



October 27, 2020

Via email to climate.regs@dec.ny.gov

New York State Department of Environmental Conservation
Office of Climate Change
Attention: Suzanne Hagell
625 Broadway, 9th Floor
Albany, NY 12233

Re: Comments on Proposed 6 NYCRR Part 496

On behalf of the undersigned organizations, Earthjustice respectfully submits these comments on the proposed 6 NYCRR Part 496, setting New York's greenhouse gas (GHG) emissions limits for 2030 and 2050 pursuant to the Climate Leadership and Community Protection Act (CLCPA).

By setting the actual limit for New York's gross GHG emissions in 2030 and 2050, and by establishing which emissions will be counted toward that limit, the proposed rule sets the stage for all of New York's future actions to reduce emissions under the CLCPA. It is critical that this initial rulemaking rests on a strong foundation: DEC should release sufficient information about current emissions for the public to understand what reductions will be necessary to achieve the limits, must include all sources of anthropogenic emissions in its baseline, and must identify limits for each type of GHG as required by the statute. Going forward, to ensure transparency and integrity in implementation of the CLCPA, DEC must track annual emissions in a consistent and transparent way, track emissions by location to ensure prioritized reductions in disadvantaged communities, establish a mandatory registry and reporting system, report both gross and net emissions as well as account for uncertainty, and ensure that accounting for net emissions adequately protects sequestration in the forestry sector.

I. MORE INFORMATION IS NEEDED TO EVALUATE THE 1990 EMISSIONS BASELINE

The new, higher estimate of 1990 emissions that is the basis of the proposed rule has the potential to catalyze aggressive action to reduce New York's GHG emissions, particularly from the use of natural gas. Conversely, by allowing higher levels of emissions in 2030 and 2050 than what would have been allowed based on previous estimates, the new estimate could also allow New York to delay meaningful emission reductions. Without the ability to compare the new 1990 baseline estimate – and the 2030 and 2050 emissions limits – to New York's *current* GHG emissions estimated using the same methodology and categories of emissions, the public is unable to evaluate the implications of the proposed rule for future policymaking to reduce emissions.

The CLCPA sets new methods for measuring emissions that differ from the methodology used in previous state GHG inventories. In particular, the CLCPA requires the state to count

emissions from extraction and transmission of fossil fuels and electricity imported into the state, and to use a twenty-year Global Warming Potential (GWP) to calculate CO₂ equivalence for each type of GHG. ECL §§ 75-0101(2); 75-0105(3). The inclusion of out-of-state emissions related to New York’s energy use, along with the twenty-year global warming potential, increases the 1990 baseline almost 70% above the previous estimates in the existing NYSERDA GHG inventory.¹ Counting the full emissions associated with New York’s energy consumption is a critical policy decision meant to push the state to address its reliance on imported fossil fuels, particularly natural gas. However, a higher baseline results in a higher emissions limit for 2030 and 2050. The current estimate for 2016 emissions in the NYSERDA inventory, 201.8 million metric tons of CO₂ equivalent (MMT CO₂e),² is *already* below the proposed 2030 statewide emissions limit of 240.83 MMT CO₂e. *See Figure 1.* Unless DEC conducts its annual reporting using the same methodology and is conservative and transparent when accounting for life cycle GHG emissions from organic sources that sequester carbon for part of their life cycles, the state could simply declare that it has reached its 2030 limit without taking aggressive action to achieve significant emissions reductions.

