VIA ELECTRONIC MAIL
Draft Scoping Plan Comments
New York State Energy Research and Development Authority
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Albany, NY 12203-6399
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Re: NRDC Comments on Climate Action Council Draft Scoping Plan

Dear Climate Action Council:

Thank you for your work to create this strong and exhaustive Draft Scoping Plan charting the path to CLCPA implementation, including critical climate justice and co-pollutant reduction achievement, and ultimately a 2050 net-zero carbon economy.

NRDC is submitting these comments on the sections of the Draft Scoping Plan relating to Electricity, Transportation, Buildings, and Gas Transition chapters. NRDC is separately submitting comments on Waste, as well as on Agriculture & Forestry in conjunction with Earthjustice and other organizations, on energy efficiency and building electrification with Con Edison, and additional joint comments on other topics.

We look forward to your adoption of a strong Final Scoping Plan and working with you and all New Yorkers to deliver the benefits of a vibrant clean and healthy energy future for New York.

Sincerely,

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Overview

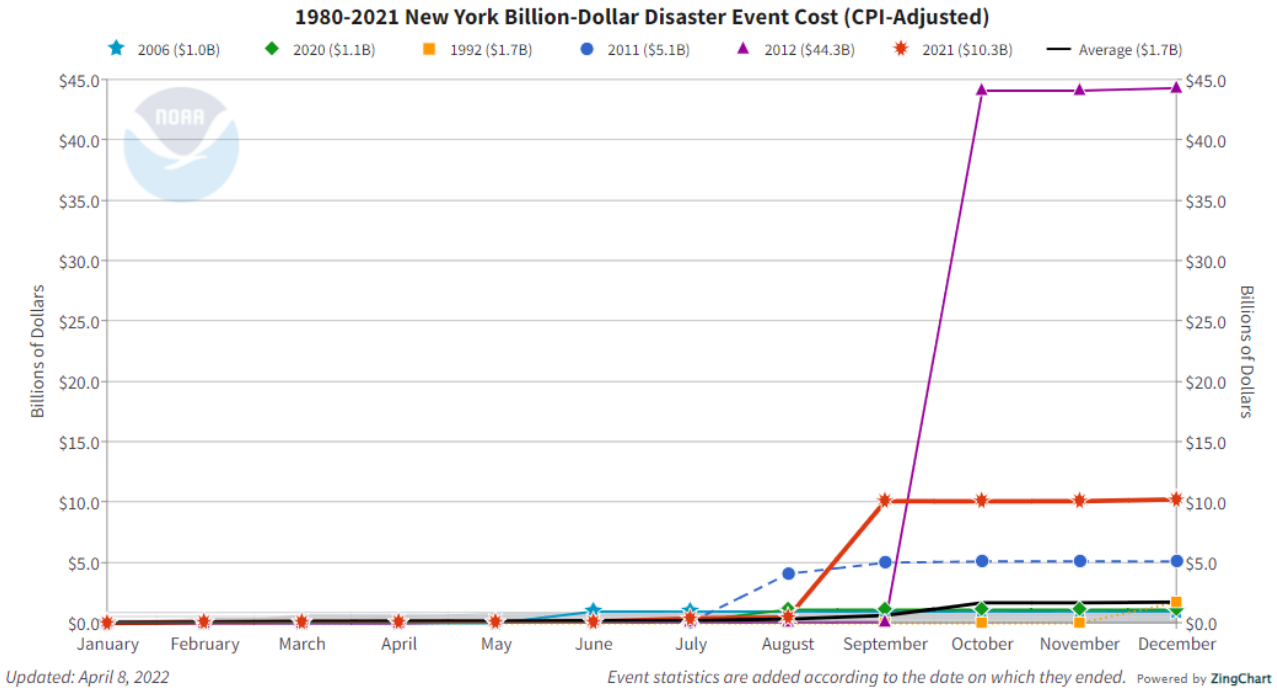
New York adopted the Climate Leadership and Community Protection Act in 2019 (CLCPA or the "Climate Act"), a landmark law requiring carbon neutrality across all sectors of the state by 2050, in addition to ambitious climate and clean energy targets. The Draft Scoping Plan as required by the CLCPA, lays out the path to achieving that critical goal, and NRDC offers these comments in support of many of the strong recommendations included therein, with suggestions for additions, to yield a strong and feasible final scoping plan that will deliver myriad benefits to all New Yorkers.[1]

As a central tenet of reaching carbon neutrality, the CLCPA holds central the focus on Climate Justice and helping Disadvantaged Communities, through reduction of co-pollutants and assuring no less than 35-40% of overall benefits accrue to those communities. In our transition away from burning fuel in our buildings, vehicles, and power plants, to clean renewable electricity, we will not only reduce our greenhouse gas pollution, we will also reduce toxic air pollution and create high-quality local jobs and other benefits for New Yorkers.

