the electricity, fuels, buildings, and transportation sectors.¹¹ The *2021 Jobs Study* also states that: “[E]xpanding the pipeline for the growing workforce will require considerably more people than simply transitioning over those that have

¹¹Just Transition Working Group, *2021 Jobs Study* 6 (2021), <https://climate.ny.gov/-/media/Project/Climate/Files/JTWG-Jobs-Report.ashx>.

lost employment opportunities in displaced sectors.”¹² Given this massive green energy workforce expansion, the FSP should detail how the State should provide direct support through funding and additional resources for training, workforce development, apprenticeship, and pre-apprenticeship programs across sectors and subsectors. Direct support should also include mechanisms to facilitate worker attendance at existing training courses (for example, wage coverage for workers during training hours). Additionally, the FSP should include language to ensure coordination between the State and cities, counties, transit agencies, or other public bodies that support workforce development to guarantee these programs are adequately supported and attended. It should also include language encouraging such entities to adopt the use of employment plans that map out projected job creation, job displacement, skills gaps, and retraining needs/opportunities for transitioning sectors.

**E. The Final Scoping Plan should expand the scope of workers who are
focalized in just transition materials put forth by the State.**

The workforce composition of many different sectors of New York’s economy are predicted to shift as the State transitions. This will include intra-sector growth and displacement. As an example, under the electricity sector, while the workforce in sub-sectors—including solar, offshore and onshore wind, hydropower, hydrogen, distribution, biomass, transmission, and storage—is expected to grow, that in sub-sectors such as natural gas and fossil fuel is expected to shrink.¹³ As currently written, the DSP focuses primarily on support for displaced workers in fossil fuel energy generation. While determining how to support workers directly employed by the fossil fuel industry is essential, this emphasis is not reflective of the full range of workers facing potential displacement as the State transitions to a green economy. To adequately address these complexities, the FSP should expand its focus on just transition to address the entirety of shifting workforce dynamics, exploring job impacts and opportunities in all sectors both within Chapter 7 and throughout the FSP as a whole.

III. Sector-by-Sector Just Transition Analysis

A. Transportation

New York State is a transportation hub for the U.S. It is the largest producer of transit industry equipment, contributing \$3.6 billion in economic impact and employing over 20,000 individuals.¹⁴ New York is also home to the nation's largest transit agency: The Metropolitan Transportation Authority-New York City Transit.¹⁵ Given this context, New York is well-positioned to become a hub of electrical vehicle manufacturing—specifically electric buses—as well as leading the way on expanding and decarbonizing public transportation.

¹² *Id.*

¹³ *Id.*

¹⁴ *Transportation Equipment: The Transportation Equipment Industry Is Moving Forward in New York State*, N.Y. State Empire State Dev., <https://esd.ny.gov/industries/transportation-equipment> (last visited May 16, 2022).

¹⁵ Am. Pub. Transp. Ass’n, *2021 Public Transportation Fact Book* 32 (72nd ed. 2021), <https://www.apta.com/wp-content/uploads/APTA-2021-Fact-Book.pdf>.

As the State dramatically increases the adoption of zero-emission vehicles (“ZEV”s) and equipment, it must guarantee that workers that manufacture, sell, operate, and maintain vehicle fleets statewide have access to the relevant job retraining, certifications, and workforce development to transition from fossil fuel technologies to zero-emission technologies. This will help to ensure job security for the existing transportation workforce. In addition to preserving existing jobs, the FSP should acknowledge and uplift this opportunity to incentivize job creation along the ZEV manufacturing and supply chain for passenger vehicles, medium- and heavy-duty vehicles, and non-road equipment. Importantly, research suggests that new jobs added associated with ZEV adoption—especially those jobs in electrical component manufacturing and charging infrastructure—will have nearly twice the average wages of displaced jobs in the transportation sector.¹⁶ The FSP should therefore propose incentives for high-roads manufacturers and businesses in ZEV manufacturing and supply chain industries to bring their operations to New York.

Where the FSP provides recommendations for transitioning public transit fleets, it should identify intervention points where the State can (a) drive the adoption of ZEVs at the county and municipal level; and (b) protect existing jobs and support the development of new jobs. For instance, the FSP should direct the State to require public transit systems that receive operating assistance from the State to purchase only zero-emission vehicles using a best-value contracting framework by 2029. Alongside cost, this framework should weigh worker wages, benefits, and safety; the usage of (re)training and apprenticeship programs; climate goals; and community benefits agreements. Moreover, for those same public transit systems, the FSP should recommend that the State require the creation and implementation of workforce development reports that forecast potential jobs creation and displacement from the transition to a zero-emission fleet, identify workers’ skills gaps, and include a comprehensive (re)training plan for impacted employees in order to receive operating assistance monies.

When discussing strategies to support both public and private sector fleet transition, the FSP should also reference Buy NY provisions as a mechanism to maximize job creation in the clean transportation sector. In instances where the FSP recommends the establishment of public programs or public funding/financing mechanisms to support ZEV deployment—such as investing in ZEV charging or fueling infrastructure—these programs, funding opportunities, incentives, and/or subsidies should come with attached labor standards including prevailing wage, benefits, and project labor agreements (“PLAs”). Moreover, the FSP should include language that prioritizes the rollout of State resources to support fleet transition where they will provide the highest benefit to environmental justice communities as well as the highest labor benefits.

Finally, the FSP should include specific reference to the impact of the expansion of e-commerce mega warehouses on the State’s transportation emissions. Within this, the FSP should recommend that community benefits agreements be required where e-commerce mega warehouses are constructed or expanded and include language to limit the expansion of such

¹⁶ Dana Lowell et al., M.J. Bradley & Associates, *New York Clean Trucks Program: An Analysis of the Impacts of Zero-Emission Medium- and Heavy-Duty Trucks on the Environment, Public Health, Industry, and the Economy* 5 (2021), https://www.mjbradley.com/sites/default/files/NY_Clean_Trucks_Report.pdf.

warehouses in disadvantaged communities.

i. T4. Customer Convenience and Service Connectivity

Under this strategy, the Final Scoping Plan should integrate the Climate Justice Working Group’s (“CJWG”) recommendations into “Components of the Strategy” by recommending that the state explore measures to: to (a) hire members of disadvantaged communities in transit manufacturing by offering a credit to manufacturers for setting aside a proportion of jobs for them; and (b) utilize the expansion of public transit services as an opportunity to expand family-sustaining union jobs and opportunities for DAC.

B. Buildings

i. B4. Scale Up Public Financial Incentives

Under the strategy “Support community-scale solutions and community thermal systems,” the Final Scoping Plan should direct the State to explore mechanisms to leverage the aggregated nature of community-scale solutions and community thermal systems to support labor standards on non-utility-scale clean energy projects. It should also separate these two components and include stronger language on support for community thermal systems as these systems may provide an important jobs-creation mechanism for workers in the pipe trades currently employed by fossil fuel industries.

Additionally, under the strategy “Prioritize energy upgrades and resilience in public housing,” the FSP should enumerate specific policies that will uplift workforce training initiatives targeting public housing residents, including apprenticeship and pre-apprenticeship programs. This will help to build a pipeline of talent to be deployed in the green energy economy while also promising pathways to high-quality career employment to members of DACs. A recent report from the Worker Institute at the Cornell Industrial and Labor Relations School cites an apprenticeship established by District Council 9 of the International Union of Painters and Allied Trades that provides a career pipeline into union painting specifically tailored for New York City Housing Authority residents.¹⁷ This program could serve as a statewide model and should be uplifted in the FSP.

ii. B9. Support Innovation

The FSP should make explicit reference to the need to give unions access to funding and/or additional resources needed to train workers on any new construction approaches or manufacturing methods transferred to and/or developed for the buildings sector to increase building resilience, facilitate grid-interactivity, and support building decarbonization solutions.

iii. B10. Reduce Embodied Carbon from Building Construction

When developing procurement specifications to help drive carbon reductions on State-funded new construction projects, the FSP should integrate best-value procurement and Buy NY standards into these procurement specifications. This will help support the development of high-

¹⁷ Lara Skinner et al., Cornell Univ., *Climate for Change: A Climate Jobs Roadmap for New York City 9* (2022), <https://ecommons.cornell.edu/handle/1813/110948>.

roads jobs along the low-carbon building construction supply chain while simultaneously reducing embodied carbon in construction.

C. Electricity

i. E1. Retirement of Fossil Fuel Fire Facilities

The decommissioning of the State’s fossil fuel infrastructure will be one of, if not the primary, driver of any job displacement under a transition to a clean energy economy. As such, the principles of a just transition, as well as specific policy mechanisms to support a just transition, must take primacy in this strategy. Under resource planning, in outlining the steps needed to address the impacts on communities and workers, the FSP should include two key mechanisms outlined in Section II Subsection A of this document: the need for Workforce Assessment Planning in the process of retiring facilities and the establishment of a Worker and Community Assurance Fund to directly support displaced fossil-fuel industry workers and communities dependent on the fossil fuel industry for their economic development.

ii. E3. Facilitate Distributed Generation/ Distributed Energy Resources

Currently, the State’s support of robust labor standards in renewable energy development is largely limited to utility-scale projects.¹⁸ As the State explores mechanisms to facilitate the development of distributed energy generation and distributed energy resources, it must also determine leverage points to facilitate the creation of high-quality union jobs in these subsectors.

iii. E4. Deploy Existing Storage Technologies

In providing increased funding for energy storage deployment and in addition to prioritizing funding for projects in frontline communities, the FSP should explicitly reference that funding mechanisms developed by the State should come with attached labor standards. These should include prevailing wages and benefits for workers as well as PLAs and labor peace agreements where possible.

iv. E7. Invest in Transmission and Distribution Infrastructure Upgrades

Under the “Renewable Energy Zones” component, in creating a database to track the penetration of renewable energy in the state, the FSP should specify that the State should also track job creation from said renewable energy development. Moreover, the FSP should add a step to its outlined process to capture the jobs creation potential within each zone should the State pursue the establishment of Renewable Energy Zones.

v. E10. Explore Technology Solutions

Finally, under Nuclear Generation, when evaluating the contribution of nuclear power to the 2040 energy mix, the Scoping Plan must also include language that will require the State to adequately consider and plan for the potential jobs impacts and worker transition needs alongside resource needs.

¹⁸ See Section II Subsection B at 4 of these comments.

D. Industry

i. 12. Low-Carbon Procurement

The FSP should integrate the CJWG’s recommendation of implementing best-value procurement into the language regarding “Provide[ing] policy support” included in the DSP. Key elements of a low-carbon, best-value procurement framework as outlined by the CJWG include weighing climate mitigation efforts as well as exploring workforce, training, local hire, and apprenticeship programs targeted to residents in DACs.

ii. 13. Workforce Development

Under this strategy, the FSP should include components that address the need for the State to directly support workforce development. This includes, but is not limited to, funding opportunities for workforce development and training, including apprenticeship and pre-apprenticeship programs. State-provided workforce development funding should include additional assistance for minority and women-owned business enterprises, service-disabled veteran-owned businesses, and training organizations that target traditionally excluded populations as well as displaced workers.

iii. 16. Economic Incentives

When offering incentives, the FSP should include language to encourage the provision of additional incentives to companies that adopt local hiring benchmarks when bringing operations to New York State. These incentives could include tax credits or the opportunity to participate in ReCharge NY.

E. Waste

i. W1. Organic Waste Reduction and Recycling and W2. Waste Reduction, Reuse, and Recycling

As the FSP outlines the contraction and transformation of New York’s waste system, it should include components of this strategy that take into consideration (a) how waste reduction will impact workers in the waste sector; and (b) how best to support workers as they adapt to the changing needs of this sector. Under workforce development, the FSP should reference the need for training and trade skills for workers in the waste sector who will have to learn how to maintain and operate zero-emission waste haulers. The FSP should also specify the need to fund or directly provide resources to support apprenticeship and pre-apprenticeship programs in workforce development.

ii. W8. Recycling Markets

As the New York State Department of Environmental Conservation and the New York State Office of General Services work to incorporate recyclables requirements into the State’s green procurement programs, the FSP should include language to incentivize the creation of high-roads manufacturing and supply chain jobs in New York’s recyclables market.

F. Gas Transition

The strategies put forth in the FSP’s chapter on New York’s gas transition will have considerable implications for the existing fossil fuel workforce. As such, the FSP should provide a more robust explanation of what a just transition for the gas system transition looks like. In its current iteration, in lieu of specific steps the State should take to ensure workers are adequately considered and protected throughout this process, the DSP makes only a passing reference to just transition, noting: “[t]he transition away from fossil gas should be carefully managed, phased, and conducted with a focus on just transition principles”.¹⁹ Therefore, under the Advisory Panels’ recommendation regarding “Inclusion of LMI and the gas industry workforce,” the FSP should incorporate the following components that are necessary yet absent in the plan’s current form:

- Methodologies to meaningfully engage the gas industry workforce throughout the transition, including worker assessment plans to understand the status of existing workers in terms of retirement and career planning, in order to ease the workforce transition; and
- A detailed explanation of what “protections”²⁰ for the gas industry workforce should be under an equitable transition plan, including protections for worker wages, benefits, and pensions.

IV. Conclusion

New York’s just transition as put forth by the Final Scoping Plan has the ability, if done correctly, to fundamentally reshape New York’s relationship to its workers. As it stands, the DSP has far to go to lay out an adequate roadmap to achieve the just transition goals. The FSP must do more to support workers and their rights, for instance, by requiring labor standards on projects receiving State funding or taking place on State property and by protecting existing workers employed in the fossil fuel industry or facing displacement. Beyond protecting and empowering both existing and new workers, the FSP must lay out direct pathways for the State to support workforce development efforts while exploring additional mechanisms to incentivize the creation of high paying jobs with benefits and protections across the green economy. And, finally, across each sector chapter, the FSP must lay out specific components within listed strategies that will support a just transition. By implementing the above recommendations, New York can lead the nation in embodying a truly just, worker- and community-led transition to a clean energy, fossil-free future.

Respectfully submitted,

Acadia Center
All Our Energy
Alliance for a Greater New York

Alliance for a Green Economy
Brookhaven Landfill Action and
Remediation Group

¹⁹ DSP at 266.

²⁰ DSP at 268.

Catskill Mountain Keeper	Gas Free Seneca
Clean Air Coalition of WNY	Green Education and Legal Fund
Climate Reality Project, Capital Region NY Chapter	GreenLatinos
Climate Reality Project, Finger Lakes Greater Region NY Chapter	HabitatMap
Climate Reality Project, Hudson Valley and Catskills Chapter	Hotshot Hotwires
Climate Reality Project, Long Island Chapter	Jobs to Move America
Climate Reality Project, NYC	Long Island Progressive Coalition
Climate Reality Project, Westchester NY Chapter	Nassau Hiking & Outdoor Club
Climate Reality Project, Western New York Chapter	Network for a Sustainable Tomorrow
Climate Solutions Accelerator of the Genesee-Finger Lakes Region	New Clinicians for Climate Action
Committee to Preserve the Finger Lakes	North Brooklyn Neighbors
Community Food Advocates	NY Renews
CUNY Urban Food Policy Institute	People of Albany United for Safe Energy
Earthjustice	Push Buffalo
Environmental Advocates NY	Roctricity
E2 (Environmental Entrepreneurs)	Sane Energy Project
Fossil Free Tompkins	Seneca Lake Guardian
	South Shore Audubon Society
	Sustainable Finger Lakes
	Tri-State Transportation Campaign
	University Network for Human Rights
	UPROSE
	WE ACT for Environmental Justice



Land Use and Local Government

I. Introduction

The Land Use and Local Government chapters in the Drafting Scoping Plan (“DSP”) put forth strategies that are substantive, well-developed, and for the most part in alignment with the advisory panel recommendations. The leadership and decisions of local governments will play a key role in determining how successful we are in achieving the goals of the Climate Leadership and Community Protection Act (“CLCPA”). While we support many of the recommendations in the DSP, we include some suggestions below.

Commenters are concerned that many of the DSP recommendations appear to rest on the assumption that mitigation and adaptation goals must be achieved through new development, including in disadvantaged communities (“DACs”). The Final Scoping Plan (“FSP”) should highlight the need for investments in DACs to address climate and environmental justice concerns—including air pollution, extreme heat, and flooding—through targeted strategies as development occurs, rather than relying on development for solutions. Additionally, the FSP must recognize and acknowledge the differences in needs among rural, suburban, and urban areas. Smart growth and Transit-Oriented development (“TOD”) solutions need to be contextual, as there are no one-size-fits-all solutions; for example, cities with significant policymaking capacity might require less streamlining than smaller towns that need more technical assistance.

It is critical that the State partner with local governments and local community-based organizations in developing programs, providing technical assistance, and streamlining funding and permitting processes to achieve the CLCPA mandates. For example, the DSP discusses the creation of a Clean Energy Community Dashboard (LG1).¹ This and other resources that will be created should be arrived at by working closely with local community-based organizations that might already be doing some of this work. It is also imperative that these resources are easily accessible to all stakeholders. Members of DACs should be engaged in the planning and implementation of projects in their communities, with a process that prioritizes community-centered visions.

Additionally, the DSP recommends (LU9) that State agencies increase coordination with Regional Economic Development Councils (“REDCs”) to align REDC regional strategic plans with smart growth and equity principles.² To further this recommendation, local governance structures and appointments to the REDCs need to be reformed to diversify these bodies to adequately reflect the DACs and other communities that will be affected by their decisions.

II. TOD/E-TOD and Smart Growth

The DSP misses an opportunity to promote sustainable and resilient industrial development in compliance with the CLCPA’s commitment to equity and a just transition. Transit Oriented Development/Equitable Transit Oriented Development (“TOD/E-TOD”) and smart growth strategies tend to focus on increasing commercial and residential density as well as introducing transit options like rail and bus in areas that can accommodate additional growth.³ However, growth can be problematic for certain DACs in denser areas, and can lead to gentrification and displacement. The definition of TOD/E-TOD needs to prepare communities for a just transition, rather than simply striving for development and growth, while also addressing other needs of the community that may not be specifically related to growth.

TOD often offers the opportunity to address problems by creating density in places that have existing transit infrastructure. However, a DAC might not necessarily need additional density to address certain climate or environmental issues. Rather, their concerns might be addressed immediately through dedicated funds marked for DACs. These investments could include but not be limited to: energy efficiency upgrades to buildings, renewable energy generation and storage, increased green infrastructure to bolster resiliency, and reduction of emissions from local pollution sources.

To incorporate these principles, we recommend amending the definition of “smart growth” to include the following language: “Land use development that mixes diverse building types and land uses to create affordable housing, transportation, education and healthcare infrastructure, among others, but is not limited to the planning and implementation of new commercial or residential development.”⁴ Smart growth must address industrial development, as

¹ See N.Y. Climate Action Council, *Draft Scoping Plan* (“DSP”), 303–04 (2021), <https://climate.ny.gov/-/media/Project/Climate/Files/Draft-Scoping-Plan.pdf>.

² DSP at 294.

³ DSP at 272.

⁴ See Comments by Priya Mulgaonkar & Juan Camilo Osorio on the Recommendations Prepared by the Land Use and Local Government Panel to the Climate Action Council (Apr. 19, 2021) (on file with author).

well as other infrastructure and programming to guarantee climate justice and a just transition. The definition should also include the investment of technical and financial resources to address equity, environmental, and climate justice issues in DACs as well as the inclusion of members of DACs in the planning and implementation of all climate change adaptation and mitigation efforts in their neighborhoods.

Commenters appreciate that the DSP acknowledges the need to “[e]nsure equitable development while avoiding displacement and gentrification.”⁵ However, we urge the Climate Action Council (“CAC”) in the FSP to include explicit language about the unintended consequences, including gentrification, of traditional approaches to smart growth practices. For example, the CAC should make the recommendation that State funds cannot be used by developers to invest in building features or amenities that are marketed as green, but can be leveraged to increase rents or displace long-time and/or low-income tenants.