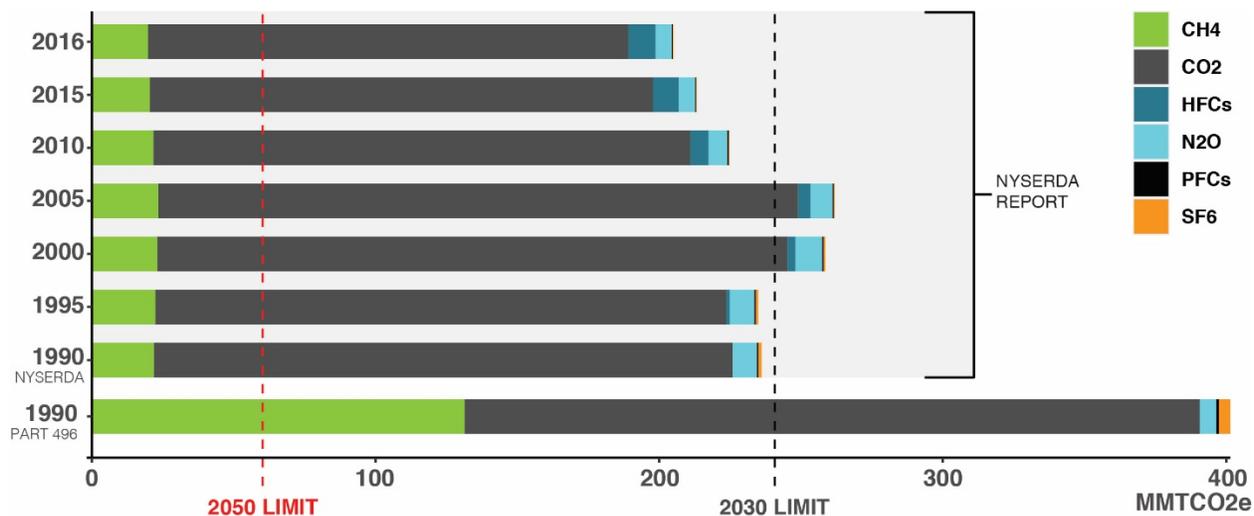


Figure 1. 1990-2016 emissions from NYSERDA³ inventory using GWP100. The line labeled “1990 Part 496” shows DEC’s baseline estimate using GWP20. This Part 496 baseline is 70% greater than the previous 1990 estimate from NYSERDA. Without updated methodology, previously reported emissions from 2016 fall below the proposed 2030 limit.

The CLCPA requires DEC to update the current GHG emissions inventory by January 2022, using the same methodology used to calculate the 1990 emissions in the proposed rule. ECL § 75-0105. The GHG emissions reported under section 75-0105 will necessarily be higher

¹ See NYSERDA, *New York State Greenhouse Gas Inventory: 1990–2016* (July 2019), <https://www.nyserdera.ny.gov/-/media/Files/EDPPP/Energy-Prices/Energy-Statistics/greenhouse-gas-inventory.pdf> (NYSERDA GHG Inventory); Marie French, *New York Proposes New Accounting for Planet-Warming Gases — Key Step in State Goals*, Politico (Aug. 14, 2020).

² NYSERDA GHG Inventory at S-3, tbl.3-1.

³ *Id.* at App. B, tbl.B-1.

than previous estimates, which only include in-state emissions and do not use the twenty-year GWP, especially since methane emissions associated with natural gas have increased significantly in the past few decades.⁴ Recent studies estimate that increased methane emissions associated with the expansion of natural gas within the last fifteen years effectively cancel out nearly all CO₂ reductions in New York since 1990 from retiring coal plants and other measures.⁵ Because New York now uses more natural gas than in 1990, to power nearly all fossil-fuel electricity generation within the state as well as for a significant portion of building heating and hot water,⁶ DEC's annual emissions report should reflect an increase in methane emissions that is parallel to or even greater than the increase in the DEC's current estimate of 1990 emissions over the NYSERDA inventory.

To allow the public to fully understand the impact of the proposed rule, DEC should release a draft updated emissions report for the most recent year where data is available. In the absence of that data, Robert Howarth's 2020 study estimating 2015 emissions according to the CLCPA framework is instructive. It shows that while CO₂ emissions from energy consumption decreased by 15% since 1990, methane emissions increased by 29%.⁷ DEC should follow Howarth's methodology to ensure it is fully capturing the state's emissions going forward. Howarth not only used the twenty-year Global Warming Potential for methane emissions but also a top-down estimate of fugitive emissions based on remote-sensing data, rather than the bottom-up estimate DEC used for its 1990 baseline.⁸ Recent data from top-down estimates suggest that using a bottom-up methodology may significantly underestimate fugitive emissions.⁹ DEC states in its Regulatory Impact Statement that insufficient data were available to conduct a top-down estimate of fugitive emissions for 1990, but that "validation of various top-down analyses is more likely for recent and future years of emissions." DEC should commit to updating its methodology to include the best available methane emissions estimates, including ones informed by top-down accounting, to more accurately and comprehensively estimate current and future emissions in its annual reporting.