Background

Each new report from the Intergovernmental Panel on Climate Change paints a grimmer picture of the costs of climate inaction; the news is bad and getting worse, and many of the terrible impacts of climate change are occurring faster than predicted. In New York, children now have days off from school for flooding as a result of storms and extreme precipitation, instead of snow days. The National Oceanic and Atmospheric Administration's "Billion Dollar Weather and Climate Disasters" database shows some of the devasting storms New York has suffered in the past decades, with Superstorm Sandy ten years ago topping the charts with the greatest losses, both human and economic, and Hurricane Ida, just nine months ago, coming in second. Climate change is not an "if" or "when" hypothetical crisis; we're already in its throes and we need to take smart, aggressive action now to do all we can to mitigate its harmful impacts.

[1] NRDC is submitting these comments on the sections of the draft Scoping Plan relating to Electricity, Transportation, Buildings, and Gas Transition chapters. NRDC is separately submitting comments on Waste, on Agriculture & Forestry in conjunction with Earthjustice and other organizations, on energy efficiency and building electrification with Con Edison, and additional joint comments on other topics.



[2]

Health

While the scope of the challenge is daunting and global, New York has made huge strides in tackling pollution before, and reaped the enormous benefits locally, as can be seen comparing current skies with this picture of the George Washington Bridge in 1973, veiled by heavy smog.[3]

[2] NOAA National Centers for Environmental Information (NCEI) U.S. Billion-Dollar Weather and Climate Disasters (2022). https://www.ncei.noaa.gov/access/billions/

[3] *The George Washington Bridge in Heavy Smog, View Toward the New Jersey Side of the Hudson River*, Higgins, Chester, photographer, Documeria: The Environmental Protection Agency's Program to Photographically Document Subjects of Environmental Concern, Compiled 1972-1977, https://www.loc.gov/resource/gdcwdl.wdl_02739/?r=-0.096,0.17,0.499,0.236,0

Implementing the Climate Action Council's Scoping Plan will deliver huge benefits from mitigating climate change and reducing toxic air pollution. Achieving the CLCPA's climate justice and co-pollutant goals will reduce the harms from air pollution immediately, including for the most overburdened communities, and reduce the climate risks for all New Yorkers, especially the most vulnerable that suffer the worst effects of climate disasters.

Modeling for the Climate Action Council shows that replacing burning fuel with clean, renewable energy will prevent $170 billion dollars in health damages suffered by New Yorkers as a result of fewer premature deaths and reduced respiratory and other illnesses, by 2050. Nine billion dollars of those health savings are associated with energy efficiency projects in low- and moderate-income homes (there will be additional benefits in all buildings that were not quantified in the modeling).[4] In a bar chart, these are large numbers, but in real life these are actual asthma attacks prevented, and extra years added to people's lives. In 2017 alone, New Yorkers lost 1,940 years off their lives from the pollution resulting from fuels burned in buildings, with BIPOC New Yorkers exposed to significantly more pollution from buildings, transportation, and electricity generation than white New Yorkers.[5]

There are also co-benefits from transitioning to climate-friendly, healthy, efficient buildings, including increasing New Yorkers' access to air conditioning for those who need it most – saving lives as climate change creates increasingly deadly heat waves.[6] Delivering climate-friendly buildings also means better and healthier schools, with air conditioning that improves comfort and student performance, and better ventilation that improves public health.

Jobs

By leading the way on climate and being an early adopter of zero carbon technology and systems, New York's people and companies will increasingly capture the jobs and economic benefits from a green economy that will become the norm, nationally and internationally. We are already seeing the benefits from the development of clean energy here; New York has the third highest in the nation employment in clean energy jobs. Implementing the CLCPA is expected to add 200,000 more jobs by 2030, and a projected 10 jobs added for every job displaced.[7]

Getting to climate neutral is an enormous opportunity to employ New Yorkers and expand our skilled workforce, training today and tomorrow's workers for growth industries, from the construction, installation, and maintenance of offshore wind facilities, to the rollout of electric

[4] New York Climate Action Council, *Draft Scoping Plan Overview*, slide 16, at https://climate.ny.gov/-/media/Project/Climate/Files/Draft-Scoping-Plan-Overview.pdf
[5] RMI, https://rmi.org/new-york-emits-more-building-air-pollution-than-any-other-state/
[6] WE ACT for Environmental Justice, NRDC, *Summer In The City: Improving Community Resilience To Extreme Summertime Heat In Northern Manhattan,* 2021, at https://www.weact.org/2021/07/report-reveals-inequities-in-the-exposure-to-the-urban-heat-island-in-new-york-city
[7] Environmental Entrepreneurs, *2021 Clean Jobs America Report*, at https://e2.org/wp-content/uploads/2021/04/E2-2021-Clean-Jobs-America-Report-04-19-2021.pdf and Climate Action Council Just Transition Working Group Jobs Report https://climate.ny.gov/-/media/Project/Climate/Files/JTWG-Jobs-Report.pdf

vehicle charging stations and even manufacturing efficient electric heating systems and installing them in weatherized, efficient buildings.