Additionally, commenters urge the CAC to include in the FSP specific recommendations for model law to address local climate and environmental issues. For example, the DSP acknowledges that “[u]rban and community forest cover is declining by about 6,720 acres annually.”⁶ To mitigate the effects of air pollution, stormwater runoff, and extreme heat—which are exacerbated by the urban heat island effect—solutions such as increasing tree canopy coverage, increasing green space, and building green infrastructure including bioswales and rain gardens should be considered and incentivized.⁷

III. Disadvantaged Communities

The FSP recommendations must specifically address climate justice issues in frontline communities that have long faced multiple burdens and that are often the first and worst to get hit by climate disasters.⁸ The FSP should include land use strategies that prioritize CLCPA investments in DACs in order to repair the disparate impacts of climate change and to address just transition priorities—not only to increase smart growth development. Strategies must explicitly incorporate the legislation’s mandate to “prioritize reductions of greenhouse gas emissions and co-pollutants in disadvantaged communities.”⁹ Therefore, mitigation strategies should equally balance multiple priorities to address the need for pollution prevention, green infrastructure, open spaces, and reduction of co-pollutants in DACs.

The DSP lays out strategies to enable resources and policies to support further and sustained development of local land use plans. These efforts should be led in collaboration with local community-based organizations. Further, we urge the CAC to call for the creation of a new “Climate Justice Through Community Planning and Action” grant program to fund the implementation of local land use plans created by DACs to achieve CLCPA goals to reduce emissions, adapt vulnerable areas, and guarantee just transition priorities. This grant would finance local capacity building in DACs to strengthen the review of proposals and participation

⁵ DSP at 297.

⁶ DSP at 280.

⁷ Smart Surfaces Coalition, <https://smartsurfacescoalition.org/> (last visited May 24, 2022).

⁸ See, e.g., EPA. 2021. Climate Change and Social Vulnerability in the United States: A Focus on Six Impacts. U.S. Environmental Protection Agency, EPA 430-R-21-003.

⁹ CLCPA § 7(3).

in the planning and project review process. UPROSE's Green Resilient Industrial District (GRID) is one example of community-led land use planning.¹⁰

IV. High Density Urban Areas

The FSP should have explicit strategies to prioritize mitigation and adaptation investments in high density urban areas where there might not be existing infrastructure to facilitate TOD, but where communities require immediate attention given historic disinvestment and environmental justice issues. These new strategies need not be limited to TOD, and should address the specific concerns of other higher density urban areas that are already examples of TOD (since they already have good transit access) but may have other needs. For example, recommendations should address an update of the Department of State Coastal Management Program to require the reduction of truck traffic in working waterfronts in and around environmental justice areas where barging, rail, and alternate vehicles can be used to reduce emissions and improve local air quality.

V. Aligning Local Zoning Codes with Climate and Equity Mandates

Commenters appreciate the DSP's recognition that local zoning can often frustrate achievement of the CLCPA's emission limits and equity mandates, but urge the Council to expand the analysis and scope of recommendations in the FSP. For example, land use strategy LU10, "Direct planning, zoning, and pre-development assistance to municipalities," is expressly limited to "empower[ing] local governments to achieve smart growth planning and development."¹¹ The focus strictly on smart growth limits this recommendation's effectiveness.

The FSP should call for the State to provide technical support and develop model laws to affirmatively identify and ameliorate local policies that contradict State climate and environmental policy, whether or not they are related to smart growth. For example, in New York City and many communities throughout the State, e-commerce mega-warehouses are permitted as of right, and thus exempted from environmental review. This development can occur in spite of the fact that such facilities can attract thousands of vehicle trips per day and increase co-pollutant emissions by hundreds of tons per year, often in or near DACs and overburdened communities. The State must identify ways to harmonize local policies, including those not directly related to the environment, with the CLCPA.

Furthermore, commenters call on the Council to recommend that all municipalities and local governments develop Climate and Air Quality plans that are consistent with the CLCPA's emission limits and equity provisions, and that the State provide resources and support for such plans.

VI. Other Concerns

Commenters are also concerned about the following components of strategies recommended in the Land Use and Local Government Chapters of the DSP.

¹⁰ *The Green Resilient Industrial District*, UPROSE, <https://www.uprose.org/the-grid> (last visited June 13, 2022).

¹¹ DSP at 295.

*LUI: Require participation in carbon markets*¹²

Environmental justice communities have long held a deep skepticism of market-based solutions to climate issues, such as carbon markets. The FSP should be cautious of the failures of past market-based approaches to regulating pollution, especially those that allow offsets. As noted by the Climate Justice Working Group (“CJWG”), environmental justice communities have historically not benefited from offset market-based policies even though they are the most burdened by pollution-generating facilities.¹³

As described in our comments related to AF6 in the Agriculture and Forestry Chapter, forest carbon sequestration should not be used to allow fossil fuel emissions from other sectors to persist, as proposed in the development of a forest carbon market. Fossil fuel polluters should not be allowed to circumvent their responsibility to curb direct emissions by claiming to offset them by purchasing impermanent carbon gains elsewhere.

Offset schemes seek to avoid accountability for direct emissions of greenhouse gases with uncertain, imprecise, and difficult-to-monitor supposed increases in carbon stocks elsewhere. Offset-based schemes are premised on a scientific fallacy that equates increases in carbon stocks in forest soils and vegetation with past and ongoing losses of fossil carbon. However, these are not at all equivalent. It is critical to note that climate change is primarily attributed to the removal of large amounts of *fossil* carbon, which would have remained sequestered in the absence of anthropogenic activities. In contrast to these slow-cycling fossil stocks, carbon in biogenic pools including vegetation and soils in New York forests is inherently impermanent and perpetually vulnerable to decomposition. When carbon sequestered in soils and vegetation undergoes decomposition, as it does naturally, it may return to the atmosphere on relatively short timescales (in contrast to more inert fossil carbon stocks). As a result, “credits” offsetting fossil fuel emissions are essentially rendered meaningless. Carbon sequestration rates in New York state should be restored and accelerated (for example, through reforestation) with independent reductions of fossil fuel emissions. Offsets should not be allowed to delay irreversible losses of fossil carbon.

The Final Scoping Plan should take heed of the failures of past offset market-based approaches to regulating pollution. For example, one leading study found that California’s cap-and-trade policy, which represents a market scheme that permits offsets, has exacerbated environmental injustice. An analysis of the program found that (1) regulated facilities were disproportionately sited in environmental justice neighborhoods, (2) most of the regulated facilities increased emissions of both GHGs and co-pollutants during the time period studied, and (3) neighborhoods that experienced increases in both annual average GHGs and annual average co-pollutants were more likely to be environmental justice neighborhoods.¹⁴ The use of offsets allowed regulated facilities to keep polluting (and degrading local air quality) by purchasing

¹² DSP at 277.

¹³ DSP Appendix B: CJWG Feedback on Advisory Panel Recommendations at slide 4 (June 28, 2021), <https://climate.ny.gov/-/media/Project/Climate/Files/Draft-Scoping-Plan-Appendix-B.pdf>.

¹⁴ See Lara Cushing et al., *Carbon trading, Co-pollutants, and Environmental Equity: Evidence from California’s Cap-and-Trade Program (2011–2015)*, 15 PLoS Med. e1002604 (2018).

offsets from projects largely out-of-state that provided no benefit to frontline communities.¹⁵ To avoid replicating these harms, the FSP must consider non-GHG co-pollutants and local environmental impacts to environmental justice communities and thus avoid offering New York forests as an opportunity to offset fossil fuel emissions.

There is simply no substitute for directly reducing fossil fuel emissions. Such reductions are critical to achieving climate targets as well as environmental justice goals as pollution hotspots disproportionately burden low-income communities and communities of color. The FSP should not support accounting that allows avoidable ongoing fossil fuel emissions to persist based on forest carbon sequestration.

With the exception of the carbon markets recommendation discussed above, in our view, the Land Use Chapter's forestry-related recommendations are superior to those provided by the Forestry and Agriculture Chapter. The Land Use Chapter focuses on conservation and reforestation, in contrast to the Forestry and Agriculture Chapter's focus on forestry management and forest crop production. This internal inconsistency is contradictory. The FSP should include strategies that focus on conservation and reforestation rather than maintain the conflicting recommendations in the Agriculture and Forestry chapter, which focus on maintaining the profitability of the forestry industry.

*LU3: Avoid Agricultural and Forested Land Conversion*¹⁶

While we support strategies to avoid forested land conversion and increase support for historically underserved farmers as described under LU3, the FSP should more clearly distinguish between strategies to preserve forestland and strategies to prevent farmland conversion. Protecting forestland should be prioritized for climate benefits, while additional guardrails should be required for any strategies related to farmlands in order to prevent cropland expansion and to ensure that existing croplands are managed in ways that maximize climate benefits. Improperly managed, farmlands can further contribute to climate change and weaken carbon sequestration. The FSP should include strategies to ensure that practices on existing croplands do not lead to losses of soil organic carbon or have other negative impacts on climate and carbon cycling. For example, the FSP should include strategies that incentivize or require the adoption of agro-ecological practices such as riparian buffers, cover crops, agroforestry, or managed rotational grazing to restore losses of soil carbon on existing croplands. Additionally, the DSP notes "quantification of No Net Loss" as an area of research for DEC and AGM to evaluate.¹⁷ However, the FSP must prioritize conservation of existing forests and native vegetation over farmland expansion and must not treat these land uses as substitutable or replaceable through net accounting.

*LG5: Prioritize methane recovery*¹⁸

¹⁵ *Id.*

¹⁶ DSP at 281.

¹⁷ DSP at 282.

¹⁸ DSP at 307.

Methane recovery should only be used for on-site energy production. Commenters oppose the use of biomethane or biogas in the existing natural gas system and any proposal to use biogas via anaerobic digesters for heating buildings. As noted in the DSP, the CJWG recommended that “caution should be taken to avoid biogas use intentionally or inadvertently leading to the extended use of fossil fuels.”¹⁹ Any energy generated from biogas through anaerobic digestion should be used only on-site (for example, providing power to the wastewater treatment plant that is home to the digester).

*LG5: Support fleet electrification*²⁰

As discussed in the Transportation chapter, the FSP should include enforceable, tangible, and specific policies with respect to State support for municipal, county, and school district fleet electrification. Local government strategy LG5 is much too tentative, recommending only that NYSERDA and DEC “support” local fleet electrification. The FSP should include specific goals and call for financial and technical support to ensure local government fleets are leading the way on zero emission vehicle adoption—for passenger vehicle and medium- and heavy-duty vehicles—to match the pace of electrification called for by any CLCPA-compliant mitigation scenario.

VII. Conclusion

The Land Use and Local Government Chapters of the FSP Should:

- Recognize that DACs need climate-related investments immediately, and that some DACs might not be served by TOD.
- Recognize that different communities will require different types of support, and that local governments and community-based organizations must be involved in decision-making.
- Call for the creation of a new “Climate Justice Through Community Planning and Action” grant program to fund the implementation of local land use plans created by DACs.
- Reject participation in carbon markets.
- Reject the use of biomethane and biogas except for limited on-site usage.

Respectfully submitted,

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Clean Air Coalition of WNY
Climate Reality Project, Capital Region NY
Chapter

Climate Reality Project, Finger Lakes
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Catskills Chapter
Climate Reality Project, Long Island
Chapter
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¹⁹ DSP at 250.

²⁰ DSP at 307.

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Climate Reality Project, Western New York
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Climate Solutions Accelerator of the
Genesee-Finger Lakes Region
Catskill Mountainkeeper
Committee to Preserve the Finger Lakes
Community Food Advocates
CUNY Urban Food Policy Institute
Earthjustice
Environmental Advocates NY
Fossil Free Tompkins
Gas Free Seneca
Grassroots Environmental Education
Green Education and Legal Fund
HabitatMap
Hotshot Hotwires
Long Island Progressive Coalition

Nassau Hiking & Outdoor Club
Network for a Sustainable Tomorrow
New Clinicians for Climate Action
New York City Environmental Justice
Alliance
North Brooklyn Neighbors
NY Renews
People of Albany United for Safe Energy
PUSH Buffalo
Riverkeeper Inc.
Roctricity
Seneca Lake Guardian
Sierra Club
South Shore Audubon Society
Sustainable Finger Lakes
University Network for Human Rights
UPROSE
WE ACT for Environmental Justice



Public Health

I. Introduction

The Public Health Chapter of the Draft Scoping Plan (“DSP”) addresses the wide range of disparities and impacts, both direct and indirect, that climate change creates with respect to health and safety within communities.¹ Commenters submit this overview of key health issues, which are also addressed in more detail throughout our comments on specific sectors.

The Public Health Chapter repeatedly emphasizes the disproportionate health burdens placed upon communities of color and low- and moderate-income (“LMI”) communities and households.² The ongoing COVID-19 pandemic has made these social and economic inequalities even more evident. The DSP highlights various existing programs that have successfully improved air quality by regulating air emissions. However, these approaches are not sufficient to achieve the health equity needed—not only with respect to physical health, but also, mental and social well-being. While the public health section seems to downplay the more immediate health

¹ DSP at 53.

² DSP at 54–56.

impacts of climate change,³ as climate change worsens so will the health and welfare of many communities.

As noted in the DSP, the Department of Health has acknowledged the most direct health impacts of climate change.⁴ Some of these conditions include, but are not limited to, increased heat stress, exacerbation of respiratory conditions, increased risk of food and water borne disease, increased risk of infectious disease, increased severity and duration of allergy symptoms, and increased risk of injury and death due to extreme precipitation.⁵ Continued sea level rise will intensify superstorms, which could result in more saltwater intrusion that leads to food and water contamination; increased moisture inside homes, which can lead to mold; and impacts on food security within low-income communities.⁶

The DSP acknowledges that, within New York State, race and income have been clearly linked to health disparities related to heart disease, hospitalization rates for asthma, and diabetes.⁷ The primary components comprising these risks stem from air pollution: ozone, sulfur dioxide, nitrogen oxides, and particulate matter. Carbon-based fuel combustion also directly emits greenhouse gases, VOCs, and carbon monoxide, which are also associated with a range of adverse health outcomes. These pollutants can contribute to respiratory effects, morbidity, mortality, cardiovascular effects, and cancer.

II. Maximizing Public Health Benefits Requires Minimizing False Solutions

Unfortunately, parts of the DSP oppose efforts to move away from emitting fuels by supporting false solutions such as the combustion of green hydrogen, waste incineration, and carbon capture technologies (which remain unproven). In order to truly combat the detrimental health disparities from pollution, the Climate Action Council (“CAC”) must take a stronger stance by rejecting these false solutions. The Final Scoping Plan (“FSP”) should contain detailed public health guidelines to track and measure desired improvements in health. Not only will this show the seriousness with which New York State is acting to protect our residents, but it will also help keep the State accountable to its equity, public health, and climate commitments enshrined in law.

III. Integrating Public Health into Mitigation Strategies

³ See DSP at 53.

⁴ N.Y. State Dep’t of Health, *Building Resilience Against Climate Effects (BRACE) in New York State* (2015), <https://www.health.ny.gov/environmental/weather/docs/climatehealthprofile6-2015.pdf>.

⁵ *Id.*; Kristie L. Ebi et al., *Fourth National Climate Assessment: Impacts, Risks, and Adaptation in the United States* ch.14: Human Health, 572–603 (David D’Onofrio, U.S. Glob. Change Rsch. Program ed., 2nd vol. 2018).

⁶ U.S. Dep’t of Agric. *Climate Change, Global Food Security, and the U.S. Food System* (2015), <https://www.usda.gov/sites/default/files/documents/FullAssessment.pdf>.

⁷ DSP at 54–55.

Many of the CAC’s recommendations could be strengthened by more squarely addressing the public health dimension of electrification and energy efficiency programs. For example, the DSP identifies priority strategies to equitably distribute energy efficiency programs and building electrification technologies. To make these recommendations stronger, the FSP should incorporate targets to identify energy inefficient and polluted homes to ensure that residents most at risk from the current fossil fuel-based energy system can more readily participate in the proposed programs.

As discussed in comments on the Buildings Chapter, as a first step in implementing an equitable energy efficiency and building decarbonization strategy, we recommend that the State develop a tool to direct green investments and benefits to disadvantaged communities (“DACs”) in line with the equitable investment mandate in the CLCPA. *See* ECL § 75-0117. This tool should be executed quickly to ensure an equitable transition and incorporate the interim (and then final) criteria and maps for disadvantaged communities, identify who has been helped and by which program, and include annual goals. The tool should include specific milestones or benchmarks to ensure that investments are continually reaching DACs and LMI households at the pace needed to meet the Climate Act mandates. DACs and LMI households should be the vanguard of a just transition. Therefore, we recommend that investments are frontloaded and barriers to accessing energy efficiency and electrification programs and services are overcome in the early years of the transition. By improving existing home intervention programs or creating new intervention programs that prioritize energy efficiency upgrades and electrification, the State can decrease home energy costs, promote energy affordability, and address poor indoor air quality.

As noted in the DSP, there is a relationship between post-traumatic stress disorder, anxiety, and extreme weather conditions. We have seen the devastation and loss suffered by New Yorkers during superstorm Ida and Sandy in recent years. The FSP should address areas and buildings that are correlated with increasing risks of flooding. These areas should be reviewed for code violations that could be contributing to such risks, and any violations that should be addressed.

IV. Prioritizing Public Health in Disadvantaged Communities

To maximize New Yorkers’ well-being and mental health, the FSP should also call for investments to improve air quality and increase green space in DACs. Increasing green space in DACs can decrease cardiovascular disease along with Type II diabetes caused from lack of access to healthy foods, lack of exercise due to poor infrastructure, and contaminated air.

As discussed in comments on the Waste Chapter, the FSP should recommend measures to reduce overall waste in New York State. This will contribute to addressing odors from landfills that can affect quality of life and property values in nearby communities. Similarly, as stated in

comments on the Waste Chapter, the DSP also does not include plans to end incineration, which is a significant oversight that would set us backward in terms of the emissions and environmental justice mandates of the law. The FSP should center zero-waste as the driving policy to achieve the climate goals and organize solutions in terms of the importance of waste hierarchy—reduce, reuse, recycle—as the waste management and emissions reduction strategy. In addition, the plan should improve consideration of environmental justice impacts of waste management. The FSP should also recommend programs that provide food to local food banks and decrease the tons of food wasted within the State. The FSP should also call for measures to support ethical practices on New York State farms, and to build a food system that relies less on long-distance transportation of food.

V. Quantifying Diesel’s Health Impact and Accelerating Efforts to Electrify Diesel Fleets

Lastly, EPA’s most recent evaluation of health impacts from diesel dates back to 2002.⁸ Current EPA health data does not include quantitative risk factors from exposure to diesel exhaust, despite the clear link to respiratory and other conditions.⁹ The State of California, meanwhile, has come up with a quantitative risk factor for exposure to diesel, a known carcinogen.¹⁰ In a study of all air toxics in California, diesel exhaust was found to account for approximately 70% of known cancer risks from *all* air toxics.¹¹ Clearly, without accounting for health impacts from diesel exhaust, we are underplaying the benefits from rapidly transitioning away from diesel towards electric medium- and heavy-duty vehicle fleets.¹² New York State should document all diesel “hot spots” to allow policymakers to target electrification and infrastructure, and DOH should develop a way to quantify the health benefits from eliminating these exposures, which only serve to boost the public health and economic case for full electrification.

VI. Conclusion

⁸ EPA, Off. of Rsch. & Dev., *Health Assessment Document For Diesel Engine Exhaust* (2002), https://ordspub.epa.gov/ords/eims/eimscomm.getfile?p_download_id=36319.

⁹ *Diesel Engine Exhaust*, Integrated Risk Info. Sys. (“IRIS”), https://iris.epa.gov/ChemicalLanding/&substance_nmbr=642 (last visited June 15, 2022). **Error! Hyperlink reference not valid.**

¹⁰ *Classification of Diesel PM as a Carcinogen*, S. Coast Quality Air Mgmt. Dist., <https://www.aqmd.gov/home/rules-compliance/compliance/toxic-hot-spots-ab-2588/iws-facilities/dice/dice-b2#:~:text=In%20California%2C%20diesel%20engine%20exhaust,public%20exposure%20to%20diesel%20PM> (last visited June 15, 2022).

¹¹ *See Summary: Diesel Particulate Matter Health Impacts*, Cal. Air. Res. Bd., https://ww2.arb.ca.gov/resources/summary-diesel-particulate-matter-health-impacts#footnote1_gdobobp; <https://pubs.acs.org/doi/full/10.1021/acs.est.5b02766> (last visited June 15, 2022).