A full accounting of current and future emissions using the best available data and the methodology required by CLCPA should ensure that, even with a higher emissions limit, New York will have to take meaningful steps to reduce emissions by 2030. Reductions from natural gas use in the residential and commercial building heating in particular, along with those in the

⁴ See, e.g., Hunter Cutting, *Unexpected Surge in Atmospheric Methane*, Climate Nexus, <https://climatenexus.org/climate-change-news/methane-surge/> (last visited Oct. 18, 2020).

⁵ Robert W. Howarth, *Methane Emissions from Fossil Fuels: Exploring Recent Changes in Greenhouse-Gas Reporting Requirements for the State of New York*, J. Integrative Env'tl. Scis. (2020), <https://doi.org/10.1080/1943815X.2020.1789666>.

⁶ See NYSERDA GHG Inventory at 6, fig.5; 10, tbl.5.

⁷ Howarth, *supra* note 5, at 6 tbl.2.

⁸ *Id.* at 6. Howarth notes that his estimates for methane emissions from energy are 41x higher than the former NYSERDA 1990 baseline due to the use of GWP20, accounting for imports, and the use of the top-down coefficient. The use of the top-down coefficient alone accounts for an increase in the estimate by 2–2.5x.

⁹ See Scot M. Miller et al., *Anthropogenic Emissions of Methane in the United States*, Proc. Nat'l Acad. Sci. (2013). <https://doi.org/10.1073/pnas.1314392110>. See also Proposed Part 496 Regulatory Impact Statement; Howarth, *supra* note 5, at 4.

electricity sector, also become more urgent.¹⁰ The CLCPA demands aggressive measures to reduce New York’s emissions across all sectors to address the full climate impact of the state’s energy consumption, and DEC must conduct its annual emissions report with integrity to ensure meaningful reductions occur.

II. MONITORING AND REPORTING ANNUAL EMISSIONS MUST BE TRANSPARENT AND CONSISTENT

- A. *DEC must not use net accounting to artificially meet the 2030 emissions limit or to undermine the alternative compliance mechanism’s requirement of additional offsets.*

DEC has interpreted the CLCPA to conclude that emissions limits, as set forth in the proposed rule, should be established as a percentage of gross 1990 emissions, but that annual reports should calculate net emissions. *See* Proposed Part 496 Regulatory Impact Statement. This approach is confusing and not clearly required by the statute, which is silent as to whether the limits for 2030 and 2050 should be based on net or gross emissions levels. DEC’s assumption that net accounting will close the gap between the 2050 actual emissions limit and net zero emissions overlooks the role of the “alternative compliance mechanism,” *see* ECL § 75-0109(4). Under that provision of the CLCPA, covered sources that are unable to fully eliminate GHG emissions must offset any emissions after 2050 – up to a maximum of 15% of 1990 emissions – using additional and verifiable measures. *Id.* §§ 75-0109(4)(a)–(c). The gap between the 2050 actual emissions limit and the net zero 2050 target is therefore meant to be closed through emission sources making new investments in carbon sinks and additional sequestration measures, and not simply by net accounting that factors in existing rates of carbon sequestration in the forestry sector. Specifically, any offsets used to allow GHG sources to come into compliance with emissions limits without making reductions in their own emissions must be “real, *additional*, verifiable, enforceable, and permanent.” *Id.* § 75-0109(4)(c) (emphasis added).

If DEC chooses to finalize the proposed rule as written, it must take several mitigating steps to ensure the CLCPA is properly implemented. First, it must not use net accounting to artificially meet the interim 2030 emissions limit. Instead, New York must reduce actual gross emissions below the 2030 limit. Second, DEC must fully implement and enforce the alternative compliance mechanism to ensure that all regulated sources continuing to emit GHGs beyond 2050 (or exceeding any earlier regulatory limits) comply with the process set forth in the CLCPA and invest in verifiable, additional carbon offset measures that benefit the overall environment and health of the state. Finally, DEC must ensure full transparency in its annual reports, and fully explain its calculations around net emissions in each report, including identifying both emission sources and removals from the agriculture and forestry sector.