Costs

The Integration Analysis demonstrates that the cost to New York's economy remaining dependent on fossil fuels is more than $100 billion higher than the cost of investing in the transition to a clean energy future. Moreover, the investment required to capture this benefit is small relative to the size of New York's economy (net direct costs are estimated to be 0.6% to 0.7% of Gross State Product (GSP) in 2030, and 1.4% of GSP in 2050). Some of these costs will be borne by the private sector, as well, which will play an important role in helping to pay for the clean energy transition, seeing an opportunity to invest for the future and profit from a clean energy economy. Through its clean energy policies to date, the State has demonstrated the ability to harness diversified funding strategies, including combinations of state budget, ratepayer, federal investment, and private financing and leverage, for accomplishing New York's public policy goals.

These multifaceted funding streams will not only support clean air and efforts to combat climate change, but they also will ensure that the investments made to power New York's economy actually accrue to the benefit of New Yorkers. New York currently spends more than $27 billion every year on fossil fuels from out of state.[8] The adoption of a strong Scoping Plan will ensure that that money stays within New York by creating a thriving clean energy sector fostering tens of thousands of family-sustaining jobs and working to ensure climate justice across the state. In addition, costs will be offset by savings resulting from reduced healthcare expenses, as outlined above, and a much more efficient energy system.

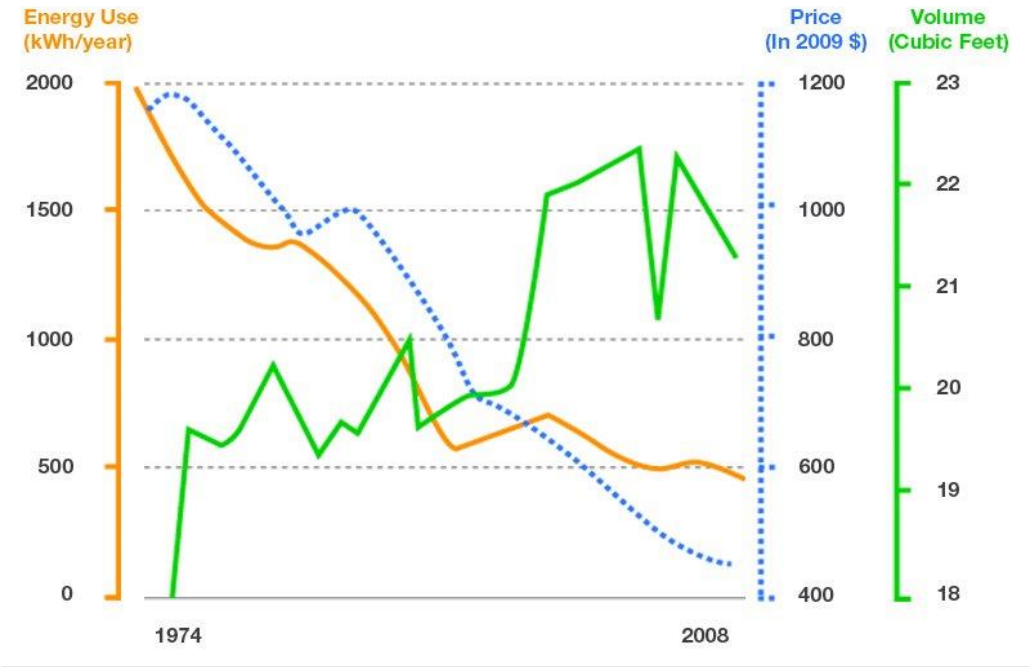
On the other hand, if we continue down the wrong path, spending billions of dollars to maintain use of fossil infrastructure by replacing thousands of miles of old leaky pipes and infrastructure to support the continued combustion of fuels in buildings, the greater the burden on all New Yorkers. Indeed, new investments in gas infrastructure puts all New Yorkers at risk, and will burden all current and future gas customers for the next eight decades, stuck with paying for stranded assets that will not be in use after 2050. Rising costs to maintain a gas system that has declining use creates the conditions to incite a vicious cycle that spurs uncontrolled customer exit from the gas system, further escalating costs for remaining customers, and producing gross inequities among customers and between generations. The customers bearing the brunt of the inequity would likely be those that are disproportionately vulnerable or disadvantaged. The costs of choosing the wrong path are high, costing us both money and time that we can ill afford.