¹² *Id.*

By integrating these and existing recommendations put forth by the Climate Justice Working Group, the DSP could be strengthened by incorporating expertise and experience from community leaders who have witnessed the burdens placed upon their communities.

Respectfully submitted,

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Earthjustice
Environmental Advocates NY

Fossil Free Tompkins
Gas Free Seneca
Grassroots Environmental Education
Green Education and Legal Fund
HabitatMap
Hotshot Hotwires
Long Island Progressive Coalition
Nassau Hiking & Outdoor Club
Network for a Sustainable Tomorrow
New Clinicians for Climate Action
New York City Environmental Justice
Alliance
New York State Public Health Association
North Brooklyn Neighbors
NY Renews
People of Albany United for Safe Energy
PUSH Buffalo
Roctricity
Sane Energy Project
Seneca Lake Guardian
Sierra Club
South Shore Audubon Society
University Network for Human Rights
UPROSE
WE ACT for Environmental Justice



Transportation

I. Introduction

New York’s transportation sector is the state’s largest source of greenhouse gas (“GHG”) emissions as well as a source of harmful co-pollutants. In New York State, transportation accounts for 28% of statewide GHG emissions, the second greatest emitter of any end use sector.¹ Total transportation sector GHG emissions have increased 16% since 1990.² The State’s own modeling indicates that transportation sector GHG emissions must be reduced by at least 86% of 2016 levels by 2050 (and 31% of 2016 levels by 2030), and likely by more, to meet the Climate Leadership and Community Protection Act (“CLCPA”)’s binding economywide emissions limits.³ Vehicle tailpipe emissions are also a serious public health problem, as they

¹ N.Y. Energy Rsch. & Dev. Agency, *New York State Greenhouse Gas Inventory: 1990-2016* S-12 (2019), <https://www.nyserra.ny.gov/-/media/Files/EDPPP/Energy-Prices/Energy-Statistics/greenhouse-gas-inventory.pdf> (“NYSERDA GHG Inventory”).

² *Id.* at 13.

³ Energy & Env’t Econ., *Pathways to Deep Decarbonization in New York State* 23 tbl.2 (2020), <https://climate.ny.gov/-/media/CLCPA/Files/2020-06-24-NYS-Decarbonization-Pathways-Report.pdf> (“Pathways Analysis”).

contribute heavily to air pollution that disproportionately affects communities of color within the State.⁴

At the same time, there is cause for optimism. Automakers are beginning to meaningfully invest in electrifying their vehicle offerings and the number and range of battery electric vehicles (“EVs”) is increasing rapidly. Battery technology is rapidly improving with new battery chemistries and even solid-state batteries beginning to enter the market. Most of the major automakers have committed to selling mainly or exclusively EVs in the next 10 to 15 years, and new entrants are poised to accelerate the electrification trend. The North American Council for Freight Efficiency identifies New York State as a “high-potential region” for electrification now, not just for passenger vehicles, but for many trucking applications as well.⁵ A recent analysis found that nearly two-thirds of medium-duty and nearly one-half of heavy-duty vehicles—a total of almost 150,000 freight vehicles—are electrifiable in New York State in the near-term.⁶

To comply with the CLCPA’s emission limits, as well as its mandate to prioritize the reduction of co-pollutants in disadvantaged communities (“DACs”), the Climate Action Council (“CAC” or “the Council”) should focus attention on the most critical and enforceable policies: (1) enforceable EV sales mandates; (2) maximizing co-pollutant reductions by electrification of trucks, buses, and other medium- and heavy-duty vehicles (“MHDVs”); (3) incentives specifically designed to boost EV adoption among low-income consumers and that prioritize electrification of diesel fleets that harm environmental justice communities; (4) equitable deployment of charging infrastructure that anticipates future growth; (5) policies to reduce vehicle miles traveled (“VMT”) through expanded public transit and land-use planning; and (6) additional measures to align State policies with CLCPA mandates.

Given the scale and pace of electrification needed to meet climate, equity, and public health goals, there is no room for policies that will serve to perpetuate the status quo. Furthermore, the Final Scoping Plan (“FSP”) should not provide incentives for low-carbon drop-in fuels or support market-reliant policies that do not directly regulate vehicle emissions. Policies that incentivize the use of low-carbon fuels could prolong our reliance on internal combustion engine vehicles and divert resources from the investments we need to meet our electrification goals.

The FSP should make clear that New York’s transportation policy is electrification-first, similar to the California Air Resources Board (“CARB”) strategy of “zero-emissions everywhere feasible.”⁷ Electrification of nearly all vehicles is the only way to reach the CLCPA’s mandatory emissions limits; it also has important public health benefits and can dramatically cut health care costs by eliminating all tailpipe emissions. These concrete pollution reduction benefits will

⁴ Pinto de Moura et al., Union of Concerned Scientists, *Inequitable Exposure to Air Pollution from Vehicles in the Northeast and Mid-Atlantic* (2019), <https://www.ucsusa.org/resources/inequitable-exposure-air-pollution-vehicles>.

⁵ See N. Am. Council for Freight Efficiency & Rocky Mtn. Inst., *High-Potential Regions for Electric Truck Deployments* (2020), <https://rmi.org/insight/high-potential-regions-for-electric-truck-deployments>; see also Amol Phadke et al., Lawrence Berkeley Nat’l Laboratory, *Why Regional and Long-Haul Trucks are Primed for Electrification Now* (2021), https://eta-publications.lbl.gov/sites/default/files/updated_5_final_ehdv_report_033121.pdf.

⁶ RMI, *Charting the Course for Early Truck Electrification* 12 (2022), <https://rmi.org/insight/electrify-trucking/>.

⁷ Cal. Air Resources Bd., *2020 Mobile Source Strategy* 131 (2021), https://ww2.arb.ca.gov/sites/default/files/2021-12/2020_Mobile_Source_Strategy_0.pdf.

improve air quality and prevent adverse health outcomes in communities most impacted by the transportation sector. In tandem with an electrification-first policy, the FSP should promote strategies to reduce VMT. This includes increasing access to public transit through route redesigns, improving the frequency, hours of operation, breadth of people or destinations served, and on-time performance, modernizing rider experience, and easing access to real-time information and route planning. It also includes developing strategies for reducing VMT from freight. By both minimizing the miles driven and electrifying those miles, New York will be able to make great strides towards achieving a truly low-emissions transportation sector consistent with the CLCPA's climate mandates.

II. Pursue an “Electrification-First” Policy and Aggressively Electrify All Feasible End Uses

Under any CLCPA-compliant scenario, widespread transportation electrification will be the core of transportation sector emissions reductions. By 2050, the Draft Scoping Plan (“DSP”) states “the transportation sector will need to shift nearly completely to ZEVs.”⁸ Nearly all light-duty vehicles (“LDVs”), and most MHDVs must be zero-emission vehicles (“ZEVs”) by midcentury, and marine and port operations must be fully electrified.⁹

Even in the most aggressive scenario modeled for the CAC, transportation sector emissions do not reach zero (due mostly to aviation emissions),¹⁰ it is imperative to achieve the maximum amount of emissions reductions from sectors—like LDVs and MHDVs—where zero-emissions technology is viable.

For LDVs, MHDVs, and many non-road vehicles, electric vehicles are now or will soon be viable, both in terms of technology and economics. The DSP finds that the number of ZEVs on the road will have to increase exponentially, from roughly 80,000 in 2021 to 2.7–3.4 million in 2030, and 10.0–10.1 million in 2050. In other words, the number of zero-emission LDVs on the road will have to increase by up to 43 times by the end of the decade. Zero-emission MHDVs have to increase dramatically as well, from 1,500 in 2021 to 18,800–22,700 in 2030 and 181,000–201,300 in 2050—or 15 times 2021 levels by the end of the decade.

The DSP identifies a range of policy levers available to achieve these targets and mandates, and rightly singles out the importance of ZEV sales requirements.¹¹ Modeling demonstrates that

⁸ N.Y. Climate Action Council, *Draft Scoping Plan* (“DSP”) 96 (2021), <https://climate.ny.gov/-/media/Project/Climate/Files/Draft-Scoping-Plan.pdf>.

⁹ *Id.* at 97.

¹⁰ Per the State’s modeling, non-road and on-road emissions, under any of the scenarios, must decline from 100.3 MMT CO₂e in 2021 to 69.1–73.3 MMT CO₂e in 2030 and 8.74–15.0 MMT CO₂e in 2050. See Energy & Env’t Econ (E3), *Appendix G: Annex 2: Key Drivers and Outputs* (2021), <https://climate.ny.gov/-/media/Project/Climate/Files/IA-Tech-Supplement-Annex-2-Key-Drivers-Outputs.xlsx> [attached to DSP as app. G] (citing emissions data under the dark blue tabs).

¹¹ See DSP at 95.

the lion's share of the emissions reductions from the transportation sector must come from ZEV sales mandates.¹²

Therefore, we believe it is necessary for the Climate Action Council to make an express recommendation that New York State's mitigation strategy for transportation is "electrification-first," in line with the CARB's strategy of "zero-emissions wherever feasible" and promoting of "widespread transportation electrification."

A. ZEV Adoption mandates are essential and must be strengthened.

Commenters are fully supportive of the types of policies identified in T1, T2, and T5, which would boost ZEV adoption for LDVs, trucks and buses, and non-road sectors, but urge the Council to include additional policies, increased specificity, and more aggressive timelines to guide state policymaking in a way that ensures that all feasible use cases are electrified as expeditiously as possible.

1. The CAC Should Endorse Aggressive ZEV Sales Targets

We urge the Council to recommend a non-binding target that 100% of LDV and bus sales, and 50% of other MHDV sales, should be zero-emission by 2030, and 100% of MHDV sales should be zero-emission by 2035. These targets are broadly consistent with inputs to the DSP,¹³ but would force state agencies to consider ways to outperform the legally-binding mandates signed by Gov. Hochul (A.4302/S.2758), as well as the mandates proposed by CARB,¹⁴ and bring state policy closer to what the modeling says is required for CLCPA compliance.

2. The Final Scoping Plan Must Include Recommendations to Adopt All Available California Vehicle Emission Standards

From this target, the FSP should ensure that the cumulative effect of state policies will, to the extent possible, allow for attainment of the sales and stock targets. We fully endorse the Draft Scoping Plan's recommendation to opt in to California's Advanced Clean Cars 2 and Advanced Clean Trucks regulations (the latter of which has already been adopted), but the Draft Scoping Plan left many other viable regulatory options off the table. All enforceable emission standards will be needed to meet transportation sector emission reduction mandates and targets. Moreover, legislation signed into law last year requires that DEC adopt regulations implementing ZEV sales mandates for passenger vehicles, on-road MHDVs, and non-road vehicles. ECL § 0306(B)(2).

In particular, the Draft Scoping Plan offers inexplicably equivocal language with respect to California's Advanced Clean Fleets rule—which, once finalized, will offer the only tool to

¹² See Jeffrey Risman, Energy Innovation, *How to Reach U.S. Net Zero Emissions by 2050: Decarbonizing Transportation*, Forbes (Nov. 11, 2019), <https://www.forbes.com/sites/energyinnovation/2019/11/11/how-to-reach-us-net-zero-emissions-by-2050-decarbonizing-transportation/?sh=6b2a72772040>.

¹³ See DSP at 102.

¹⁴ See *Path to Zero Emission Trucks FAQ*, CARB, <https://ww2.arb.ca.gov/resources/documents/path-zero-emission-trucks-faq> (last visited June 20, 2022); *Advanced Clean Cars II*, CARB, <https://ww2.arb.ca.gov/our-work/programs/advanced-clean-cars-program/advanced-clean-cars-ii> (last updated March 2022).

directly regulate MHDV emissions for New York State. The Final Scoping Plan should scrap the conditional language—that DEC need only “consider” the Advanced Clean Fleets rule—and instead offer a full-throated recommendation that DEC opt in to all available California ZEV mandates.

This should extend to other on-road and non-road sectors, like Transport Refrigeration Units or airport shuttles, for which CARB has or will develop ZEV mandates. As the DSP states, “New York should take regulatory and programmatic actions to achieve” ZEV sales targets,¹⁵ and California’s regulations will necessarily provide the regulatory backbone of the State’s mobile source policies. It is critical that DEC avails itself of all available regulatory tools, especially because even with these mandates on the books, the State will need to pursue further policies to bend the curve towards what the State’s own modeling says is required to meet the CLCPA’s emissions limits.

There is no reason for the Council to avoid making such a direct recommendation. The FSP should also recommend additional California emission standards, like those applicable to cargo handling equipment and the heavy-duty low NOx omnibus rule, that will drastically reduce emissions from new combustion vehicles and equipment, while increasing the cost-competitiveness of ZEVs.

3. The Final Scoping Plan Should Strengthen Transit and School Bus Electrification Recommendations

Transit and school buses are both primed for electrification now, and are ideal sectors for additional state support, given that these are public fleets that state or local governments have the authority to regulate. No less important, the Draft Scoping Plan underscores the health and equity benefits of electrifying transit and school bus fleets, noting that zero-emissions buses will “benefit overburdened communities”¹⁶ by eliminating a major source of toxic air emissions and “prevent exposure of school children to diesel exhaust which often leaks into the cabin of buses.”¹⁷

While the Draft Scoping Plan does include some decent recommendations regarding bus electrification, Commenters urge the Council to strengthen its approach, which currently fails to provide for enforceable, tangible, and specific policies to accelerate the transition to zero-emissions. For example, regarding transportation strategy related to public transit, T5 merely calls for a “plan to transition” to zero-emission public transit buses.¹⁸ The DSP’s approach to school buses is even flimsier. School bus electrification is not mentioned as a transportation strategy at all; it is folded into local government strategy LG5, which includes a recommendation for NYSERDA and DEC to “support” electrification of school district fleets.¹⁹ Neither of these policies are sufficient to accelerate bus electrification targets at the pace called for in the

¹⁵ DSP at 102.

¹⁶ DSP at 63.

¹⁷ *Id.*

¹⁸ DSP at 109.

¹⁹ DSP at 307.

Pathways Analysis,²⁰ as these policies alone will fall far short of what will be needed to meet the CLCPA’s emission reduction mandates.

The DSP’s failure to meaningfully address these sectors is even more conspicuous given several bold new policies adopted or being actively considered to promote bus electrification. For example, the most recent State budget codified a mandate to fully electrify school bus fleets across the State by 2035 along with a ban on new fossil fuel school bus purchases starting in 2027.²¹ This followed the adoption of a similar school bus electrification mandate in New York City that was adopted late last year.²² Meanwhile, legislation proposed in both houses and advanced through the Senate Transportation Committee would require all new transit bus purchases to be zero-emissions in 2029.²³ The number of battery electric transit buses in the U.S. grew 112% from 2018 to 2021, with California leading the way with a fleet size of 1,371—nearly 7 times the size of New York’s fleet of 195 full-sized zero-emission transit buses.²⁴ Several states have adopted even more aggressive transit bus electrification policies, and numerous transit agencies are well on the way towards fully electrifying their fleets.²⁵

Delaying the transition away from diesel and other fossil fuel buses, when zero-emission technology is viable and likely to be cost-effective in the near-term, does not make practical sense and will only serve to postpone readily achievable emissions reductions in DACs. New electric buses are already cost-effective, and initial costs are only going to come down, while retrofits provide an alternative, affordable solution for bus electrification. The FSP must call for: (1) a phase-out of new purchases of fossil fuel-powered transit and school buses as soon as possible and no later than 2029 for transit buses and 2027 for school buses, (2) a 2035 mandate for full transition to zero-emission bus fleets, (3) adequate funding over the next 5–10 years to minimize the cost burdens for transit agencies and school districts, and (4) additional policies to protect existing workers, provide workforce development for new zero-emission technologies, and ensure DACs are prioritized for zero-emission bus and infrastructure deployments.

4. The Final Scoping Plan Must Recommend Strategies to Require ZEV Adoption for Public Fleets and Other Fleets Where Allowable

Commenters support the Draft Scoping Plan’s recommendations to electrify the State’s passenger and MHDV vehicle fleet (T1 & T2),²⁶ which, as the DSP notes, are consistent with a

²⁰ The Pathways Analysis modeled CLCPA-compliant emission reduction scenarios and found that 60–70% of new bus sales would need to be zero-emissions by 2030, and 100% of new bus sales would need to be zero-emissions between 2035–40, to keep CLCPA mandates within reach. See Pathways Analysis, *supra* note 3 at 12 tbl.1.

²¹ See 2021 NY Senate-Assembly Bill S8006C, A9006C Pt. B, Subpt. A.

²² See Green Car Congress, *New York City Council Passes Bill Mandating All City School Buses be Electric by 2035* (Oct. 20, 2021), <https://www.greencarcongress.com/2021/10/20211010-nyc.html>.

²³ See 2021 NY Senate-Assembly Bill S3535C, A.3090.

²⁴ Hannah Hamilton et al., Calstart, *Zeroing in on ZEBs 7 tbl.2* (2022), https://calstart.org/wp-content/uploads/2022/01/2021-ZIO-ZEB-Final-Report_1.3.21.pdf.

²⁵ See Md. Dep’t of Transp., *MDOT MTA Launches Phased Plan for Conversion to Zero-Emission Bus Fleet*, Md. Transit Admin. (Dec. 21, 2021), <https://www.mta.maryland.gov/articles/334>; N.J. Transit, *NJ Transit Unveils Roadmap to 100% Zero-Emissions Bus Fleet*, (May 25, 2021), <https://www.njtransit.com/press-releases/nj-transit-unveils-roadmap-100-zero-emissions-bus-fleet>; Press Release, CARB, *California Transitioning to All-electric Public Bus Fleet by 2040* (Dec. 14, 2018), <https://ww2.arb.ca.gov/news/california-transitioning-all-electric-public-bus-fleet-2040>.

²⁶ DSP at 104, 106.

November 2021 commitment made by Gov. Hochul.²⁷ Critically, the DSP notes the need for “appropriate funding” to transition the State’s fleet. The recently enacted budget only allocated \$17 million for state fleet electrification, and that money was earmarked for passenger vehicles only.²⁸ By contrast, New York City has committed \$420 million to fully transition the City’s vehicle fleet to ZEVs by 2030 for LDVs and 2035 for MHDVs.²⁹ The Final Scoping Plan must strengthen this set of recommendations, by 1) making explicit the timelines to fully electrify the State’s LDV and MHDV fleets—2030 for passenger vehicles and 2035 for MHDVs, 2) including interim electrification targets to guide state procurement policy, and 3) calling for appropriations at a level that will achieve aggressive ZEV deployment for State agency vehicles.³⁰

Commenters also support the Draft Scoping Plan’s recommendation (T2) to “[r]equire ZEV equipment use for State contractors and at targeted facilities,” and to “enact legislation that establishes procurement and contracting rules to increase the percentage of zero-emission equipment and vehicles used for State-funded projects to be ZEVs (including contractors and subcontractors).”³¹ New York State already has legislation on the books intended to reduce emissions from State-funded projects—the Diesel Emissions Reduction Act (“DERA”), codified at ECL § 19-0323. DERA applies to heavy-duty diesel vehicles “owned by, operated by or on behalf of, or leased by” state agencies and public authorities—thus capturing contractors on State-funded projects—and requires that such vehicles utilize “best available retrofit technology for reducing the emission of pollutants.” ECL § 19-0323(3). The Council should recommend that New York State lawmakers update DERA—which was signed into law in 2006—to facilitate the deployment of ZEV technology for State-funded projects, which would align with the CLCPA and reflect improvements in ZEV technology. In addition, our groups note that the State’s enforcement and implementation of the existing DERA statute has been subpar. Reports required by DERA have not been submitted, and the extent to which DEC is enforcing its provisions is unclear. The Final Scoping Plan should recommend that DEC devote sufficient resources to adequately implement this program and to ensure regulated entities are in compliance, and that DEC develop guidance for state agencies and contractors that clarifies all relevant legal obligations.

Other public fleets should be prioritized for electrification as well. Commenters support the recommendation in local government strategy LG5 calling for NYSERDA and DEC to “support electrification of municipal . . . fleets,” but urge the Council to expand on this in the Final Scoping Plan.³² As mentioned above, New York City already has a plan to downsize its vehicle fleet and to fully electrify its vehicles by 2035. The State can do more to encourage such efforts. The Final Scoping Plan should: (1) set a target to electrify all municipal fleets in the State by 2035, including passenger vehicles and MHDVs, (2) recommend that the State significantly

²⁷ Green Car Congress, *9 National, Regional, State and City Governments Sign Up to ZEV Pledge for Their Fleets: 121,355 Vehicles* (Nov. 30, 2021), <https://www.greencarcongress.com/2021/11/202111130-zevpledge.html>.

²⁸ Capital Projects Appropriations Bill, 2022 NY State-Assembly Bill S8004, A9004 at 330.

²⁹ Press Release, Off. of the Mayor, *Mayor de Blasio Announces Historic Investments to Drastically Cut Citywide Climate Emissions and Advance Carbon Neutrality*, (Dec. 22, 2021), <https://www1.nyc.gov/office-of-the-mayor/news/857-21/mayor-de-blasio-historic-investments-drastically-cut-citywide-climate-emissions-and>.

³⁰ Legislation passed by both houses would codify the State’s commitment, and the Final Scoping Plan should endorse this bill to effectuate this recommendation. See 2021 NY State-Assembly Bill S2838C, A.2412.

³¹ DSP at 106.

³² DSP at 307.

increase funding for municipal fleet electrification through the Climate Smart Communities program, (3) recommend enhanced incentives for cash-strapped municipalities and those with DACs, (4) recommend the State develop a robust technical assistance program for municipalities, with adequate funding so that the program can be appropriately staffed, and (5) call for a report to explore additional legislative or policy tools that can accelerate municipal and county fleet electrification.³³

B. The CAC should pursue additional strategies to accelerate freight electrification.

The CLCPA requires that the Council identify “measures to promote the beneficial electrification of personal *and freight* transport” in the Final Scoping Plan. ECL § 75-0103(13)(f) (emphasis added). While it is the case that several policies identified in the DSP transportation strategy T2: “adoption of zero-emission trucks, buses, and non-road equipment”³⁴ will, if implemented, jumpstart the transition towards electrifying freight, there are additional measures that should be included in the Final Scoping Plan.

1. The FSP Should Endorse a Warehouse Indirect Source Rule

One major oversight regarding freight electrification is the CAC’s failure to recommend an Indirect Source Rule (“ISR”) to address facilities that attract significant volumes of vehicle traffic. DEC has the authority to regulate major freight facilities, such as warehouses and ports, by requiring facility operators to mitigate emissions through electrification and other strategies.³⁵ An “indirect source” is “a facility, building, structure, installation, real property, road, or highway which attracts, or may attract, mobile sources of pollution.” 42 U.S.C. § 7410(a)(5)(C). Developing a regulatory framework to encourage ZEV adoption at warehouses and other important “indirect sources” will be critical to achieving the level of MHDV electrification called for in the DSP and supporting analysis.

There is no legal barrier to New York State adopting such rules. Courts have affirmed that the CAA allows sub-national governments to regulate indirect sources of air emissions. For example, in 2006 the San Joaquin Air District adopted a rule to address emissions of nitrogen oxides and PM associated with construction of development projects. *See Nat’l Ass’n of Home Builders v. San Joaquin Valley Unified Air Pollution Control Dist.*, 627 F.3d 730, 731–32 (9th Cir. 2010). The National Association of Home Builders (“NAHB”) sued the District, arguing that

³³ For example, Albany County, Westchester County and Suffolk County recently announced a partnership to begin planning collectively to electrify their vehicle fleets by 2030. This FSP should encourage this level of ambition statewide. *See* Kate Pierce, *Tri-County Electric Vehicle Shared Services Purchasing Initiative*, Issuu (2021), https://issuu.com/nysac/docs/nysac_news_magazine_-_fall_2021/s/13911366.

³⁴ DSP at 104.

³⁵ New York’s authority for an ISR flows primarily from the federal Clean Air Act (“CAA”), 42 U.S.C. §§ 7401–7671q. The CAA expressly provides that a State Implementation Plan (“SIP”) to meet National Air Quality Standards (“NAAQS”) may include “any indirect source review program.” 42 U.S.C. § 7410(a)(5)(A)(i). An “indirect source review program” is defined as “the facility-by-facility review of indirect sources of air pollution, including such measures as are necessary to assure, or assist in assuring, that a new or modified indirect source will not attract mobile sources of air pollution” that would prevent meeting or maintaining the NAAQS. *Id.* § 7410(a)(5)(D).

the Clean Air Act preempted the rule. *Id.* at 730. NAHB reasoned that the rule imposed emissions standards on construction vehicles, and California may not set such standards without federal approval. *Id.* at 734. The Ninth Circuit rejected this argument, explaining that the rule “does not target vehicles or engines. It targets emissions, and requires emissions reductions, from a development site as a whole.” *Id.* at 739. Similarly, New York would be well within its authority to adopt a rule to limit vehicle emissions associated with warehouses and ports because the rule would target a warehouse or port “site as a whole” rather than imposing a standard on the vehicles or engines. Moreover, an ISR for sites that induce MHDV traffic would be an appropriate use of DEC’s authority because such a rule would “assist in assuring[] that a new or modified indirect source will not attract mobile sources of air pollution” that would prevent New York from meeting the ozone NAAQS. 42 U.S.C. § 7410(a)(5)(D).

In Southern California, where warehouse sprawl has exacerbated air quality in “diesel death zones,” the South Coast Air Quality Management District recently promulgated an ISR for warehouses to regulate their air quality and climate impact.³⁶ Meanwhile, DEC has stated that it is considering a similar policy for New York State.³⁷ Commenters strongly urge the Council to recommend in the FSP that DEC adopt an ISR for warehouses, which will accelerate electrification of vehicle fleets in the freight and goods movement sectors.³⁸ And, given that these facilities tend to be sited near communities of color,³⁹ an ISR provides a regulatory tool to target vehicle turnover in a way that would further the CLCPA’s objectives to prioritize emissions reductions efforts in DACs.

2. The FSP Needs to Include Other Measures to Electrify Freight

The Council must also strengthen its recommendations regarding non-road vehicles. The DSP misses the mark by only calling for DEC to “consider” regulatory options to achieve 100% ZEV sales for non-road vehicles and equipment by 2035. Commenters fully support the 2035 100% ZEV sales target for the non-road sector, but urge the Council to firm up the language in the FSP so that it unambiguously recommends that DEC opt in to all available California emission standards for forklifts, cargo handling equipment, commercial harbor craft, in-use locomotives, and any other sector regulated by CARB.

Finally, Commenters also ask the Council to recommend that state and local governments evaluate ways to strengthen mitigation requirements as part of the environmental review for major transportation projects. As discussed more fully below, the procedures and regulations that

³⁶ See S. Coast Air Quality Mgmt. Dist., *Rule 2305. Warehouse Indirect Source Rule* (adopted May 7, 2021), <http://www.aqmd.gov/docs/default-source/rule-book/reg-xxiii/r2305.pdf?sfvrsn=15>.

³⁷ Letter from Deputy Comm’r Jared Snyder, DEC to Reg’l Adm’r Lisa Garcia, EPA Region 2, submitting for approval the final proposed revisions to the NY State Implementation Plan for the 2008 Ozone National Ambient Air Quality Standards, at 73 (Nov. 29, 2021), https://www.dec.ny.gov/docs/air_pdf/sipseriouso3nyma.pdf (“DEC is also evaluating . . . the South Coast Air Quality Management District’s (SCAQMD’s) finalized ISR for warehouses to consider emission reduction opportunities for such sources.”).

³⁸ Legislation recently introduced in the New York State would direct DEC to adopt an ISR for warehouses, which the FSP should recommend that the Legislature pass. See 2021 NY Assembly Bill A9799.

³⁹ See Kaveh Waddell, *When Amazon Expands, These Communities Pay the Price*, Consumer Reports (Dec. 9, 2021), <https://www.consumerreports.org/corporate-accountability/when-amazon-expands-these-communities-pay-the-price-a2554249208/>.

are intended to mitigate the environmental harms for major projects are woefully outdated and often lack teeth. There are opportunities to revamp the approach so that they can become a tool to boost adoption of zero-emission vehicles and equipment and major freight and transportation facilities.

C. The FSP must not be based around reliance on “low-carbon fuels”.

Consistent with an “electrification-first” strategy, we urge the CAC to reject reliance on so-called “low-carbon fuels” by avoiding any policies that would prolong the use of fossil fuel infrastructure and combustion technology. Leapfrogging these dead-end strategies is necessary to reduce emissions that disproportionately impact DACs. The default assumption for State transportation policy should be to “electrify everything that moves,” in line with Climate Justice Working Group recommendations.

Moreover, we strongly urge the CAC to offer clear instructions that would limit any alternative approach to those use cases where there is a clear demonstration of technical infeasibility for electric technologies. Moreover, given how rapidly technology is evolving, any determination that an application is “hard to electrify” must be reevaluated periodically. The current DSP identifies a wide range of potential transportation fuels for consideration including renewable diesel, renewable jet fuel, and green hydrogen.⁴⁰ Renewable diesel and hydrogen must be approached with caution even as temporary strategies for decarbonization of the transportation sector.

As the DSP itself acknowledges, renewable diesel exacerbates the conventional air pollution impacts of diesel vehicles: “When compared with petroleum-based fuels, biodiesel and alcohol-based fuels have higher levels of combustion emissions of respiratory irritants and some ozone-precursors such as acrolein, carcinogens, formaldehyde, and acetaldehyde.”⁴¹ Consequently, biodiesel may not achieve the critical localized emission benefits of electrifying diesel-based vehicles. Moreover, claimed climate benefits of biofuels are premised on assumptions regarding reuptake of biological carbon that may not hold in practice.⁴² And biofuel production can induce land use change that may eliminate or reverse the intended climate goals on climate-relevant time scales.⁴³ Any incorporation of biofuels into the FSP must include explicit guardrails to prevent its use in contexts where electric alternatives are possible and to ensure rigorous quantification of direct, indirect (including upstream), and induced climate impacts associated with the fuel are accounted for.

Hydrogen also has a limited role to play in the decarbonization of the transportation sector. Most fundamentally, hydrogen as a fuel is far less efficient than electricity at converting energy into propulsion. Particularly if the hydrogen is “green” (i.e., produced using zero emission renewable energy using electrolysis), the energy lost in electrolyzing water to produce hydrogen,

⁴⁰ DSP at 118.

⁴¹ *Id.* at 63.

⁴² See, e.g., John M. DeCicco et al., *Carbon Balance Effects of U.S. Biofuel Production and Use*, 138 *Climatic Change* 667 (2016).

⁴³ E.g., Wouter M. J. Achten & Louis V. Verchot, *Implications of Biodiesel-induced Land-use Changes for CO₂ Emissions: Case Studies in Tropical America, Africa, and Southeast Asia*, 16 *Ecology & Soc.* (2011).

then compressing the hydrogen for use in a fuel cell, then reacting it in a fuel cell, and then using that energy to propel a vehicle, renders hydrogen vehicles several-fold *less* efficient than pure battery electric vehicles.⁴⁴ Hydrogen does have higher energy density than current battery technology, and thus may have a role in limited applications such as long-distance trucking, but the Integration Analysis’s suggestion that hydrogen will be used “for MHDVs and freight rail” is overly broad.⁴⁵ There may be viable electric options that will be cheaper and/or more energy efficient for many or most of these vehicle types. To the extent that any hydrogen is proposed as a transportation sector strategy, it is critical that this hydrogen be green. The definition of “zero emissions vehicle” should be clarified to exclude hydrogen fuel cell vehicles where the hydrogen is not produced via electrolysis using entirely non-emitting renewable resources.

III. Address Infrastructure and Other Barriers to Electrification

A. The final scoping plan must encourage utilities to more actively promote fleet electrification.

Fleet owners are accustomed to managing the logistics of fleet operations, but electrification presents a novel set of challenges. Utilities have relevant expertise to share.

Strategy T5 recommends “[i]mproving electric fleet economics for developers by supporting the Make-Ready program, which promotes EV charging station deployment.”⁴⁶ The same recommendation also envisions the State working with municipally-sponsored public transportation systems on plans to transition to all-electric/zero-emission public transportation vehicles.⁴⁷ However, there is no acknowledgment of the non-financial barriers to fleet electrification or resources identified to assist private fleet owners in transitioning to ZEVs.

While critical to achieving New York’s CLCPA mandates, fleet electrification is not widespread in New York. Niagara Mohawk recently surveyed its customers in 2020 and found that only around 20% currently operated any EVs in their fleets or were planning to incorporate EVs in their fleets within the next year.⁴⁸ Nearly a quarter, however, indicated that they intended to incorporate EVs into their fleets within the next 1–5 years and more than 40% indicated that they have considered doing so.⁴⁹ A variety of barriers were identified by Niagara Mohawk’s customers including some that will require regulations that grow and scale the EV market such

⁴⁴ Tom Baxter, *Hydrogen Cars Won’t Overtake Electric Vehicles Because They’re Hampered by the Laws of Science*, the Conversation (June 3, 2020), <https://theconversation.com/hydrogen-cars-wont-overtake-electric-vehicles-because-theyre-hampered-by-the-laws-of-science-139899>.

⁴⁵ Energy & Env’t Econ (E3), *Appendix G: Integration Analysis Technical Supplement* sec. 1 at 118 tbl.16 (2021), <https://climate.ny.gov/-/media/Project/Climate/Files/Draft-Scoping-Plan-Appendix-G-Integration-Analysis-Technical-Supplement.pdf> [attached to DSP as app. G] (“Technical Supplement”).

⁴⁶ DSP at 110.

⁴⁷ *Id.* at 109.

⁴⁸ Niagara Mohawk EV Panel Direct Testimony at 49 fig.4, *In re Niagara Mohawk*, Niagara Mohawk Power Corp. Case No. 20-E-0380 (July 31, 2020) (Docket No. 520), <https://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId={9628378F-D083-440C-AEAA-521503F5E86A}>.

⁴⁹ *Id.*

as up-front vehicle costs and availability of electric models in desired vehicle categories.⁵⁰ Other barriers to fleet electrification, however, can be addressed through active engagement of the State’s utilities, such as uncertainty regarding utility bill impacts and costs, uncertainty regarding planning and how to begin the process of electrifying the fleet, and the cost of equipping facilities with charging infrastructure.

Utilities are not only well-positioned to help address these barriers but have actively proposed programs to do so. Niagara Mohawk, in its 2020 rate case, proposed a suite of fleet programs intended to “enable the market for, and accelerate, both [LDV] and [MHDV] fleet electrification in a cost-effective, efficient, and sustainable manner.”⁵¹ Niagara Mohawk’s proposal included, among other components: (1) fleet assessment services consisting of a bill impact analysis, a site feasibility analysis (estimating the cost for infrastructure upgrades in front of and behind the meter), and a roadmap to fleet electrification;⁵² (2) a make-ready charging infrastructure offering to reduce the cost to fleet owners of installing charging to support fleet electrification;⁵³ and (3) a single utility point of contact for fleet customers considering electrification who would assist customers through the process, answer technical questions, identify relevant EV offerings, and address related issues regarding deploying on-site storage for demand management or utilizing renewable energy programs to optimize the emissions impact of fleet electrification.⁵⁴

Commenters urge the Council to include recommendations to have utilities play a more active role in promoting electrification of LDV and MHDV fleets, especially those that operate in or near DACs and environmental justice communities. Such programs will be needed to address soft barriers to electrification and ensure that 20,000+ ZE MHDVs are on the road by 2030, in line with Scenarios 3 & 4.⁵⁵

B. The CAC must support policies to ensure the EVSE is available and accessible for all New Yorkers.

The DSP properly highlights the importance of electric vehicle charging stations to state-wide decarbonization. The FSP, however, will require more specific policies, explicit directions to state agencies, and clear targets for deploying electric vehicle supply equipment (“EVSE”). Most urgently, in order to meet our climate goals, we will need to significantly increase state funding towards public electric vehicle charging stations. Commenters recommend investments be sourced nearly equally between public, utility, and private funding. On the public side, the State should continue to fund rebates or investments in EV charging stations, by scaling up existing programs with proven track records and plugging in holes with new programs as appropriate.

⁵⁰ *See id.*

⁵¹ *Id.* at 38.

⁵² *Id.* at 39.

⁵³ *Id.* at 39–40.

⁵⁴ *Id.* at 40–41.

⁵⁵ Even Scenario 2’s path towards meeting the CLCPA’s emissions limits depends on nearly 19,000 MHDVs to be on the road by 2030. This will require hundreds of fleets starting on the path to electrification in the near-term.

1. The CAC Must Call for an Interagency Planning Process to Guide Development of Strategically-placed EV Charging Stations

The CAC should call for the State to initiate an interagency planning effort to ensure EVSE installations are keeping pace with broader ZEV adoption targets. This planning effort should consider ways to support and enhance existing programs and identify gaps that need to be filled with additional State resources. Commenters further urge that this planning process ensure that equity, environmental justice, and just transition considerations be integrated and embedded into the State’s EVSE framework, rather than merely tacked on.

For example, the FSP should identify ways to maximize the value of New York’s Make-Ready program—the largest state commitment to EV charging outside of California—which is currently intended to fund over 53,000 public Level 2 (“L2”) charging stations and 1,500 public Direct Current Fast Charging (“DCFC”) stations by 2025.⁵⁶ The Make-Ready program is a necessary element of widespread electrification and is estimated to stimulate \$1.5 billion in new private investment while providing more than \$2.6 billion in consumer benefits and economic opportunities.⁵⁷ The Make-Ready program is currently funded with \$701 million and is slated to run through 2025, offering incentives to offset a large portion or, in some cases, all the utility-side infrastructure costs associated with preparing a site for EV charger installation.⁵⁸ Despite its scale, it has not been established in any quantitative way whether this program will be sufficient in enabling the drastic increase in personal and fleet electrification needed before the end of the decade. The FSP should recommend that such an analysis be conducted.

The reality is that the current scale and pace of public EVSE installation in New York threatens to jeopardize widespread ZEV adoption across the State. A very recent audit conducted by Comptroller DiNapoli found that “The New York Power Authority (NYPA) has failed to install [EV] chargers where they are most needed by New York’s nearly 50,000 registered EVs, leaving nearly half of the state’s counties without any NYPA-installed charging stations.”⁵⁹ The program’s stated purpose was to enable NYPA to supplement the EV charging industry by providing the initial investment needed to catalyze demand where the private sector wouldn’t. Yet, as of June 2021, NYPA had installed just 277 public EV charging ports, or one for every 168 EVs registered in New York. The FSP should call for NYPA to change its current course and deploy charging stations where they are most needed to ensure transportation electrification is equitable and benefits all New Yorkers, which will include intentional efforts to boost installations in areas that may be less profitable and areas along major state highways that lack adequate EVSE.⁶⁰

⁵⁶ See Claire Alford, *New York’s \$701 Million Program for EV Charging, By the Numbers*, Advanced Energy Econ. (Aug. 19, 2020), <https://blog.aee.net/new-yorks-701-million-program-for-ev-charging-by-the-numbers>.

⁵⁷ *Id.*

⁵⁸ *Id.*

⁵⁹ Press Release, Off. of the N.Y. Comptroller, *DiNapoli: New York Power Authority’s Installation of Electric Vehicle Chargers Years Behind Schedule*, (Feb. 4, 2022), <https://www.osc.state.ny.us/press/releases/2022/02/dinapoli-new-york-power-authoritys-installation-electric-vehicle-chargers-years-behind-schedule>.

⁶⁰ Unlike in large metropolitan areas, drivers in upstate New York generally go on much longer trips. While some gas stations will most likely transition to charging stations, a fully charged car just does not go as far as a full tank of

2. The FSP Should Set a Goal to Make EV Charging Ubiquitous

Furthermore, as part of any interagency planning process, Commenters call on the State to support counties that are leading the way on transportation electrification, while also planning proactively so that infrastructure does not pose a barrier where ZEV adoption has not yet taken off, including rural, low-income, and urban communities. This may mean pinpointing those locations where charging stations may not be profitable, at least in the near-term, but will nevertheless be essential to achieve mass adoption of EVs across New York State. Commenters further note that utilization rates may not be the best metric to gauge the effectiveness of EVSE programs where home or workplace charging may be predominant, EV adoption may be slow, but where broad coverage with EVSE is going to be a prerequisite for individual drivers.