Importantly, energy efficiency is our "first fuel", and will deliver more than one-third of our emissions reductions, which also means our state can do more with less. Since 1974 when the Department of Energy created efficiency standards for refrigerators, their energy use has dropped 75%, while costs have fallen more than 50%, and size has increased 20%, not to mention the bells, whistles, and in-door ice dispensers they now have. And the New York Legislature just passed the Advanced Building Codes, Appliance and Equipment Efficiency

[8] Energy Information Administration, New York State Energy Profile, 2020 data, https://www.eia.gov/state/print.php?sid=NY

Standards Act that will deliver more than $15 billion in utility bill savings for New Yorkers by requiring that only better performing products be sold in New York. Utility and NYSERDA energy efficiency programs have delivered more than $10 billion in customer savings from 2016 through Q3 of 2021, and have served more than 48 million participants.[9]

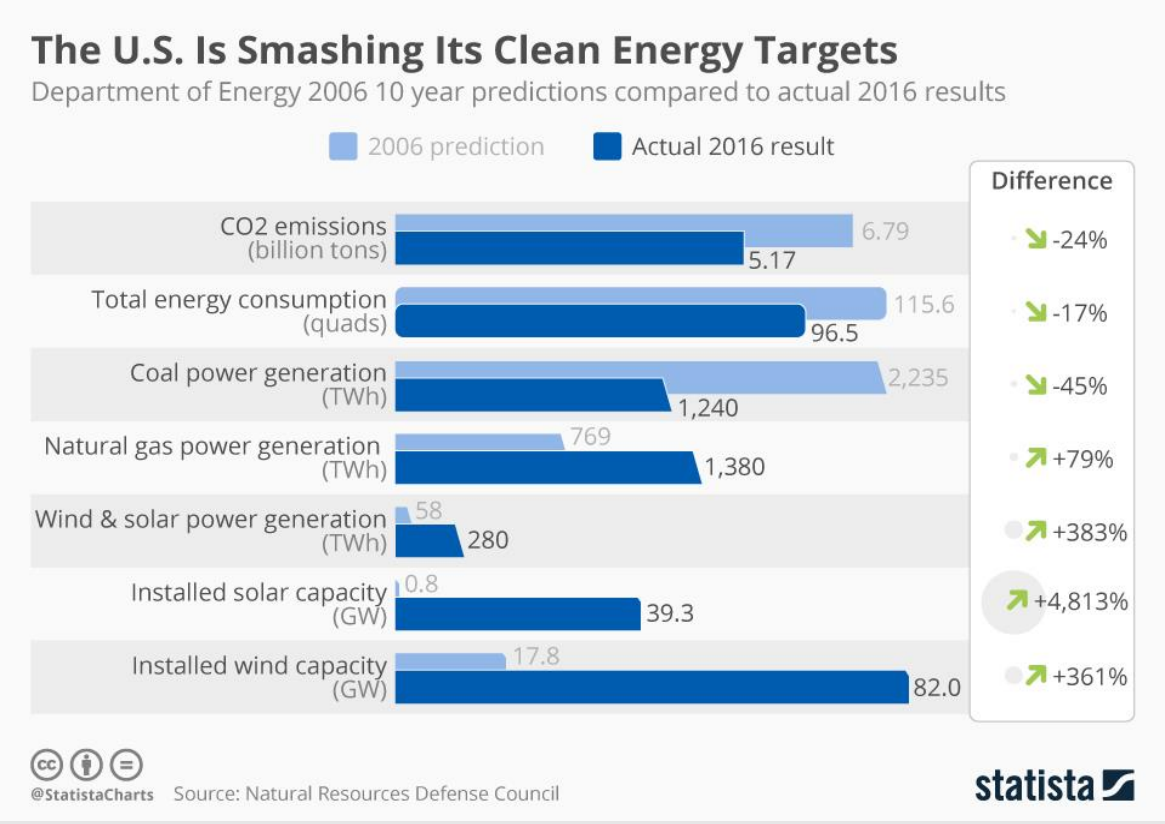
Refrigerator Standards Save Consumers Billions[10]



Investing in energy efficiency for our buildings makes them more valuable, more comfortable, and cheaper to operate. Energy efficiency programs provide universal benefits and are an integral element of a comprehensive strategy to reduce energy burdens and protect public health because they deliver benefits at the household, utility, and community levels. At the household level, energy efficiency programs lower monthly utility bills, which reduces energy burdens, eases economic and social stresses, and provides families with more disposable income. Efficiency upgrades also increase property values and the reliability of appliances and equipment, which improves health, safety, comfort, and satisfaction in the home. Energy efficiency programs further benefit utilities and utility customers by helping avoid excess costs of increased energy supply, capacity, and transmission investments as well as by lowering operating costs by reducing arrearages and the cost of shutoffs. At the community level, energy efficiency programs reduce environmental pollutants and improve public health, create jobs and stimulate the local economy, and increase property values and preservation of housing stock. Energy efficiency enhances values at every level of the economy and represents an effective means for delivering clean energy solutions, particularly to disadvantaged communities.

[9] NYSERDA Clean Energy Dashboard at https://www.nyserda.ny.gov/Researchers-and-Policymakers/Clean-Energy-Dashboard/View-the-Dashboard.
[10] US Department of Energy, *Refrigerator Standards Save Consumers $ Billions*, https://www.energy.gov/eere/buildings/articles/refrigerator-standards-save-consumers-billions.

Renewable energy has also experienced hugely impressive market development over the past decade, blowing past estimates of market share expansion and cost reductions. And renewable energy has no fuel costs, buffering electricity costs from volatile international energy commodity markets. As New York powers more of its sectors using a growing percentage of renewable electricity generated in-state, there will be increasing economic benefits and decreasing energy price risk for New Yorkers.



[11]

The fact that New York's clean energy transition will have a significant impact on the total demand for electricity amplifies the importance of energy efficiency, which provides a variety of economic and social benefits by reliably and permanently reducing demand, including avoided infrastructure (generation, transmission, and distribution) in the long-term and energy production costs, improved air and water quality, greater grid resilience, a lessening of inequitable energy burdens, and improved health and comfort.

For all these reasons, we urge the Climate Action Council to adopt a strong final Scoping Plan that can be implemented with all appropriate urgency to begin to address the climate crisis, and also deliver on the enormous opportunities and benefits for our state and its people starting now, and for future generations.

Specific comments on Draft Scoping Plan chapters follow.

[11] Statista, using NRDC data, https://www.statista.com/chart/11365/the-us-is-smashing-its-clean-energy-targets/.

Electricity (Chapter 13)

The Climate Act sets ambitious electric sector targets, requiring that 70% of the State's electricity supply come from renewable energy sources by 2030, and that this supply is emissions free by 2040. It also includes several intermediate, technology-specific targets to guide the transition of the resource mix. The electric sector targets are the foundation of the Climate Act's comprehensive framework for decarbonizing the State's economy because the transformation of New York's electricity system facilitates decarbonization and the reduction of co-pollutants by enabling fossil-fueled end-uses to electrify in transportation, buildings, and industry.

New York's power system must undergo an unprecedented transition to meet the Climate Act's electric sector targets and convert from a grid largely dependent on central-station fossil fuel generation, to a grid reliant on a diverse portfolio of intermittent renewable generation and distributed energy resources. In 2021, 47% of the state's energy production came from fossil fueled resources, while 28% came from renewable resources. Downstate, where most of the state's electricity demand is located, the situation is much more stark: 89% of energy production came from fossil fueled resources, while just 4% came from renewable resources. In 2019, State reliance on fossil-fuel fired power generation produced approximately 13% of statewide emissions.

As the Draft Scoping Plan identifies, meeting the electric sector targets requires aggressive deployment of existing renewable energy technologies such as wind, solar, and energy storage to achieve the 70 x '30 target, with continued procurement in the next decade to meet significant growth in demand from the transportation and buildings sectors' transition to electrification, as well as a focus on incorporating load flexibility and controllability as sectors electrify to create a more manageable system and on developing new technology solutions for dispatchable emissions-free resources that can be dispatched immediately and for long durations when there are prolonged periods of insufficient renewable energy production. Integrating these resources will also require significant electric system upgrades to deliver energy from where it is generated to where the load demand exists.

Fortunately, New York is well positioned to meet its 70 x '30 target. Through its Clean Energy Standard, the State has created a pipeline of clean energy resources to power over 66% of New York's electricity from renewable sources by 2030. It is also facilitating the development of new and upgraded transmission and distribution systems to integrate these clean energy resources and incent the delivery of renewable energy into the grid-constrained large consumer demand areas in and around New York City, which hosts many of the state's oldest and most highly polluting fossil-powered "peaker" plants. And public policies such as nitrogen oxide emission limits, energy infrastructure siting policy and permitting decisions, New York City's codes to eliminate residual oil and reduce carbon emissions in large and medium-sized NYC buildings, and the Regional Greenhouse Gas Initiative are working to reduce emissions of fossil fuel-fired facilities and to retire unnecessary fossil generation.

The Draft Scoping Plan offers a strong complement to the State's clean energy efforts to date and NRDC generally supports the electric sector strategies in the Plan (E1-E10).

To ensure New York remains on track to hit its electric sector targets and enable the decarbonization of transportation, buildings, and industry, the Final Scoping Plan should strongly endorse avoiding new or repowered fossil generation and associated polluting infrastructure (unless no reasonable alternative exists to address a verified reliability need), while proactively managing the retirement of existing fossil generation with a priority on reducing GHG and co-pollutants in disadvantaged communities.