The State should work with the goal to make charging stations ubiquitous, as recommended by the National Academy of Sciences—given that EV adoption is closely linked to the presence of visible charging stations.⁶¹ The comparison to gas stations may be instructive, as in many locations there are clearly more options than are strictly needed. The FSP should include an explicit recommendation that the State develop a framework to guide public and private investment into EVSE to achieve the goal of making charging ubiquitous for New York drivers.

At the same time, the State’s framework for EVSE must integrate the CLCPA’s equity provisions as a foundational element. This means the State must actively strive to increase EV charger density in low-income and environmental justice communities, with a focus on highly polluted freight hubs, to remove any potential barriers to transitioning the State’s dirtiest diesel fleets to ZEVs. For urban communities, this will also require exploring creative solutions to overcome space constraints, such as widespread curbside charging in high-use areas. Critically, this planning should also prioritize efforts to electrify public and private depots in communities facing cumulative impacts from environmental burdens, in line with transportation strategy T2. Currently, transit agencies and other fleets may be developing individual strategies to electrify depots—an integrated, inter-agency, broad-based planning process can help fleets manage their own electrification while ensuring clusters of depots are electrified on a priority basis.

3. The FSP Needs Concrete Recommendations to Promote EVSE Accessibility

Commenters support the DSP’s call for state agencies to focus EVSE installation on multi-unit dwellings.⁶² An important tool to promote widespread EVSE adoption is to make home charging convenient for as many New Yorkers as possible. For the approximately 24% of New Yorkers who live in multi-dwelling units, a shared station for use by building residents could well be the catalyst for broad EV adoption. Right now, across the U.S., more than 80% of EV

gas, thus long distances present the challenge of needing even more fueling stations. For fast charging, one needs a DC fast charger, but it is faster to charge to 50% from 0% than 50% to 100%, therefore drivers may be more apt to take multiple charging stops, and again, this necessitates more chargers on highways.

⁶¹ Nat’l Acads. Scis., Eng’g, & Med., *Accelerating Decarbonization of the U.S. Energy System* 65 tbl. 2.6, 160 (2021), <https://www.nap.edu/read/25932/chapter/1>.

⁶² DSP at 104.

charging load (and as much as 93% under some scenarios) happens at home, mostly in the evening.⁶³

Several pending bills could unlock home charging for a large percentage of New Yorkers. For example, the EV Ready Building Codes (and parking structures) Bill (S23B, A4386B) would require all new residential and commercial construction with dedicated off-street parking (like garages or parking lots) to install EVSE in conformance with the requirements of the current edition of the national electrical code (A3435). The bill would cover construction projects that receive state capital funding and that include a garage or parking lot with 50 or more parking spaces, and would require that the parking facility be capable of supporting EV charging stations. The FSP should endorse this legislation as a concrete proposal that would boost EV adoption across the State.

At the same time, the State should utilize and expand existing frameworks like the Charge Ready NY program, and enhance rebates for Level 2 chargers to include single or multi-family units. Additionally, the Council should endorse the continuation and expansion of the Charge to Work NY program, which provides financial support to workplaces installing EV chargers—a critical incentive as more low- and middle-income New Yorkers begin adopting EVs at scale. Both programs should also be evaluated in the interagency planning recommended above.

4. The CAC Should Recommend That Lawmakers Adopt Legislation to Coordinate EVSE Installation

New York State needs to ensure the rollout of EV charging infrastructure is carefully coordinated and sufficient to meet EV deployment targets. The State can develop targets through periodic planning and transportation forecasting to ensure the State is on track with EV charger deployment. California has set out to accomplish this important planning with Assembly Bill 2127 Electric Vehicle Charging Infrastructure Assessment which examines charging needs to support California’s plug-in electric vehicle goals. Under AB2127, the California Energy Commission (“CEC”) is required to publish a biennial report on the charging needs of 5 million ZEVs by 2030.⁶⁴

New York State needs a similar statutory requirement to identify gaps in charging infrastructure. The State Assembly’s proposal in its one-house budget proposal could provide a framework for lawmakers seeking to take up this issue. The Council must include a recommendation in the FSP to codify the obligation to periodically assess the state of charger deployment in New York State.

5. Address Inequities in Charger Deployment

To meet our climate mandates, we cannot treat the electrification of transportation the same way as a naturally occurring socio-technical change. So far, there have been inherent inequalities

⁶³ *Charging at Home*, U.S. Dep’t of Energy, <https://www.energy.gov/eere/electricvehicles/charging-home> (last visited June 27, 2022).

⁶⁴ Cal. Energy Comm’n, CEC-600-2021-001-CMR, *Assembly Bill 2127 Electric Vehicle Charging Infrastructure Assessment* (July 2021), <https://efiling.energy.ca.gov/getdocument.aspx?tn=238853>.

in the early electric vehicle adoption process. For a just transition, we need interventions to ramp up electric vehicle adoption among low- and middle-income New Yorkers who cannot afford them at the current market rate. The climate cannot afford to have “early adopters” be just a small percentage of the population that can pay for EVs. This requires implementing policies to get more affordable EVs on the market, but also requires careful attention to where chargers are deployed. Studies have shown that charger installations in urban areas excludes communities of color, leading to charging deserts that can pose a significant barrier to EV adoption.⁶⁵ The State must be intentional in developing a framework for EVSE installations that ensures all New Yorkers will be able to benefit from the transition to EVs.

C. The FSP must account for the role of utility rates.

1. The CAC Must Propose Concrete Strategies to Mitigate or Eliminate Demand Tariffs

On top of infrastructure-related barriers, utility rate structures can serve to impede rather than promote widespread fleet electrification. Commenters urge the CAC to be more assertive in recommending ways to mitigate or eliminate demand tariffs.⁶⁶ Commenters agree with the Transportation Advisory Panel’s finding noting that demand charges can inhibit MHDV ZEV adoption. Existing demand charges can present a major barrier to the installation of DCFC stations, which can draw significant loads but are needed to accelerate MHDV fleet electrification. As Rocky Mountain Institute’s *EVgo Fleet and Tariff Analysis for California* illustrates, at low levels of utilization, demand charges swamp volumetric charges, and can be up to 90% of the total electric bill.⁶⁷ This threatens to tilt the economics away from electrification, despite the fact that electricity is generally cheaper than diesel, and thus jeopardizes attainment of the CLCPA’s emissions limits.

Time-limited demand charge relief is not a workable long-term solution because fleets will electrify at different rates. Alternate rate structures that are designed to facilitate MHDV adoption have been implemented in other jurisdictions and could serve as a model for New York State.⁶⁸ Increasing the use of such tariffs in the State is critical to facilitate emission reductions from MHDV fleets, especially those that impact disadvantaged communities, and thus should be a core component of any transportation sector-specific strategy to meet the CLCPA.

⁶⁵ Will Englund, *Without Access to Charging Stations, Black and Hispanic Communities May Be Left Behind in the Era of Electric Vehicles*, Washington Post (Dec. 9, 2021), <https://www.washingtonpost.com/business/2021/12/09/charging-deserts-evs/>.

⁶⁶ Demand charges are power capacity-related costs that cover all of the wear-related grid components, both upstream (e.g., distribution station, distribution feeder, transmission line, generation) and downstream (e.g., transformers, distribution cabling, and utility poles).

⁶⁷ Garrett Fitzgerald & Chris Nelder, Rocky Mountain Instit., *EVgo Fleet and Tariff Analysis, Phase 1: California at 1* (2017), https://rmi.org/wp-content/uploads/2017/04/eLab_EVgo_Fleet_and_Tariff_Analysis_2017.pdf.

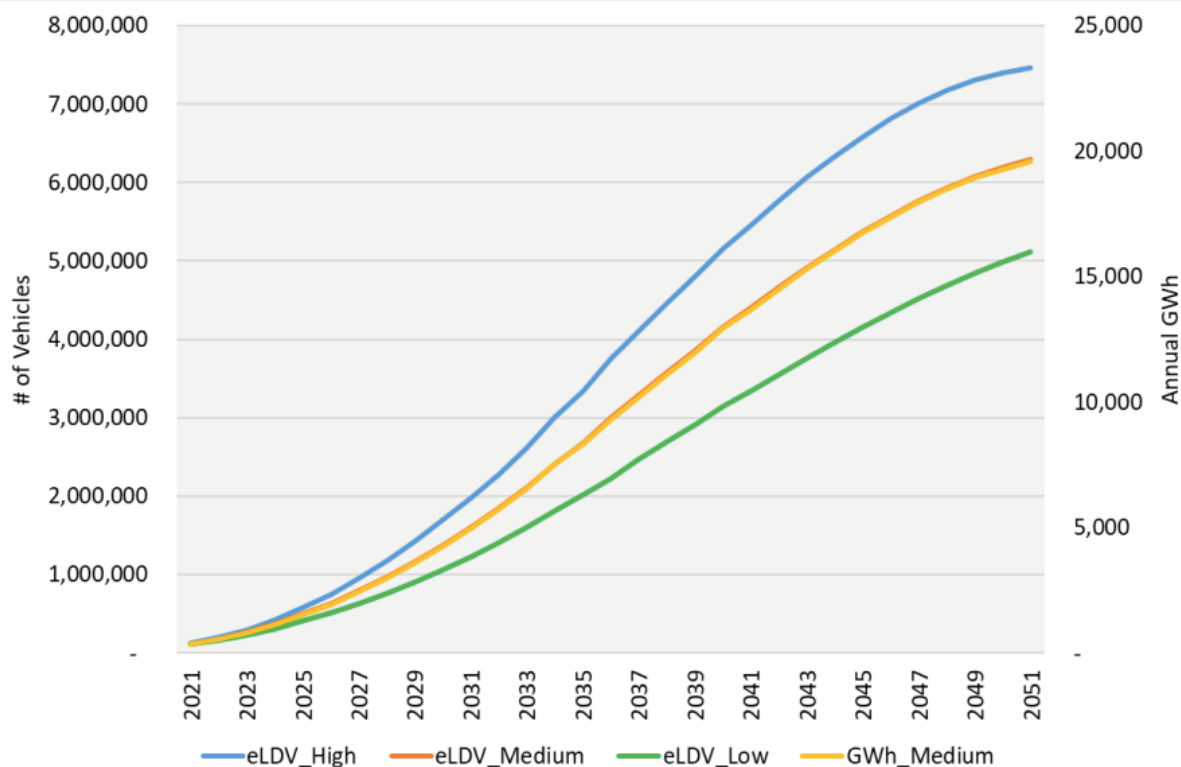
⁶⁸ For example, Pacific Power in Oregon implemented a tariff that would shift a portion of demand charges to on-peak energy rates for customers with DCFC, initially reducing DCFC bills by up to 59%. San Diego Gas & Electric has unveiled an optional approach that completely eliminates demand charges and offers eligible fleets even more billing stability through fixed, monthly subscription charges that are flexible enough to accommodate different load profiles but that are designed to save as much as 50% in fuel costs compared to diesel.

2. The CAC Must Include Recommendations Related to Managed Charging in the FSP

While the DSP addresses the need for load management in the context of distributed energy resources,⁶⁹ the FSP should specifically address the role for utilities in managing new electric loads associated with the projected increase in EVs.

Transportation electrification is projected to dramatically increase electric demand and load, and these impacts will be magnified by efforts to accelerate this trend to achieve the CLCPA climate mandates. In its 2021 Gold Book, the New York Independent Systems Operator (“NYISO”) projected that by 2050, light-duty EVs will add between 15,000 and 22,000 GWh of new load to the system, (see Figure 1 below).⁷⁰

Figure 1: Zero-emission LDV Stock & GWh Forecast



The EV sales projections in the Integration Analysis and Draft Scoping are far higher. The State will need 3 million ZEV LDVs in 2030 and 10 million ZEV LDVs by 2050.⁷¹ This would require on the order of 30 TWh (1.2 * 25 TWh = 30 TWh) of new load to be incorporated into the grid. Electric MHDVs are further expected to add significant additional electric load.

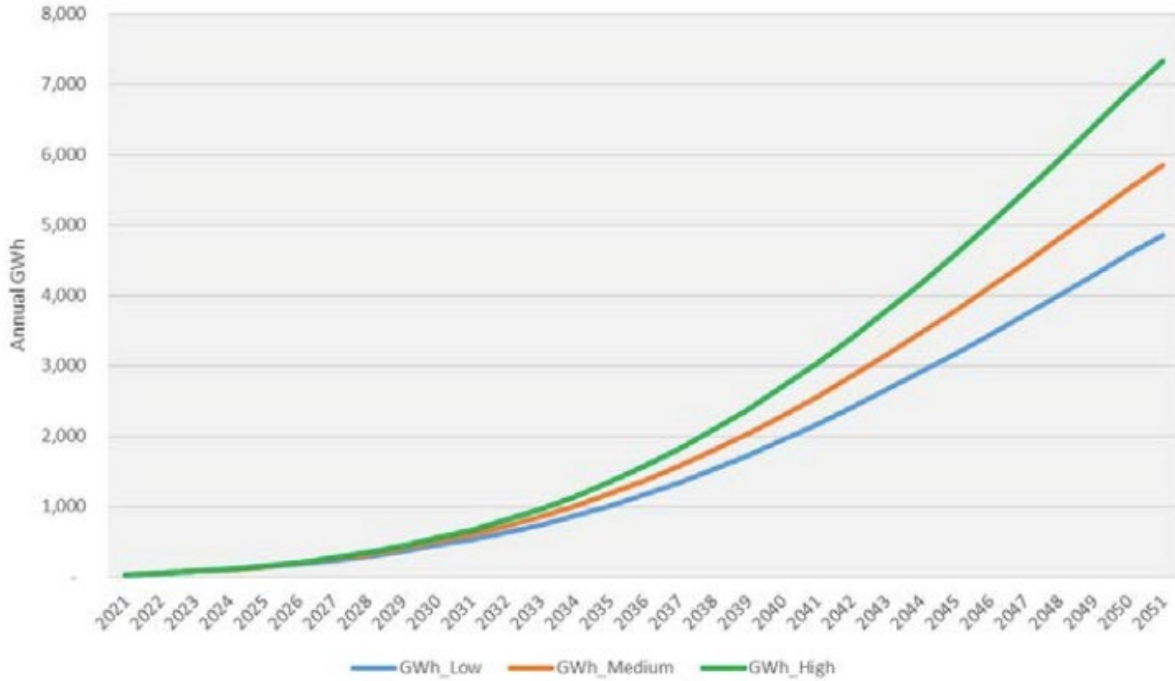
⁶⁹ See DSP at 139.

⁷⁰ NYISO, *Electric Vehicle Forecast Impacts (Gold Book 2021)*, at slide 6 (March 12, 2021), <https://www.nyiso.com/documents/20142/19415353/04%202021%20GoldBook%20EVForecast.pdf/bc823f27-cbbd-669f-8d76-e695d59b9bed> (“Gold Book 2021”).

⁷¹ DSP at 95

NYISO’s high electrification scenario—which is less ambitious than the State’s current MHDV electrification goals—would require more than 7,000 GWh of additional electric generation, (see *Figure 2 below*).⁷²

Figure 2: Zero-emission MHDVs GWh Impacts



Depending on how it is integrated and managed, the large increase in electric load required for widespread electrification of LDVs and MHDVs will have significant implications for the costs and benefits of achieving New York’s CLCPA climate mandates. The following figures illustrate how peak load impacts can be impacted by moving EV charging to off-peak hours, (see *Figures 3 & 4 below*).⁷³

⁷² Gold Book 2021 at slide 8.

⁷³ M.J. Bradley & Assoc., *Electric Vehicle Cost-Benefit Analysis: New York 13* (2016), https://mjbradley.com/sites/default/files/NY_PEV_CB_Analysis_FINAL.pdf.

Figure 3: 2040 Projected New York PEV Charging Load, Baseline Charging

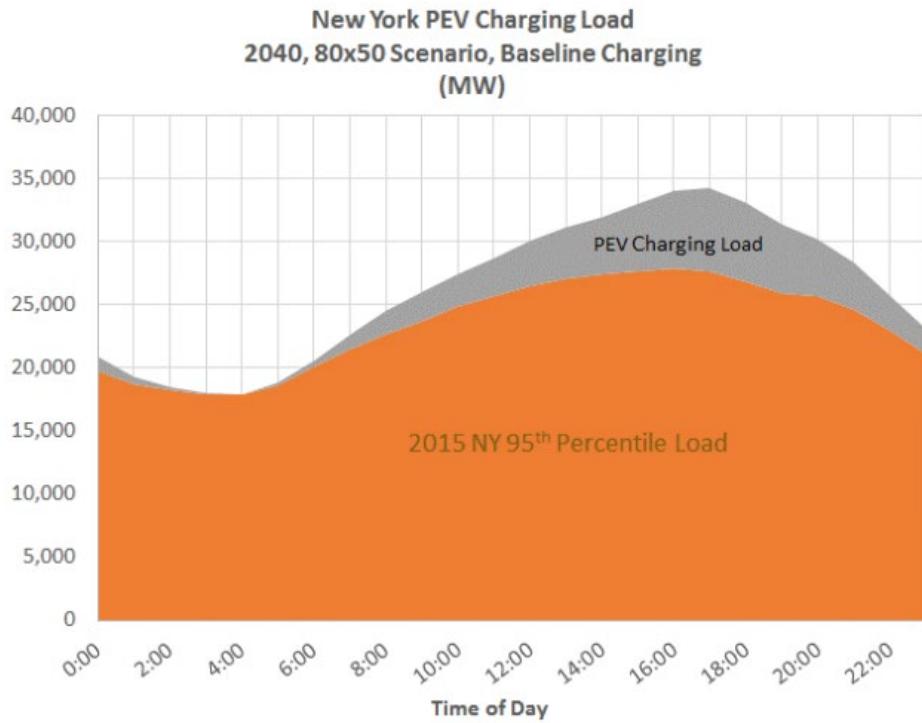
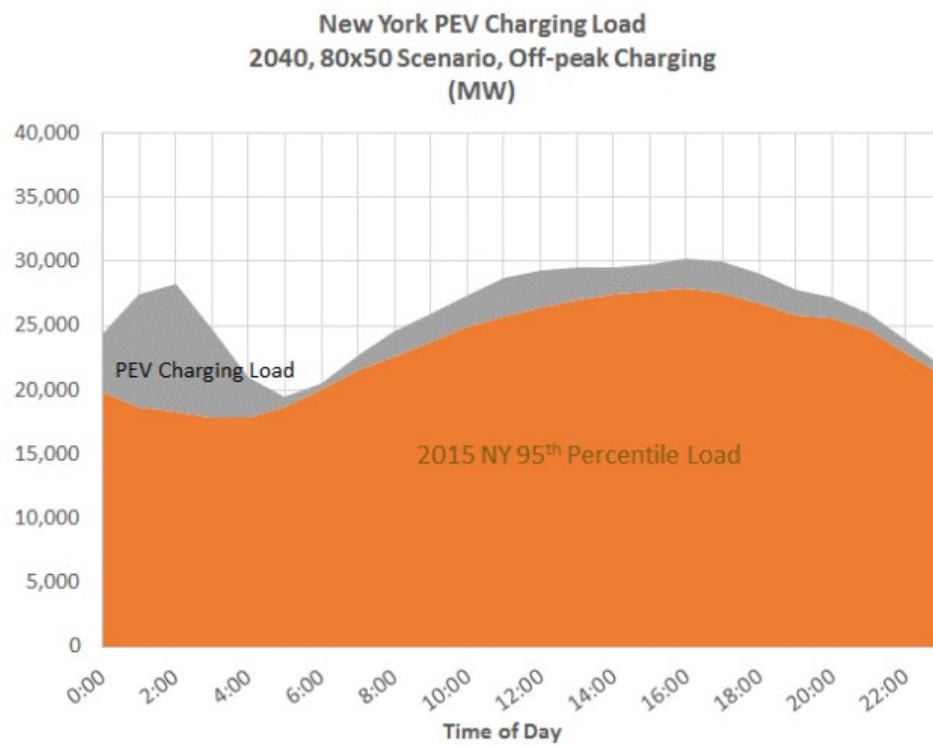


Figure 4: 2040 Projected New York PEV Charging Load, Off-peak Charging



More so than many other loads, EV load is highly flexible. Time-variant rates have consistently shown to be extremely effective in moving EV load to off-peak hours, and other more active management strategies are increasingly available.