The Final Scoping Plan should also ensure the timely development and integration of clean energy resources by emphasizing the importance of continuing to streamline the permitting and interconnection of clean energy resources at both the distribution and transmission system levels. The Draft Scoping Plan's strategy for a multi-pronged approach with communities to support the siting and acceptance of renewable energy facilities, including wind, solar, storage, and transmission upgrades would accelerate the deployment of renewable energy projects.

Effective integration of clean energy resources will also require improved planning for the timely identification and construction of the most efficient, value producing transmission and distribution solutions for addressing reliability risk, bottled clean energy production, and emission reductions. To achieve these ends, the Final Scoping Plan should endorse the current efforts to improve and better coordinate the various grid planning processes to identify upgrades at all levels of the system needed to ensure the timely and cost-effective attainment of New York's climate and clean energy targets. In doing so, it should emphasize the importance of a coordinated grid planning process that creates a level playing field for the identification of the highest value mix of bulk, local, ***and*** non-wire alternative solutions for addressing system needs. It should also ensure that the process is inclusive, transparent, and incorporates analysis of emission reductions and equity impacts of various potential alternative solutions.

Importantly, the Final Scoping Plan's discussion of electric sector strategies should not neglect the central role of energy efficiency and demand management in meeting the ambitious clean energy targets—a role amplified by the need to electrify end-uses in buildings, transportation, and industry. Given the large amounts of renewables that must be procured and developed to reach electric sector targets, the State must mitigate electric demand growth through energy efficiency and incorporate load flexibility and controllability into the electric grid as sectors electrify to create a more manageable system. Energy efficiency and load flexibility provide a variety of economic and social benefits by reliably and permanently reducing demand, including avoided infrastructure (generation, transmission, and distribution) in the long-term and energy production costs, improved air and water quality, greater grid resilience, a lessening of inequitable energy burdens, and improved health and comfort.

One notable area for improvement of the Draft Scoping Plan is to call for the elimination of a siloed approach to energy efficiency, load flexibility/demand resource, and distributed generation. Energy efficiency and end-use electrification should be fully integrated with electric load flexibility and distributed energy resource programs so that electrified buildings and vehicles can be active participants in a two-way optimized clean electric system, providing responsive load and reducing the costs of building out a clean, resilient grid powering our buildings and transportation. For example, insulation and air sealing can be combined with heating and hot water heat pumps and smart thermostat installations to reduce overall costs and

increase home comfort while creating a controllable grid resource. Similarly, energy efficiency improvements reduce building energy loads, allowing customers to install smaller and less costly distributed generation systems such as solar plus battery systems than they would otherwise need and provide monthly energy bill savings to help finance the costs of their distributed systems. Such integrated energy efficiency solutions produce compound savings and create synergies that amplify the benefits of electrification and distributed energy resources to customers and utilities, all while making New York's buildings more comfortable and affordable to operate.

Indeed, the Final Scoping Plan should strongly endorse use of a total system benefit metric—inclusive of the type of health benefits identified in the Draft Scoping Plan—that applies to and thus facilitates an integrated approach for implementing energy efficiency, demand response, and other distributed energy resources to advance responsive demand and to optimize the investments needed for the orderly and equitable achievement of New York's climate and clean energy targets.

Buildings (Chapter 12)[12]

Buildings are responsible for the largest share of greenhouse gas emissions in the state. The benefits from transforming in-building heating and hot water systems that currently rely on combustion of fossil fuels to clean, super-efficient systems using renewable electricity are tremendous. And making New York's buildings more efficient will make them more comfortable and affordable to operate. As discussed above, electrified buildings can also be active participants in a two-way optimized clean electric system, providing responsive load and reducing the costs of building out our clean, resilient grid powering our buildings and transportation.

New York has the highest levels of air pollution coming from buildings in the country, because of our cold climate requiring significant space heating and our large population. Since combusting fuels on-site for heat and hot water creates climate and local air pollution, investing in our building infrastructure to significantly scale up efficiency and electrification will not only play a critical role in achieving our climate targets, but will also immediately reduce harmful local air pollution. Other fuels that may have lower lifecycle carbon have the same air pollution impacts, and are also going to remain a limited, costly resource that should be deployed only in hard to electrify applications, not buildings.

For all the reasons detailed above, building transformation must focus on energy efficiency, weatherization, and upgrading buildings to provide healthier, more comfortable and affordable-to-operate, resilient homes. To achieve these ends, the Final Scoping Plan should endorse procurement of all cost-effective energy efficiency for buildings through NYSERDA and utility energy efficiency programs as part of the New Efficiency: New York interim review. This will

[12] NRDC has filed additional comments focusing on the centrality of energy efficiency and electrification to deliver decarbonization of the buildings sector, jointly with Con Edison, under separate cover.

require more frequent assessments of the energy efficiency potential, and corresponding adjustments to energy efficiency and electrification program measures, targets, and budgets.

As discussed above, energy efficiency and end-use electrification programs should also be fully integrated with electric load flexibility programs and distributed energy resource implementation, which will help reduce overall costs and increase home comfort while creating a controllable grid resource. To fully capture the wealth of benefits from efficiency investment, the Final Scoping Plan should ensure that benefit cost analyses of efficiency and electrification programs include the value of avoided air pollution, avoided gas infrastructure, and avoided electric grid infrastructure and capacity investments. It is also critical that CLCPA implementation include a robust statewide public education and information campaign to support climate-friendly choices by consumers for building improvements and equipment. Most people are unaware of the benefits of these improvements to their homes and buildings, and local air quality.

We strongly support the Draft Scoping Plan recommendations to decarbonize the buildings sector. The Final Scoping Plan should prioritize the significant scaling up of energy efficiency and building electrification, with a focus on Disadvantaged Communities, including the addition of strongly endorsing clear guidance for utility targets and programs to pursue all cost-effective energy efficiency and load flexibility measures and ensuring that there is sufficient funding and other resources necessary to meet these critical objectives.

Gas System Transition (Chapter 18)

The Public Service Commission (PSC) recently issued orders in the Gas Planning Proceeding (case 21-G-0131) and the Proceeding on Motion of the Commission Assessing Implementation of and Compliance with the Requirements and Targets of the Climate Leadership and Community Protection Act (case 22-M-0149) that made tremendous progress toward an orderly, equitable, economic transition of the gas system. Gas utilities will be filing long-term plans that will enable achievement of CLCPA goals.

It is critical that we begin planning the transition process now; the more gas infrastructure we build or replace today, the longer all gas customers will be saddled with the expense of stranded assets that will not be in use after 2050. In addition to the great strides in planning implemented by the PSC, the Final Scoping Plan should also make explicit that ensuring that the laws and regulations for gas utilities facilitate and support building sector electrification, instead of working at cross purposes, and protecting vulnerable customers and Disadvantaged Communities from bearing the costs of a disorderly transition away from fossil fuels is fundamental to achievement of CLCPA goals.

Specifically, the Final Scoping Plan should expressly call on the Legislature to expeditiously amend the Public Service Law provisions that establish an entitlement to gas service, the "100-foot rule" gas system extension subsidy, and other provisions that generally promote the growth of fossil gas infrastructure. Without those changes, the projects that are most economic and beneficial for customers, and the state as a whole, will be impossible to deliver. With a robust, inclusive, gas transition planning process we will avoid wasting time and money continuing to

invest in expensive infrastructure that will become obsolete before it is paid off by utility customers and become a growing intergenerational burden on future New Yorkers.

While the bad economics of investing vast sums in additional fuel infrastructure is irrefutable, the math and science of alternative fuels is similarly dismal. So-called "renewable" "natural" gas, or biomethane, which has been put forward as a building decarbonization "solution" in various contexts, is a dead-end solution for buildings. There is not enough of it now, nor expected for the future, it will continue to be much more expensive than current fossil gas prices, and we need to use what little there is sparingly and strategically for hard-to-electrify sectors, such as industrial processes, aviation, and long-distance transportation—not in buildings.

To date, biomethane development for injection in gas pipelines has also mostly not delivered actual carbon reductions for New York gas consumers because the environmental attributes associated with the biomethane production were not retained by the utility for its customer's benefit, vividly demonstrating the risks of double counting emission reductions, which undermines the integrity of decarbonization policies. Critically, environmental attributes associated with biomethane production are necessary to substantiate environmental claims related to clean energy use—just as they are for clean energy resources in the electric sector. If a New York consumer contracts for "biomethane" but the environmental attributes of this gas remain with the producer or are otherwise not retained and retired, that consumer is relinquishing any ability to claim the positive environmental benefits of the "biomethane" it procures, including any decarbonization benefits. Without retaining the environmental attributes, the consumer is contracting for mere methane (i.e., the chemically identical gas that creates carbon emissions, produces harmful criteria pollutants when burned, and warms the planet at even faster rates when it seeps through leaky pipes into the atmosphere).

Of note, New York consumers tend not to retain and thus not benefit from the environmental attributes of biomethane because they can be monetized in various out-of-state markets where the environmental attributes of the biomethane are credited for compliance with various state and federal requirements (e.g., the Environmental Protection Agency's renewable fuels standard ("RFS") program, and the low carbon fuel standard ("LCFS") programs in California, Oregon, and British Columbia). Unless New York enacts a similar policy framework through which the environmental attributes are valued to reduce the state's emissions, all of the positive environmental attributes associated with local biomethane production would likely be shipped out of New York to support some other state's decarbonization efforts, in which New York consumers would be subsidizing the production of biomethane to offset another state's emissions.