There are multiple reasons that managing new EV load will be critical to implementation of the CLCPA:

(1) **Providing Important Grid Services:** Effectively managed EV load can provide a range of grid services, including mitigating bulk system peaks, avoiding local distribution system peaks, ramp reduction, voltage control, balancing, capacity, storage, congestion. Real world data shows that EVs are not currently—nor will they in the near term—put strain on the grid.⁷⁴ However, to maximize benefits, managed charging can help ensure that EV charging generally occurs during off-peak times thereby reducing capacity needs and, therefore, capacity costs. In addition, while the electric grid can handle every household having an EV, as data from California show,⁷⁵ managed charging helps to ensure that the local system is not overwhelmed. In addition, load management may be needed to address so-called “timer peaks” resulting from price signals that cause many vehicles to commence charging at the same time.

(2) **Facilitating the Integration of Renewable Energy:** Renewable energy may peak at times throughout the day when few EV drivers are plugging in their vehicles to charge. Managed charging can shift EV charging to times when there is excess renewable energy available on the grid.

(3) **Customer Bill Management:** The vast majority of EV charging occurs in the residential segment. Residential rate design and enrollment in utility EV programs that encourage charging during off-peak hours thus have a direct impact on fuel cost savings.

There are a variety of tools available for managing EV load to achieve these benefits:

(1) **Passive Signals:** EV load can be shaped by passive signals such as time-varying rates or other financial incentives to charge (or not charge) at certain times. Price signals can be sufficient to shift the timing of EV load—if the driver sees them—but issues around metering must be addressed, as requiring drivers to pay for a second meter for their EV can erase the cost-savings associated with discounts for off-peak charging. The telematics and communications capabilities in smart meters and smart charging stations, or in the vehicles themselves, can help avoid the need for customers to install second meters.

(2) **Appropriate rate design that increases fuel cost savings and encourages off-peak charging** also improves the utilization of the grid, spreading the costs of maintaining the system over more sales and reducing the price per kilowatt-hour to the benefit of all utility customers—even those that do not use EVs. Done right, widespread transportation electrification will benefit all utility customers and New York generally. EVs on time of use (“TOU”) rates consume less than 5% of their total kilowatt-hours during system peak hours.

⁷⁴ See Avi Allison & Melissa Whited, NRDC, *Electric Vehicles Are Not Crashing the Grid: Lessons from California* (2017), https://www.synapse-energy.com/sites/default/files/EVs-Not-Crashing-Grid-17-025_0.pdf.

⁷⁵ See Pamela MacDougall, *Steering EV Integration Forward*, NRDC (June 12, 2019), <https://www.nrdc.org/experts/pamela-macdougall/steering-ev-integration-forward>.

- (3) Demand Response: EV load can also be shaped by demand response programs, which often involve technology allowing the utility to throttle back the rate of vehicle charging during demand response events to minimize impacts to system load.
- (4) Active Management: EV load can be controlled directly by utilities or third parties through active managed charging programs. These can involve coordinating the timing and rate of charging of a number of vehicles simultaneously to achieve desired load shape.
- (5) Vehicle-to-Grid (“V2G”): Load can be shaped even further through use of V2G or vehicle-to-building (“V2B”) technology, which not only allows the utility or third party operator to control the timing of charging, but can also enable vehicles to inject power back to the system. This is especially true for MHDVs, as they tend to have more predictable down-times and larger batteries than passenger vehicles.

The utilities have a key role in ensuring that EV load is being effectively managed. Whether load management occurs through rate design, demand response programs, or active managed charging, utilities will be central to developing and implementing these programs. We urge the CAC to incorporate an additional recommendation regarding load management, calling on the Public Service Commission to establish a framework for utilities to develop managed charging programs—including new rate design—that address the full range of goals and charging contexts.

IV. Reduce VMT and Expand Access to Zero-Emissions Transportation

VMT is on an upward trend, and these trends are expected to continue without meaningful State support for policies that reduce VMT. The DSP notes that recent trends, including the prevalence of larger, single-occupancy vehicles for discretionary trips, the growth of e-commerce, and land use policies promoting sprawl have all served to increase VMT.⁷⁶ These trends will be challenging to reverse. The Integration Analysis Technical Supplement accompanying the Draft Scoping Plan notes that “vehicle ownership and VMT are expected to grow in all scenarios.”⁷⁷ But the Draft Scoping Plan does model policies that can help mitigate this growth. Scenario 4, described as the “Very Low VMT” scenario, would reduce VMT by 16% through 2050 compared to business-as-usual, while the other scenarios would only reduce VMT by 6%.⁷⁸ There is no compelling reason to not pursue a level of ambition commensurate with Scenario 4, and achieve over 2.5 times the VMT reduction and ease the path towards achievement of emission reduction mandates by limiting the number of ZEVs needed to meet transportation sector emission targets. The Council should call for an ongoing examination of VMT reduction efforts and recommend that state agencies identify further measures to maximize VMT reductions.

⁷⁶ See DSP at 94.

⁷⁷ See Technical Supplement, *supra* note 45 sec. 1 at 35.

⁷⁸ See *id.* sec. 1 at 94–97.

In general, the State needs to implement policies that will minimize reliance on personal automobiles. Increasing access to and enhancing the appeal of public transit for all New Yorkers, including urban, suburban, and rural communities, will go a long way towards reducing the use of single-occupancy vehicles for personal trips. Complementary policies for the promotion of denser, accessible, housing and transit must be considered to reduce our VMT habits. Opportunities to increase the availability of teleworking should also be explored, as teleworking can reduce VMT during the times of greatest road congestion, maximizing the benefits of those reduced vehicle miles. Other options exist to support transportation-disadvantaged New Yorkers. With the right mix of policies, the State can actually begin to reverse some of the historical inequalities associated with transportation access and build a more equitable transportation system that benefits all New Yorkers.

A. The Council should provide more guidance in recommending enhancements to public transportation.

Expanding and enhancing public transportation provides perhaps the most reliable path towards reducing VMT statewide. The DSP acknowledges that “enhancing the availability, accessibility, reliability, and affordability of public transportation services with an emphasis on unserved and underserved communities” is “one of the more impactful” strategies with regards to implementing the CLCPA.⁷⁹ By 2030, the DSP envisions that “a substantial portion of personal transportation in urbanized areas would be required to shift to public transportation and other low-carbon modes.”⁸⁰ It calls for “historic investments in expanded public transportation” to help realize this vision.⁸¹

Commenters are generally supportive of the public transit vision and strategies identified in the DSP, but more detail and specificity will be needed to bring about the transformation that the CLCPA requires. While the DSP calls for “historic,” “large-scale,” and “extensive” state and local investments into public transportation,⁸² nowhere does it offer an actionable recommendation for expanding transit services (e.g., route redesigns, frequency, hours of operation, people or destination served, on-time performance, modernizing rider experience, ease of accessing real-time information, and route planning) or boosting state and local funds. Commenters also support the greater ambition in terms of VMT reductions as modeled by Scenario 4, which includes 200 million additional passenger vehicle miles reduced in 2050 relative to Scenarios 2 and 3 from “rail improvements,”⁸³ and echo the DSP’s calls for historic, large-scale investments into public transportation operations and infrastructure.

But the FSP needs to both expand and add detail to the public transportation strategies. For example, transportation strategy T3 recommends that the State “work with communities and service providers to design strategies that increase utilization of transportation alternatives” while strategy T4 recommends that the State “facilitate the development and implementation of

⁷⁹ DSP at 107.

⁸⁰ *Id.* at 95.

⁸¹ *Id.*

⁸² *Id.* at 97.

⁸³ Technical Supplement, *supra* note 45 sec. 1 at 98.

strategies for making public transportation easier to use.”⁸⁴ Specifics are deferred to future “community-based discussions,” with no targets or benchmarks to guide those discussions.⁸⁵

While Commenters certainly support the inclusion of local community members in the decision-making process, the Council must affirmatively identify goals to guide the “historic investments” it calls for. A few good ideas are discussed in the DSP, such as dedicated bus lanes, increasing the number of routes, increasing service frequency, increasing the number of stops, introducing demand response services, and providing direct connectivity to long-distance bus and rail service.⁸⁶ But these are only offered as examples, not concrete recommendations.

Inexplicably, the DSP seems to have rejected or severely watered down several key mitigation strategies put forward by the Transportation Advisory Panel, including (a) a call to identify “implementable strategies to *significantly enhance*” public transit services “with an emphasis on unserved/underserved communities” and (b) a concrete target to “doubl[e]” service availability and accessibility of “municipally sponsored upstate and downstate suburban public transportation services statewide.”⁸⁷

Moreover, the DSP neglects to quantify the level of funding needed to achieve VMT reduction targets, which jeopardizes its efficacy in guiding future budget negotiations. It also fails to recommend any ambitious new policies for MTA—it simply refers back to projects identified in existing plans.⁸⁸ And, despite CJWG recommendations, the DSP omits any recommendations regarding expanded long-range bus service and high-speed rail,⁸⁹ ignoring a readily achievable path to reducing reliance on passenger vehicles—a goal explicitly endorsed by the CAC.

This lack of ambition must be remedied in the FSP. Specifically, we urge the CAC to (1) adopt a target of increasing public transit access by at least 50% by 2030, and 100% by 2050 for upstate and downstate suburban communities, in line with the TAP’s recommendations, (2) provide specific guidance as to appropriation levels needed to meet those targets, (3) include the CJWG’s recommendations regarding expanding high-speed rail and long-range bus service.

B. Prioritize spending on emissions-free transportation alternatives.

Commenters support transportation strategy T8, which calls for low-cost transportation options, and echo the CJWG’s call to focus intentionally on accessibility for underserved and disadvantaged New Yorkers. Part of this strategy calls for: “As part of future investments, agencies and authorities should be required to prioritize low- and zero-emission transportation

⁸⁴ DSP at 108–09.

⁸⁵ *Id.* at 108.

⁸⁶ *Id.* at 107–08.

⁸⁷ See Transportation Advisory Panel, *Appendix A: Advisory Panel Recommendations*, A-8 (2021), <https://climate.ny.gov/-/media/Project/Climate/Files/Draft-Scoping-Plan-Appendix-A.pdf> [attached to DSP at app. A] (emphasis added).

⁸⁸ DSP at 107.

⁸⁹ *Id.* at 37.

infrastructure in all activities, where feasible.”⁹⁰ In order to meet our climate and equity goals, we must invest in enabling low- and zero-emission mobility options to be safe, accessible, and effective.

New York must prioritize creating the best infrastructure possible to encourage New Yorkers shift towards emissions-free mobility options. To walk or bike to school or to the local store to buy a gallon of milk, one must feel that the mode will be the safest and most rewarding method for the time and energy invested into the trip. The T8 strategy requires funding and policy support. We agree with the DSP’s recommendation to:

Fund low-emission zones and car-free streets: The State should prioritize investments in local projects that establish low-emission transportation zones, car-free streets, and similar concepts that encourage travelers to take alternative transportation modes and support the infrastructure required to shift freight to lower-emission modes, like rail, cargo bikes, and electric trucks.⁹¹

And we must update existing legislation “to more effectively avoid new State infrastructure spending that would promote sprawl.”⁹² Encouraging density and accessible transit orientated development with walkable complete and green streets, robustly connected to transit infrastructure will encourage a lower carbon mobility lifestyle.

We also agree with the DSP’s recommendation to “fund mobility options: The State and metropolitan planning organizations (“MPOs”) should prioritize, incentivize, and expand access to funding for bike, pedestrian, transit, and complete streets projects that serve employment and population centers.”⁹³ One such model policy is Complete and Green Streets for all,⁹⁴ which combines Complete Streets with green infrastructure such as stormwater management, semipermeable surfaces, traffic-calming treatments, shaded trees, and the use of recycled materials.

C. Develop a strategy to reduce freight VMT.

The latest data show that total vehicle miles traveled from diesel-powered heavy-duty vehicles nearly doubled from 1990 to 2007, with most of that increase seen in the period since 2002.⁹⁵ In New York State, trucks move 84% of freight by tonnage and 86% of freight by value.⁹⁶ Even freight moved by other modes (e.g., freight, rail) generally requires a first- and last-mile truck connection.

⁹⁰ *Id.* at 113.

⁹¹ *Id.* at 114.

⁹² *Id.*

⁹³ *Id.*

⁹⁴ *Complete and Green Streets*, Smart Growth America, <https://smartgrowthamerica.org/resources/complete-and-green-streets/> (last visited June 20, 2022).

⁹⁵ NYSERDA GHG Inventory, *supra* note 1 at 17 tbl.10.

⁹⁶ N.Y. Dep’t of Transp., *New York State Freight Transportation Plan 56* (2019), https://www.dot.ny.gov/portal/page/portal/content/delivery/Main-Projects/projects/P11618881-Home/P11618881-repository/NYS%20Freight%20Plan%20September_2019.pdf.

The New York State Freight Transportation Plan forecasts that, given current trends, the “dominance of trucking” will last through 2040 and the highway system will remain “the backbone” of the State’s freight transportation system.⁹⁷ In fact, truck traffic is estimated to increase its share relative to other modes in 2040, with overall truck tonnage increasing 716 million tons, or 49%, compared to 2012 levels.⁹⁸ Rail and water modes are only projected to increase by 45 million tons and 28 million tons, respectively.⁹⁹ Truck trips related to “secondary traffic”—which includes warehouse and distribution centers and port drayage activities—will account for 17% of all truck tonnage by 2040, with overall tonnage increasing by over 175 million tons.¹⁰⁰

It is unclear the extent to which VMT reductions from MHDVs and freight activities were modeled in the scenarios presented to the Council. The Integration Analysis Technical Supplement suggests that the more ambitious VMT reduction policies modeled in Scenario 4 did not include measures related to freight and goods movement.¹⁰¹ Reducing the number of diesel truck trips would improve air quality in and near DACs, since major freight and goods movement hubs tend to be sited near environmental justice communities. Specifically, Commenters call for shifting freight trips from trucks and vans to maritime, rail, and e-bikes to the maximum extent possible, and urge the Council include a recommendation to that effect in the FSP. Commenters also urge the Council to recommend that the New York State Department of Transportation (“DOT”) update its Freight Transportation Plan—which was last published in 2019, prior to enactment of the CLCPA—to include concrete targets, benchmarks, and actions towards reducing emissions and VMT from freight. The Council should call for NYSERDA, DOT, DEC, and other relevant agencies to collaborate and provide policy recommendations regarding smart freight management that would apply Statewide and address specific issues for urban, suburban, and rural communities.

V. Update DOT Spending Priorities and Policies

Many of the policies identified in the DSP require DOT oversight and implementation. DOT is identified as a key stakeholder for strategies across the four “themes” identified in the Transportation chapter. Yet the DSP all but neglects DOT’s role in the specific strategies and policy components it recommends. As the agency that controls the funding of the vast majority of transportation spending in the State, the Final Scoping Plan must include a suite of DOT-specific strategies to align state transportation funding and policy with CLCPA mandates.

A. The State should analyze and redirect transportation funding.

The first step towards harmonizing state transportation policy with the CLCPA and emission reduction targets modeled by New York State is to properly measure the GHG and co-pollutant

⁹⁷ *Id.*

⁹⁸ N.Y. Dep’t of Transp., *New York State Freight Transportation Plan, Technical Memorandum 5* at 28, 31 (2017), https://www.dot.ny.gov/content/delivery/Main-Projects/projects/P11618881-Home/P11618881-repository/Tech%20Memo%205_FINAL.pdf.

⁹⁹ *Id.* at 31.

¹⁰⁰ *Id.* at 32 tbl. 6-6, 38 tbl. 6-8.

¹⁰¹ See Technical Supplement, *supra* note 45 sec. 1 at 97.

emission impact of transportation spending. The current transportation system has been informed by decades of policy choices that have left communities of color and low-income communities to bear the brunt of a wide range of adverse impacts. For example, communities of color in New York State are disproportionately exposed to particulate matter from vehicle emissions.¹⁰² Other harms range from congestion, safety risks, proximity to sensitive receptors, and damage to local roadways. Spending on transportation projects has historically served to exacerbate these inequities. The CLCPA and Scoping Plan process gives New York State a chance to rethink its approach to transportation planning and reset its policy approach in a way that prioritizes equity, public health, and climate change mitigation.

But first, policymakers and the public need an accurate, empirical analysis of proposed transportation projects. Commenters urge the Council to include a recommendation to require DOT to evaluate the projected emissions from all proposed capital projects. To ensure that State spending does not undermine the CLCPA, Commenters also urge the Council to recommend that projects that would increase emissions and/or VMT be proposed alongside alternatives that would contribute to attainment of emission reduction mandates, including those that would expand or enhance transit service or promote mode shifting away from personal automobiles. Public participation and transparency should be a core part of this strategy.

Federal transportation spending can also be used as a tool to further the State's climate and equity objectives. Many U.S. Department of Transportation programs that were traditionally earmarked for highways now provide states flexibility to propose a range of alternative projects. The FSP should recommend that DOT develops a plan to identify and take advantage of any opportunities to redirect transportation spending away from highways and projects that promote sprawl, and towards those that accelerate electrification, enhance transit services, reduce VMT, or otherwise advance CLCPA mandates and compliance strategies. Funding is a relevant issue for emission reduction strategies, but there has been no serious consideration of how the State could better allocate *existing* funding streams to support clean transportation policies. The FSP should call for DOT to quantify how much funding would be available to invest in emission reduction programs, such as a fast charging network, if existing funding streams were optimized.

Finally, given the importance of reducing VMT in meeting the CLCPA's 2030 and 2050 emission reduction mandates, Commenters also urge the CAC to recommend that DOT undertake a study to evaluate options to prohibit or severely restrict new spending on highway expansion.

B. DOT should issue regulations to ensure transportation investments are consistent with the CLCPA.

The CLCPA requires that DOT and other state agencies promulgate regulations to “contribute to achieving” the CLCPA's emissions limits. CLCPA § 8. At present, DOT policies and spending very often serve to thwart the State's very clear emission reduction mandates. While the DSP is silent on regulatory approaches to aligning DOT policies with the CLCPA, Commenters urge the Council to recommend that DOT initiate a rulemaking to ensure that State-

¹⁰² See Pinto de Moura, *supra* note 4.

funded transportation projects minimize emissions and VMT to the fullest extent possible. Such a rulemaking could be modeled on a recent policy adopted by the Colorado Department of Transportation, which sets emission reduction targets for Metropolitan Planning Organizations and the state as a whole.¹⁰³ Given the State’s other policy priorities, the rule should be designed to address GHG and co-pollutant emissions, VMT, and explicitly prioritize disadvantaged communities through a transportation equity framework that prohibits projects that add to existing harms in DACs.

C. DOT must update relevant policies, procedures, and guidance to reflect the CLCPA.

DOT has developed numerous documents that are meant to ensure agency practices are conducted in a manner consistent with relevant environmental regulations. But these documents are woefully out of date—some are over two decades old. None even mention the CLCPA.

For example, the Environmental Procedures Manual (“EPM”), which is “the comprehensive source for the [DOT]’s policy, procedure and technical guidance on environmental matters relating to the planning, design, construction and maintenance of transportation facilities” and provides the “basis for most of NYSDOT’s environmental quality assurance, training and continuous improvement processes,” was published in 2001.¹⁰⁴ While it has been partially updated since then, there is no discussion of agency obligations under the CLCPA. This manual continues to serve as “comprehensive guidance for addressing transportation projects’ air quality issues for NYSDOT-sponsored projects as well as for projects that are not sponsored by NYSDOT,” and is thus in many ways the starting point for evaluating the impacts of public and private transportation projects.¹⁰⁵

DOT’s most recent “Environmental Policy” dates back even further, to 2000.¹⁰⁶ It establishes as department policy a commitment to “[s]eek opportunities to cooperatively advance Federal, State and local environmental policies, programs and objectives” and requires DOT divisions evaluate ways to improve air quality, encourage transit, promote non-motorized modes, reduce use of non-renewable combustion fuels, and increase energy efficiency.¹⁰⁷ Another guidance document, dating back to 1999, is incorporated into the EPM and directs DOT to (1) “ensure all necessary steps are taken in planning, design, and construction to avoid and minimize adverse effects of transportation projects and operations on important elements of the environment and

¹⁰³ See *Greenhouse Gas (GHG) Program*, Colo. Dep’t of Transp., <https://www.codot.gov/programs/environmental/greenhousegas> (last visited June 24, 2022).