Most importantly, the combustion of biomethane produces the exact same toxic air pollution as fossil gas, damaging New Yorkers' health to the tune of $14 billion per year. New York currently has the highest number of premature deaths from combustion of gas in buildings in the nation.[13]

[13] Jonathan J Buonocore et al 2021 Environ. Res. Lett. 16 054030, *A decade of the U.S. energy mix transitioning away from coal: historical reconstruction of the reductions in the public health burden of energy*. Illustrated by RMI at https://rmi.org/uncovering-the-deadly-toll-of-air-pollution-from-buildings/.

To reduce premature deaths and meet the CLCPA's equity and emissions goals, it is clear that gas use must be drastically reduced by 2050.

Similarly, boosterism for green hydrogen in buildings diverts attention and resources from electrification. Hydrogen blends above 15-20% in gas systems would require all new pipes for distribution and all new equipment to combust it in buildings to provide energy end uses, and burning it in buildings may be as bad or worse for toxic air pollution as fossil methane gas. Green hydrogen is a woefully inefficient (with large process losses in electrolyzing the hydrogen, high risk of leaks due to tiny molecule size, and combustion that maxes out at 100% efficiency), and risky solution to decarbonize buildings relative to proven and readily available high-efficiency electric heat pumps. Rather, it should only be deployed strategically for hard-to-electrify applications, such as steel production, cement manufacturing, marine shipping, and long-haul aviation.

Transportation (Chapter 11)

The transportation sector is a major source of greenhouse gases in New York, and to fully achieve the goals of the CLCPA, it is vital that the state adopt standards and implement robust policies and programs that help the state: achieve zero-emissions from the transportation sector equitably by 2050; put systems in place to evaluate the state's progress towards achieving its goals and help agencies course correct when needed; remove barriers for widespread transportation electrification; and, expand access to mass transit and other means to reduce travel by car.

The Draft Scoping Plan incorporates many of NRDC's previous recommendations and takes a holistic look at the transportation sector and opportunities to transition towards a zero-emission vehicle future. While we support many of the recommendations outlined in the Plan, there are a few areas that the Council should expand upon and include in the Final Scoping plan, specifically around utility rate design and managed charging and supporting medium-and-heavy duty vehicle electrification and reducing pollution from these vehicles.

While the Draft Scoping Plan includes reference to New York's adoption of the Advanced Clean Truck (ACT) Rule — which NRDC strongly supported — the Plan fails to include an important complementary policy to reduce health-harming pollutants: the NOx Heavy Duty Omnibus (HDO) Rule. Heavy-duty vehicles are a major source of nitrogen oxides (NOx) and particulate matter (PM) pollution. NOx contributes to smog and secondary PM, which, along with primary PM emissions, are associated with increased risk of premature deaths, hospitalization, and ER visits.[14] Cutting NOx and PM emissions from trucking is vital for improving public health and meeting the federal National Ambient Air Quality Standards. Cleaning up truck emissions is long overdue for the communities living adjacent to highways, ports, and freight hubs that disproportionately suffer from harmful air pollution. The HDO Rule is the most important mechanism to reduce the emissions from the heavy-duty vehicle sector and will cut NOx emissions from heavy duty trucks by roughly 90% in 2027.

[14] American Lung Association, *State of the Air 2022*, at http://www.stateoftheair.org/health-risks/.

Additionally, while the Draft Scoping Plan discusses the need to invest in more charging infrastructure for medium-and-heavy duty vehicle infrastructure, it does not explicitly state the importance of *utility* support for this infrastructure or for utility rate design to integrate electric trucks and buses in a manner that maximizes the benefits to the grid and fleet customers. In 2020, the New York Department of Public Service announced a $701 million utility program to support the build out of electric vehicle charging infrastructure, but was heavily focused on the passenger, light-duty vehicle sector. With the adoption of the Advanced Clean Trucks rule at the end of 2021, electric trucks and buses will start entering New York's roads over the next few years, and it is imperative that utilities are directed to support the infrastructure buildout for medium-and-heavy duty vehicles, as well.

The Final Scoping Plan should also include a strategy on medium-and-heavy duty vehicle rate design. Electric trucks and buses will have larger batteries than passenger vehicles and therefore will require more electricity to charge. However, they also will likely have more consistent schedules, and therefore fleets should be encouraged to charge their vehicles in a manner that provides maximum economic benefits for the fleet as well as for the electric grid. The PSC should initiate a proceeding to discuss optimal medium-and-heavy duty vehicle rate design.