¹⁰⁴ DOT, *Environmental Procedures Manual: Introduction 1* (Feb. 2001), <https://www.dot.ny.gov/divisions/engineering/environmental-analysis/repository/epmltr2.pdf>.

¹⁰⁵ See, e.g., Inter-departmental Memo from George Baptista, Deputy Comm’r of Env’t Res., Town of Oyster Bay, *Re: Draft TEQR Report — Syosset Park Warehouse 37* (2020), https://oysterbaytown.com/wp-content/uploads/305-Robbins-Lane_Syosset-TEQR-Report-final-draft12_15_2020Compiled.pdf.

¹⁰⁶ See N.Y. Dep’t of Transp., *Environmental Policy*, code 1.6-3 (June 2000), <https://www.dot.ny.gov/divisions/engineering/environmental-analysis/repository/policyen.pdf> (“DOT Environmental Policy”).

¹⁰⁷ *Id.*

adjacent communities,”¹⁰⁸ (2) incorporate mitigation measures in DOT capital and maintenance projects, and (3) leverage state and federal highway funds for “project-specific avoidance, minimization, mitigation and enhancement efforts” and to advance broader environmental policies, among other policies.¹⁰⁹

Given the importance of these documents for setting DOT policy, and their use in evaluating and mitigating environmental impacts for non-DOT sponsored projects, it is absolutely critical that they be updated and streamlined to highlight the Department’s vital role in implementing the CLCPA. Commenters urge the Council to recommend that DOT update and streamline all of its various internal policy and guidance documents to reflect the agency’s obligations under the CLCPA, which should include a framework to accelerate transportation electrification, reduce VMT, expand and enhance public transit and other non-motorized modes, improve air quality in DACs, and implement section 7 of the CLCPA.

VI. Prioritize Environmental Justice and DACs

Transportation emissions have a well-documented disproportionate impact on communities of color and low-income communities in New York, and diesel trucks and buses in particular have an outsized contribution to disparate health outcomes. The DSP notes that “[d]iesel trucks and port equipment are one of the largest sources of local air pollution in Disadvantaged Communities,” and replacing such equipment with ZEV technology “would have a substantial impact on improving air quality statewide, especially in Disadvantaged Communities.”¹¹⁰ Thus, it is vital that the CAC intentionally support strategies to accelerate retirement of diesel vehicles and deployment of EVs where air quality improvements are most needed to further the CLCPA’s equity provisions.

Commenters are generally supportive of the pathways identified in the DSP that would attain emissions limits through “accelerated ZEV adoption and early retirement of internal combustion vehicles,”¹¹¹ rather than “low-carbon fuels,” and urge the Council to advocate for policies that will prioritize retirements and ZEV deployments in and near DACs (such as incentives for vehicles or chargers, and the creation of low-emission zones).

There are references throughout the DSP to policies that would benefit overburdened communities or DACs, which Commenters endorse, but the FSP should include more forceful and tangible recommendations to embed equity considerations into the heart of transportation sector mitigation strategies. For example, the DSP recommends that the State fund purchase incentive programs for ZEV trucks and buses “with a focus on fleets operating in LMI and overburdened communities, small fleets, and school buses, as well as non-road vehicles and equipment such as airport ground support equipment, port cargo handling equipment,

¹⁰⁸ Gary McVoy et al., N.Y. Dep’t of Transp., *The NYSDOT Environmental Initiative Guidelines and Procedures for a New Paradigm* 3 (1999), <https://www.dot.ny.gov/divisions/engineering/environmental-analysis/repository/eitrbdot.pdf>.

¹⁰⁹ DOT Environmental Policy, *supra* note 107 at 3.

¹¹⁰ DSP at 105.

¹¹¹ *Id.* at 96; *see also* DSP at 73.

construction, and farm equipment.”¹¹² Similarly, the DSP calls for “[p]reference” in terms of state infrastructure investments for MHDV fleets “adversely impacting LMI communities that have been disproportionately burdened by the impacts of air pollution.”¹¹³

Neither of these recommendations go far enough in centering equity and prioritizing DACs. Many of these strategies reference fleets that most adversely impact DACs or other overburdened communities—but the identity of these fleets is unknown, meaning these recommendations lack practical effect. The FSP therefore needs to be strengthened to include the recommendation that state agencies collaborate to identify the specific fleets that most adversely impact air quality in and around each DAC and other environmental justice communities, and the FSP should also recommend that the State develop a cross-agency plan to prioritize turnover of diesel vehicles and equipment to ZEVs in these areas.

Similarly, Commenters generally support the DSP’s recommendations regarding port electrification but urge for stronger, and more specific language in the FSP. As part of transportation strategy T2, the DSP simply states that “[m]arine operations and port facilities are envisioned to be 100% electric by 2050,”¹¹⁴ but offers no further detail on how the DSP will ensure this target is met. Commenters find the Council’s commitment to 100% port electrification laudable, but call for specific recommendations in the FSP—such as a requirement for ports to develop clean air plans that will phase-out diesel equipment as expeditiously as possible, and State funding to support such plans—to ensure this goal is achieved.

Freight electrification strategies, such as the warehouse ISR referenced above, would also prioritize goods movement hubs for electrification and the Council should support such strategies as core strategies that meet the CLCPA’s twin emission reduction and equity goals. The language in transportation strategy T8, which references State support for “infrastructure required to shift freight to lower-emission modes, like rail, cargo bikes, and electric trucks”¹¹⁵ needs to be clarified and expanded upon, as this infrastructure will be critical to realizing emissions reductions and health benefits in DACs.

Commenters also generally urge for more specific and forceful recommendations regarding the provision and allocation of State incentives for ZEVs and supporting infrastructure. For example, consider transportation strategy T1, regarding light-duty ZEV adoption, which identifies “enhanced ZEV purchase incentives” as a required component.¹¹⁶ The equity provisions of this recommendation do not go far enough in prioritizing emissions reductions for DACs and environmental justice communities. The recommendation mentions that “the scenario that relies more heavily on expedited electrification will require the establishment of additional incentives to retire internal combustion vehicles early,” without offering state agencies any guidance or framework for how to design and implement those targeted incentives.¹¹⁷ In discussing a potential feebate program, the DSP only suggests that a policy “can” be designed to

¹¹² DSP at 106.

¹¹³ *Id.*

¹¹⁴ DSP at 97.

¹¹⁵ *Id.* at 114.

¹¹⁶ *Id.* at 103.

¹¹⁷ *Id.*

support “other policy goals” like higher rebates and exemptions for low- and moderate-income customers.¹¹⁸ The FSP should make explicit that such programs, if adopted, *must* comply with the CLCPA’s equity provisions—targeting at least 35% of investments to DACs—and should affirmatively identify ways to prioritize DACs and environmental justice communities. Measures to boost availability and offer incentives for used EVs, for example, can make them a viable choice for more New Yorkers. And the FSP should provide some meaningful guidance to inform the Legislature and policymakers about the scope and duration of incentive programs (for LDVs and MHDVs) that will be needed to phase out tailpipe emissions in DACs as expeditiously as possible. To the extent possible, the State should establish centralized procurement programs for major LDV and MHDV fleets (as the Legislature codified for school buses), which should in turn trigger the CLCPA’s 35% investment mandate for DACs.

Other policies that would serve to expedite emissions reductions in overburdened areas should also be highlighted and endorsed. One example is the establishment of low-emission zones. Commenters support the recommendation in transportation strategy T8, in which the Council recommends that the State “prioritize investments in local projects that establish low-emission transportation zones, car-free streets, and similar concepts that encourage travelers to take alternative transportation modes.”¹¹⁹ But this needs to be fleshed out to be truly actionable. At a minimum, the FSP should call for a study to evaluate the feasibility and benefits of low-emission zones for urban areas most impacted by transportation emissions.¹²⁰

The State will not be able to meet binding emissions limits unless zero-emission technologies, including ZEVs, take hold quickly in low-income communities and communities of color that have historically been left behind or ignored by clean transportation policies. The Council must be creative and innovative in recommending transportation sector strategies that can reduce emissions while reducing structural inequities in transportation pollution and access to clean, affordable transportation options. Commenters urge the Council to include in the FSP a recommendation to investigate and support novel municipal e-mobility programs, modeled on the Green Raiteros car-sharing program in the Central Valley of California, that can leverage ZEVs and supporting infrastructure to benefit transportation disadvantaged New Yorkers so as to increase economic opportunity and overall quality of life.¹²¹

VII. Conclusion

In summary, the FSP should include recommendations to:

- Adopt an “electrification-first” approach to the transportation sector that minimizes “low-carbon fuels” and other false solutions to the fullest extent possible;

¹¹⁸ *Id.*

¹¹⁹ *Id.* at 114.

¹²⁰ A bill introduced in the State Assembly, A9799, would direct DEC to conduct such a study and the Council should endorse this bill.

¹²¹ See Evan Halper, *A Neglected California City Reinvents Itself with Electric Cars — and Plots a Road Map for the Nation*, L.A. Times (Jan. 10, 2022), <https://www.latimes.com/politics/story/2022-01-10/neglected-california-town-reinvents-itself-with-electric-cars-and-plots-a-roadmap-for-the-nation>.

- Opt in to all enforceable ZEV mandates and emission standards available, including California regulations and mandates for buses and other public fleets;
- Accelerate freight electrification, including through endorsing a warehouse ISR;
- Initiate an inter-agency, periodic planning process to assess the adequacy of EV charging installations and programs;
- Enable utilities to better facilitate the transition to widespread fleet electrification;
- Significantly expand (and electrify) public transit and zero-emissions transportation modes;
- Reduce freight VMT;
- Update DOT regulations and guidance, and better use transportation spending towards CLCPA compliance; and
- Prioritize DACs

Respectfully submitted,

Acadia Center
 All Our Energy
 Alliance for a Green Economy
 Brookhaven Landfill Action and
 Remediation Group
 Catskill Mountainkeeper
 Clean Air Coalition of WNY
 Climate Reality Project, Capital Region NY
 Chapter
 Climate Reality Project, Finger Lakes
 Greater Region NY Chapter
 Climate Reality Project, Hudson Valley and
 Catskills Chapter
 Climate Reality Project, Long Island
 Chapter
 Climate Reality Project, NYC
 Climate Reality Project, Westchester NY
 Chapter
 Climate Reality Project, Western New York
 Chapter
 Climate Solutions Accelerator of the
 Genesee-Finger Lakes Region
 GreenLatinos
 Committee to Preserve the Finger Lakes
 Community Food Advocates
 CUNY Urban Food Policy Institute
 Earthjustice

Environmental Advocates NY
 Fossil Free Tompkins
 Gas Free Seneca
 Green Education and Legal Fund
 HabitatMap
 Hotshot Hotwires
 Jobs to Move America
 Long Island Progressive Coalition
 Nassau Hiking & Outdoor Club
 Network for a Sustainable Tomorrow
 New Clinicians for Climate Action
 New York City Environmental Justice
 Alliance
 North Brooklyn Neighbors
 NY Renews
 People of Albany United for Safe Energy
 PUSH Buffalo
 Roctricity
 Seneca Lake Guardian
 Sierra Club
 South Shore Audubon Society
 Tri-State Transportation Campaign
 Union of Concerned Scientists
 University Network for Human Rights
 UPROSE
 WE ACT for Environmental Justice
 350NYC



Waste

I. Introduction

In New York, waste is responsible for direct greenhouse gas (“GHG”) emissions of 46 million metric tons of CO₂ equivalents (“MMT CO₂eq”), accounting for 12% of the state’s total gross emissions.¹ However, waste-related emissions are far broader than just those included in this direct estimate, as a large proportion of waste generated within the state is exported across state borders. This leads to an additional 16 MMT CO₂eq of out-of-state emissions from waste generated within New York State (which would increase New York’s total emissions by 4%).² The majority of waste emissions are produced as methane, which has a global warming potential 84 times greater than CO₂.³ Thus, reducing waste emissions is critical to achieving CLCPA targets and particularly important to mitigating methane emissions.

¹ N.Y. Dep’t Env’t Conservation, *Waste: 2021 NYS Greenhouse Gas Emissions Report* 3 Table SR4.1 (2021), https://www.dec.ny.gov/docs/administration_pdf/ghgwaste21.pdf.

² *Id.*

³ See E. Rsch. Grp., *Technical Documentation: Estimating Energy Sector Greenhouse Gas Emissions Under New York State’s Climate Leadership and Community Protection Act* 65 app. E (2021), https://www.dec.ny.gov/docs/administration_pdf/energyghgerg.pdf; see also Intergovernmental Panel on Climate Change, *Climate Change 2014: Synthesis Report* 87 (2014), https://www.ipcc.ch/site/assets/uploads/2018/02/SYR_AR5_FINAL_full.pdf.

The Draft Scoping Plan (“DSP”) recognizes that accurately measuring the GHG emissions from waste must account for extraction, production, transport, usage, and waste management.⁴ However, the DSP stops short of including sufficiently high-impact policies to prevent products from becoming waste and curbing excessive production. The Final Scoping Plan (“FSP”) should emphasize more transformative strategies that prevent products from becoming waste in the first place rather than end-of-lifecycle strategies focused on emission capture that fail to reduce waste generation.

The Waste Chapter of the FSP should be constructed to move the State toward zero waste. While the DSP nods to a zero-waste future in its vision for 2050 and recognizes that a dramatic shift is needed to ensure “landfills are only used sparingly,” it lacks a holistic, coordinated framework for putting an end to landfilling. The DSP also does not include plans to end incineration, a significant oversight which would set us backward in terms of the emissions and environmental justice mandates of the law. The FSP should center zero-waste as the driving policy to achieve the climate goals and organize solutions in terms of the importance of waste hierarchy – reduce, reuse, recycle must be a core part of the waste management and emissions reduction strategy. In addition, the plan should improve consideration of environmental justice impacts of waste management.

While there are many positive policy solutions identified in the DSP, there are several gaps that if not addressed in the FSP, will significantly impede our progress to 85% emission reduction mandates. In these comments, we will focus on the following: the DSP’s lack of a comprehensive and wide-ranging plan for organics diversion; the DSP’s lack of clear policy pathways and priorities for transformative waste reduction, reuse, recycling, and extended producer responsibility; the DSP’s recommendation of beneficial uses of biosolids and biogases; and the DSP’s failure to identify a recommendation to phase out incineration.

II. Organic Waste Reduction and Recycling

Organic food and yard waste is a major contributor to total waste emissions. In our homes, restaurants, and stores, we waste about one-third of the food produced and most of that is dumped in landfills where it rots and releases methane.⁵ Food waste alone accounts for approximately 18% of the total municipal waste stream in New York.⁶ This amounts to nearly 4 million tons of food waste annually, of which only 3% is currently diverted from landfills or combustion facilities.⁷

We support the overall organic waste strategy in the DSP and its emphasis on the importance of reducing food waste and diversion of food scraps. However, the DSP lacks a comprehensive

⁴ N.Y. Climate Action Council, *Draft Scoping Plan* (“DSP”) 236 (2021), <https://climate.ny.gov/-/media/Project/Climate/Files/Draft-Scoping-Plan.pdf>.

⁵ FAO, *Global Food Losses and Food Waste: Extent, Causes and Prevention* (2011), <https://www.fao.org/3/mb060e/mb060e.pdf>.

⁶ See DSP at 241.

⁷ Indus. Econ., Inc., *Benefit-Cost Analysis of Potential Food Waste Diversion Legislation* 1 (2017), https://s3.amazonaws.com/dive_static/diveimages/Benefit-Cost-Analysis-of-Potential-Food-Waste-Diversion-Legislation.pdf.

approach to food and yard waste diversion, such as mandatory state-wide composting. As described in detail below, the FSP must set clear targets and timelines for achieving improvements in food composting rates and reductions in food waste.

A. The FSP should include broader strategies to facilitate state-wide composting.

The FSP should include improved strategies to require composting and explore opportunities to close existing loopholes and caveats that reduce the effectiveness of current programs. For example, the Food Donation and Food Scraps Recycling Law requires food scrap generators to recycle their food waste only if within 25 miles of a composting, digesting, or other food waste recycling facility.⁸ This unreasonably low distance limit significantly undermines the possible effectiveness of the law since, given the dearth of organics recycling facilities, this leaves most food scrap generators uncovered. This distance limit is unnecessary and unreasonable – for example, garbage is often trucked much farther than 25 miles to landfills, including out of state. This short distance also creates very small catchment areas for potential new recycling facilities, thus squelching any possible incentives for new composting or recycling facilities. The FSP must urge the legislature to revisit and revise this limit.

In addition, the law contains certain exemptions that further undermine its effectiveness. Specifically, it exempts several large food waste generators, and it does not apply in New York City where Mayor Adams recently proposed to suspend the expansion of the City’s composting program.

The DSP recommends that the law be amended to “phase in organics source-separation requirements, eventually ban combustion and landfilling of organics, and require a surcharge (fee per ton) on all waste generated in New York.”⁹ While we support these recommendations — in particular, a ban on dumping organics in landfills is one of the most effective opportunities the State has to reduce this significant GHG source¹⁰ — the DSP does not go far enough. The FSP should also recommend that (as noted above) the law eliminate or significantly increase the 25-mile limit, and that it eliminate the exemptions for large food waste generators and New York City. The FSP must prioritize State-side municipal collection of organics from all businesses and all residences. The FSP should facilitate a system in which local-scale composting is available and equitably geographically distributed (e.g., transforming local transfer stations into well-run composting/sorting/processing sites). Additionally, the FSP should recommend more on-site distributed composting for yard waste, which makes up about 12% of the waste stream.¹¹

B. The FSP should include bold strategies to reduce food waste.

While it is critical to increase the number of composting and other organics recycling facilities around the state, especially near cities where the bulk of the state’s food waste is generated, is critical, policies to help achieve food waste reduction are equally important and need more robust discussion in the FSP. Tackling emissions from food waste requires policies

⁸ See DSP at 239-240.

⁹ DSP at 241.

¹⁰ See Peter H. Lehner and Nathan A. Rosenberg, *Farming for Our Future: The Science, Law, and Policy of Climate-Neutral Agriculture* 224-227 (2021).

¹¹ Facts and Figures about Materials, Waste and Recycling National Overview: Facts and Figures on Materials, Wastes and Recycling, EPA., <https://www.epa.gov/facts-and-figures-about-materials-waste-and-recycling/national-overview-facts-and-figures-materials> (last updated July 14, 2021).

that incentivize both waste reduction and waste diversion. The FSP should focus on food waste reduction policies such as bulk food and food dispensary models, delivery system modifications in public institutions (such as changing dining room policies in state educational or correctional facilities), taxing overproduction of food, implementing enhanced digital demand planning systems in grocery stores to minimize waste, and using state purchasing power by reducing food waste and shifting to more climate-friendly – and healthier – menus in public institutions.

Lastly, the FSP should take bold steps to recommend a ban on the incineration or disposal of food waste. Limited exceptions may apply when food or yard waste that is too contaminated with plastic and other contaminants to meet a compost facility’s standards.

III. Waste Reduction and Reuse

The Climate Justice Working Group (“CJWG”) responded to Strategy W2, *Waste Reduction, Reuse, and Recycling section*, stating that “the overall lack of emphasis on waste reduction and local scale diversion practices was staggering.”¹² Reducing waste at the source is essential. It not only reduces greenhouse gas emissions but also lowers the cost of disposal for municipalities and reduces pressure on municipal waste, recycling, and composting systems. Consistently wasting valuable resources whether they are food, home goods, hygiene products, or consumer goods has additional upstream economic, labor, and environmental impacts. These wasted resources have economic, resource, and labor inputs related to their production, processing and distribution. For example, a significant amount of total water, fuel, and fertilizer used in the U.S. was found to produce food that was subsequently wasted.¹³

A per ton surcharge on waste is a tried-and-true approach to creating a funding stream for waste reduction, reuse, and recycling infrastructure and programs while disincentivizing landfilling and incineration as waste management practices. Typically, these surcharges are added to per-ton tipping fees, and they can be charged to waste haulers or even at the generator-level so that households and businesses are taxed directly based on the waste they generate. These fees are also necessary to help shift consumer behavior and consumption. Fees collected can then be deposited in a dedicated fund and invested back into waste reduction measures, recycling improvements, and reuse/refillable infrastructure.

While the DSP recommends a surcharge on all waste generated in-state as a waste reduction strategy, this high-impact recommendation lacks detail and fails to recommend fees on overproduction. The FSP should add detail to the surcharge proposal and should immediately implement it as we work to reduce the volume of waste sent to landfills and incinerators.¹⁴

The reuse recommendations in the plan should also be fleshed out further, and the FSP should provide more specificity on the policy tools needed to reduce problematic single-use

¹² DSP App. B at B-20.

¹³ Esma Birisci & Ronald G. McGarvey, *Cost-versus Environmentally-Optimal Production in Institutional Food Service Operations*, 82 Socio-Economic Planning Sciences 101169, 3 (2021) <https://doi.org/10.1016/j.seps.2021.101169>.

¹⁴ Sophia Jones, *Waste Surcharges to Fund Composting and More*, Inst. for Loc. Self-Reliance, <https://ilsr.org/rule/waste-surcharges/> (last visited June 17, 2022).

materials.¹⁵ As recommended in the DSP, requiring retail outlets and food service to give single-use disposable products to their customers upon “request only” is a sound way to start turning off the tap of unwanted, unneeded plastic. We strongly support “Skip the Stuff” type policies to phase-out single-use plastic items but also encourage that the FSP give more guidance on what single-use products should be addressed.

Another critical aspect of waste reduction needed in the FSP is policy designed to support reusable and refillable options. The DSP mentions this in passing but fails to outline what actual policy solutions should be advanced and how to scale and fund reusable/refillable infrastructure. The FSP should include more concrete policies. For example, takeaway food containers may be a sensible place to start in terms of recommending reusable containers. Plastic containers for food delivery are overproduced, often unrecyclable, and unnecessary, as there are existing alternatives. For example, DeliverZero is a successful alternative to disposable plastic take-out containers, providing containers that can be washed and reused 1,000 times apiece.¹⁶ DeliverZero services more than 130 restaurants in two boroughs of New York City. In addition, retailers such as Amazon should use reusable shipping containers (see more below). And in terms of refillable infrastructure, the FSP must recommend policies that require certain food to be provided in bulk, wide-spread development of bulk food dispensaries, and development of facilities designed to wash and redistribute refillable containers (e.g., bottle washing facilities).

IV. Recycling and Expanded Producer Responsibility

An effective and efficient recycling system is an ever-critical component to a waste strategy for curbing carbon emissions. Recycling helps save energy in the processing of materials for industrial and consumer use and reduces our needs for virgin resources, such as oil for plastics. Recycling programs also reduce the flow of materials, including organics, into landfills. Unfortunately, New York’s recycling system is sub-optimal and markets for recyclable materials have been in crisis since 2018 when China stopped buying the world’s recyclable material, in particular paper products from New York (known as the China National Sword policy).¹⁷ While end-markets for some recyclable materials have improved in recent years, municipal recycling programs are still suffering losses amounting to millions of dollars each year, resulting in some municipal programs’ stopping the service altogether. Without effective end markets for recyclable material, more is being sent to landfills and incinerators, which is not compatible with reaching our climate goals.

The FSP must outline more clearly what policy measures are needed to fix our recycling system, as an optimal system is necessary to complement waste reduction efforts and extended producer responsibility (“EPR”) measures discussed below. In particular, universal labeling, expansion of the bottle bill, and support for municipal funding of curbside programs through

¹⁵ DSP at 242.

¹⁶ DeliverZero, <https://instore.deliverzero.com/> (last visited June 17, 2022).

¹⁷ Cheryl Katz, *Piling Up: How China’s Ban on Importing Waste Has Stalled Global Recycling*, Yale Environment360 (Mar. 7, 2019), <https://e360.yale.edu/features/piling-up-how-chinas-ban-on-importing-waste-has-stalled-global-recycling>.

EPR are necessary. The FSP must also ensure there is no space for advanced or chemical recycling.

In addition, banning production of non-recyclable materials would help reduce the volume of material crowding recycling streams and the volume of waste sent to landfills. Among the different categories of plastic, PET plastic bottles (labeled with a number 1 in the recycling triangle) and HDPE milk jugs (labeled as number 2) are recycled most consistently due to their economic viability.¹⁸ Plastic resin types 3 and above, black plastics, and mixed materials (i.e., half film plastic half PETE plastic) are unlikely to be recyclable. Yet, these non-recyclable materials have been contaminating recycling streams because of their misleading recycling symbol label.¹⁹

In addition, banning non-recyclable plastics would help thwart emerging, non-proven, highly polluting chemical recycling technologies that burn these plastics, often producing fuels, which is inconsistent with the CLCPA. These technologies are marked with failure and waste, with only eight of 37 proposed facilities since 2000 currently operating and none of these making new plastic.²⁰ These failed projects wasted over \$2 billion in investments and taxpayer funds. Several of them ended with lawsuits over breach of contract and two with multimillion dollar fraud judgements.²¹ The FSP should identify chemical or “advanced” recycling as inconsistent with meeting the mandates of the CLCPA and recommend it not be considered as a recycling solution.

Importantly, we also strongly support the DSP recommendation to expand and update the 1982 Bottle Bill and the FSP should prioritize this recommendation. Over its 40-year history, New York’s Bottle Deposit Law has proven to be an effective program in reducing litter and increasing recycling rates. It reduces roadside container litter by 70%, has a redemption rate of 64%, and in 2020, helped to recycle 5.5 billion plastic, glass, and aluminum beverage containers totaling 241,505 tons, at no cost to local governments.²² By expanding the Bottle Deposit Law, New York can lead the way in reducing waste, litter, and greenhouse gas emissions.

¹⁸ Pang-Chieh Ho, *Smarter: Which Plastics Are Actually Recyclable?*, Consumer Reports (Mar. 1, 2022), <https://www.consumerreports.org/recycling/smarter-which-plastics-are-actually-recyclable-a4433898936/>.

¹⁹ *Understanding Which Plastic Types Can be Recycled*, Rogue Disposal (Feb. 8, 2021), <https://roguedisposal.com/resources/education/recycling/understanding-which-plastic-types-can-be-recycled>.

²⁰ D. Patel et al., *All Talk and No Recycling: An Investigation of the U.S. “Chemical Recycling” Industry*, Global Alliance for Incinerator Alternatives 40 (2020) (citing Neil Tangri, *Waste Gasification & Pyrolysis: High Risk, Low Yield Processes for Waste Management* (2017)); Veena Singla, NRDC, *Recycling Lies: “Chemical Recycling” of Plastic is Just Greenwashing Incineration* (2022).

²¹ Ivy Schlegel, Greenpeace Int’l, *Deception by the Numbers* 34 (2020), https://www.greenpeace.org/usa/wp-content/uploads/2020/09/GP_Deception-by-the-Numbers.pdf. (Citing Tangri N and Wilson A, Global Alliance for Incinerator Alternatives, *Waste Gasification & Pyrolysis: High Risk, Low Yield Processes for Waste Management* (2017), <https://www.no-burn.org/wp-content/uploads/Waste-Gasification-and-Pyrolysis-high-risk-low-yield-processes-march-2017.pdf>; Susan Thorneloe et al., EPA, *Assessment of Municipal Solid Waste Energy Recovery Technologies* xiv (2020), https://cfpub.epa.gov/si/si_public_record_report.cfm?dirEntryId=350673&Lab=CESER&simplesearch=0&showcriteria=2&sortby=pubDate&timst%20type=&datebeginpublishedpresented=11/22/2019 (last visited Nov. 22, 2021).

²² *New York’s Bottle Bill: Returnable Container Act (RCA)*, N.Y. Dep’t Env’t Conservation, <https://www.dec.ny.gov/chemical/8500.html> (last visited June 17, 2022); *Bottle Bill Resource Guide: New York*, Container Recycling Inst., <https://www.bottlebill.org/index.php/current-and-proposed-laws/usa/new-york> (last visited June 16, 2022).

Lastly, the FSP should recommend the State lead by example and start off a path of zero waste. As the DSP mentions, this starts with reviewing State procurement standards and lifecycle decision making tools, but the FSP should recommend fixing the State Surplus Property Program to allow surplus property to be donated, which is currently prohibited under this program.

Extended Producer Responsibility (“EPR”) frameworks and policies that attribute responsibility for waste management to producers rather than government and taxpayers are essential for the future of strategic waste reduction, management, and funding. These models are not new in New York but need to be expanded to cover several product streams given that the volume of the material that goes through curbside recycling is not sustainable from a waste volume perspective or from a municipal financing perspective.

A significant contributor to our recycling crisis is the fact that consumer brand-owners are disconnected from the end-of-life management of their product packaging. They have no incentive to reduce packaging waste, create reusable products, make packaging easier to recycle, or boost market demand by using more recycled content. EPR for product packaging and paper would shift the responsibility for the recovery of materials in curbside recycling programs from local governments and taxpayers to producers and brand owners. In doing so, EPR attributes recycling costs to those who benefit from the sale of consumer goods and decouples the financial risk from municipalities. An EPR program for paper and packaging also needs to include strong environmental standards and post-consumer content goals to drive real progress in waste reduction, increased recyclability, less toxic packaging, and decrease demand on natural resources.

The FSP must be clear that EPR policies and frameworks do not reduce waste in and of themselves but need to be coupled with other policies that reduce waste, such as an EPR policy. The FSP should prioritize an EPR policy for plastic and paper packaging that includes standards and targets for waste reduction, post-consumer content, elimination of toxins in packaging, and that prohibits chemical recycling.

V. Phase Out of Incineration

Incineration is the third greatest contributor of GHGs in the waste sector (7%) after landfill and wastewater treatment, yet 15% of municipal waste stream is incinerated.²³ Waste incineration is incompatible with climate action and is both financially costly to municipalities and harmful to public health. While the DSP relies heavily on incineration as a solution to where “all of the above waste” can be diverted when landfills are being decommissioned, it does not call for the phase out of existing incinerators.

Waste-to-energy incineration facilities are the most expensive way to produce electricity, and the amount of electricity they produce is modest relative to the harm caused by the air pollutants released.²⁴ New York’s waste incinerators perform significantly worse in terms of cancer-causing hazardous air pollutants compared to other power plants in the state. The

²³ DSP at 235.

²⁴ U.S. Energy Information Administration (Department of Energy), *Capital Cost Estimates for Electricity Generation Plants* (2010), http://www.eia.gov/oiaf/beck_plantcosts/pdf/updatedplantcosts.pdf.

technology is best for reducing the *volume* of waste, but the ash left over after burning still needs to be specially landfilled.

Moreover, burning waste perpetuates environmental injustice: in the U.S., nearly 80% of waste incinerators are located in low-income communities and/or communities of color.²⁵ It is a false solution to the problem of waste management — waste-to-energy as a waste management tactic is not aligned with Section 7(3) of the Climate Law.

These incinerators emit particulate matter (PM2.5 and PM10) which is linked to lung and heart disease, heavy metals like lead and mercury, and toxic chemicals like per- and polyfluoroalkyl substances (“PFAS”) and dioxins which build up in the human body as well as in other lifeforms and the environment. Per unit of waste processed, local pollutant emissions from waste incineration are generally worse than those from coal-fired power plants. Burning waste releases 14 times as much mercury as coal-fired power plants.²⁶ As New York State has dramatically reduced its mercury emissions, mercury pollution from waste burning remains a high source of this unnecessary, damaging air pollutant.²⁷ The inhalation of mercury vapor can produce harmful effects on the nervous, digestive and immune systems, lungs and kidneys, and may be fatal. The inorganic salts of mercury are corrosive to the skin, eyes and gastrointestinal tract, and may induce kidney toxicity if ingested. There is no safe level of exposure to mercury.²⁸

Waste-to-energy also burns more energy than it produces— sometimes not even enough to run the incinerator itself. Financially, waste-to-energy has proven to be a bad investment for municipalities and has even bankrupted Harrisburg, Pennsylvania. The financing scheme to fund its trash-burning plant left the 150-year-old city struggling to pay \$68 million in interest in 2016.²⁹ Municipal bankruptcies are very rare. Additionally, tip fees at waste incinerators are two or three times higher than recycling or composting costs, and composting jobs create four times the number of local jobs per unit of waste processed than incinerators. The only conceivable tangible benefit of waste-to-energy is the reduction of the volume of waste, but volume can and should be tackled through sorting waste properly for waste elimination and reduction, composting, re-use, and recycling.

There is also the moral issue of continuing to burn trash where incinerators are located (i.e., environmental justice communities, disadvantaged communities, low-income communities,

²⁵Ana I. Baptista & Adrienne Perovich, *The New School: Tishman Env’t Design Ctr., U.S. Municipal Solid Waste Incinerators: An Industry in Decline* 4 (2019), https://static1.squarespace.com/static/5d14dab43967cc000179f3d2/t/5d5c4bea0d59ad00012d220e/1566329840732/CR_GaiaReportFinal_05.21.pdf.

²⁶N.Y. Dep’t of Env’tl Conservation, Case No. 03-E-0188, *Matter of the Application of Covanta Energy Corporation for Inclusion of Energy from Waste Facilities as an Eligible Technology in the Main Tier of the Renewable Portfolio Standard Program* (2011).

²⁷Laura Haight, N.Y. Pub. Int. Rsch. Grp., *Connecting the Dots on Mercury Pollution: How Honeywell’s Failure to Capture Discarded Mercury Thermostats Contributes to Elevated Mercury Emissions in New York* 2 (2011), https://www.nypirg.org/pubs/enviro/toxics/2011.12.21_NYPIRG_Honeywell_Report.pdf.

²⁸*Mercury and Health*, World Health Org. (Mar. 21, 2017), <https://www.who.int/news-room/fact-sheets/detail/mercury-and-health>.

²⁹Lisa Lambert, *Special Report: The Incinerator That May Burn Muni Investors*, Reuters (May 12, 2010), <https://www.reuters.com/article/us-muni-investors/special-report-the-incinerator-that-may-burn-muni-investors-idUSTRE64B2PM20100512>.

and communities of color) when source generation takes place in disproportionately whiter and wealthier households and communities.

For these reasons, the FSP should explicitly call for the phaseout of existing incinerators and ban the development of any new facilities and include benchmarks for weaning off incineration and expand on tactics to reduce reliance on municipal waste stream incinerators.

VI. Beneficial Use of Biosolids and Biogas

The FSP should ensure any markets for waste do not lead to harm to human health and the environment. “Waste-to-energy” incineration and the use of biosolids, like sewage sludge for soil and asphalt amendments, are an attempt to create a market for waste, but they do so by putting human health and our environment at risk. Sewage sludge has a high number of contaminants in it depending upon what polluters are emptying into the public sewage system. Applications of contaminated sludge on soil can have costly and harmful long-lasting implications. For example, the Maine legislature is considering a \$100 million fund to compensate farmers whose land (and water) is contaminated with PFAS from state sanctioned sewage sludge applications as far back as the 1970s.³⁰

While aerobic digestion may be an effective way to manage unavoidable food (and other organic waste), the FSP must be wary not to create incentives for increased generation of such waste. As noted in the DSP, the CJWG recommended that “caution should be taken to avoid biogas use intentionally or inadvertently leading to the extended use of fossil fuels.”³¹ The FSP should focus on strategies to reduce waste generation and accumulation in the first place, rather than expanding end-of-lifecycle strategies like biogas. In particular, the strategies described above to reduce organic waste accumulation in landfills, including bans on organic waste in landfills, have a high potential to reduce methane generation. Creating a market for methane production through biogas fails to incentivize reducing waste generation and accumulation upstream, as it commodifies methane as a waste product rather than incentivizing reductions. Furthermore, biogas production is accompanied by sizable fugitive methane leaks and exposes communities located near sites of generation to co-pollutants.³² (Relatedly, we discuss in our comments on the Agriculture and Forestry Chapter the need to not incentivize further expansion and consolidation of CAFOs by subsidizing biodigesters at CAFOs.)

³⁰ S.P. 729, 130th Me., 2nd Sess., at 4 (Me. 2022),

<http://www.mainelegislature.org/legis/bills/getPDF.asp?paper=SP0729&item=1&snum=130>.

³¹DSP at 250.

³² See Felipe Montes et al., *Mitigation of Methane and Nitrous Oxide Emissions from Animal Operations: A Review of Manure Management Mitigation Options*, 9 J. Animal Sci. 5070,5070-5094 (2013); See also Mathieu Dumont et al., *11 - Methane Emissions in Biogas Production*, in *The Biogas Handbook* 248-266

(2013), <https://www.sciencedirect.com/science/article/pii/B9780857094988500117>; See also Thomas K. Flesch et al., *Fugitive Methane Emissions from an Agricultural Biodigester*, 35 Biomass and Bioenergy 3927, 3927-3935 (2011); See also Jessica Fu, *Is California Giving Its Methane Digesters Too Much Credit?*, *The Counter* (May 19, 2022), <https://thecounter.org/is-california-giving-its-methane-digesters-too-much-credit/>; See Nicole Di Camillo, *Methane Digesters and Biogas Recovery - Masking the Environmental Consequences of Industrial Concentrated Livestock Production*, 29 UCLA J. Env’t L. 364, 364-394 (2011), <https://escholarship.org/content/qt52g318rv/qt52g318rv.pdf?t=mv6dpy>.

Biogas captured from waste should also be limited to on-site use and no new transmission infrastructure should be publicly financed to support additional biogas. Expanding infrastructure for biogas can be harmful to environmental justice communities located near expansion projects, who are exposed to additional emissions and co-pollutants from construction, transportation, and other activities.³³ These harms offset any of the limited potential climate benefits from biogas production and must be considered. To avoid such outcomes, the FSP should ensure that any biogas generated through waste should be limited in use to avoid incurring additional emissions from transportation and infrastructure.

Separately, and consistent with the strategies described above to reduce waste generation upstream and reduce organic waste accumulation in landfills, the FSP should include strategies to require existing landfills (or at least those over a certain size) to adopt technologies to capture and destroy methane production at these facilities.

VII. Conclusion

Reducing waste sector emissions is critical to achieving CLCPA targets and particularly important to mitigating methane emissions. The FSP should include more specific and accountable strategies and emphasize more transformative strategies that prevent products from becoming waste in the first place rather than end-of-lifecycle strategies that fail to reduce waste generation. In addition, the plan should improve waste management for environmental justice communities and prioritize zero waste efforts.

In summary, the FSP must:

- Include a state-wide strategy for diverting organic waste from landfills and incinerators, including revisions to the Food Donation and Food Scrap Recycling Law, bans on the incineration or disposal of food waste where possible, revisions to the State’s food delivery and food procurement programs to reduce food waste generation, and strategies to increase the number of composting and other organics recycling facilities.
- Include policy and strategy recommendations to reduce waste generation, including per ton surcharges on waste generation, policies to incentivize re-use, and policies to mandate retail recycling strategies.
- Revise general EPR policies to include waste reduction strategies, for example, ensuring paper and packaging EPR policies include post-consumer content requirements and reduction targets.
- Identify and prioritize strategies for achieving an optimal recycling system and ensuring false solutions, like chemical recycling, are not included under the umbrella of “recycling” strategies.
- Include strategies to support an end to waste incineration, including bans on organic waste incineration and bans on the development of new incinerators.
- Ensure that markets for waste do not lead to harm to human health and the environment through the use of sewage sludge, and that they do not create a market for biogas utilization.

³³ See Phoebe Gittelson et al., *The False Promises of Biogas: Why Biogas Is an Environmental Justice Issue*. Env’t Just. (Online ahead of print May 26, 2021), <https://doi.org/10.1089/env.2021.0025>.

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Catskills Chapter
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