- B. *DEC should establish mandatory reporting requirements that are as comprehensive as possible.*

Future emissions reporting will only be as accurate as the data available to DEC. Under

¹⁰ *See* Howarth, *supra* note 5, at 7, fig.1.

the CLCPA, by the end of 2020 DEC must “consider establishing a mandatory registry and reporting system” for individual sources. *Id.* § 75-0105(4). As of the date of this comment, DEC has not publicly released any draft rule or guidance for such a system. Failing to establish a registry and reporting system for GHG emissions will hinder the state’s ability to meet its emission reductions targets.

Currently, New York only requires reporting of GHG emissions from facilities that qualify as major sources under the Clean Air Act and reporting of CO₂ emissions from fossil fuel-fired electric power generators with a capacity of 25 megawatts (MW) or greater. *See* 6 NYCRR §§ 202-2.1; 242-1.4; 242-8.5. At the federal level, sources that emit 25,000 metric tons or more of CO₂e must report their emissions annually. *See* 40 C.F.R. § 98.2. To achieve the CLCPA’s goal of using the best available data to track emissions, DEC should establish a more comprehensive registry and reporting system that will use consistent methods to track and quantify emissions. DEC can, and should, close gaps in the record about the scale and sources of New York’s GHG emissions. As a start, states that have established more stringent reporting requirements than the U.S. Environmental Protection Agency (EPA), such as Oregon and Massachusetts,¹¹ might serve as useful models. States like California and Colorado¹² might also provide helpful examples of efforts by regulators to mandate reporting of “emissions associated with the generation of imported electricity and with the extraction and transmission of fossil fuels imported into” New York. *See* ECL § 75-0105(3).

As part of this effort to track emissions with more specificity, DEC must require reporting from dairies and landfills. NYSERDA data demonstrate that these sources are significant contributors to methane emissions, and yet these sources are not required to report emissions. *See* NYSERDA GHG Inventory at S-3, tbl.S-1. If current estimation methodologies do not exist, DEC must ensure they are developed quickly, and reliable estimates can be used in the meantime. The CLCPA excludes livestock emissions only from mandatory regulation and enforceable emissions limits, it does not limit reporting of such emissions nor does it limit reporting nor regulation related to methane from livestock waste.

C. *DEC must report geographic distribution of emission reductions and correlate with co-pollutant emissions levels.*

In order to fully implement the CLCPA’s mandate to prioritize GHG and co-pollutant emissions in “disadvantaged communities,” *see* ECL §§ 75-0103(14)(d); 75-0109(3)(d), DEC’s annual reporting must go further than simply listing total statewide GHG emissions. Annual reports should track emissions by geographic location so that the state can compare rates of reductions and monitor whether disadvantaged communities are in fact benefiting from early emission reductions. DEC should also correlate GHG emission reduction data with emission

¹¹ Among states with low mandatory reporting thresholds are Oregon, Massachusetts, Washington, and California, which have set their thresholds for sources of GHG emissions at 2,500 metric tons CO₂e per year on the low end and 10,000 metric tons CO₂e per year at the high end. *See* Or. Admin. R. 340-215-0030; 310 Mass. Code Regs. 7.17; Wash. Admin. Code 173-441-030; Cal. Code Regs. tit. 17, § 95101.

¹² For example, California’s Regulation for the Mandatory Reporting of Greenhouse Gases requires importers of CO₂ to adhere to certain emissions reporting requirements. *See* Cal. Code Regs. tit. 17, § 95101(c).

levels for co-pollutants such as NO_x and particulate matter, to track whether reductions in GHG emissions are bringing down co-pollutant levels, particularly in disadvantaged communities.

Without tracking this information, it will be impossible to determine whether the state is carrying out the CLCPA's equity mandate. DEC can work closely with the Climate Justice Working Group to develop a framework for tracking localized emissions data and comparing reduction rates from year to year across different areas of the state. Information collected through this process can also help DEC allocate regulatory and enforcement resources and set sector-specific priorities, as it will help illustrate where emissions are concentrated, which sectors produce the highest levels of co-pollutants, and where additional intervention is needed to drive further emission reductions in disadvantaged communities. Reducing co-pollutants such as fine particulate matter and NO_x, especially within disadvantaged communities, has clear public health benefits – an especially important consideration during the COVID-19 pandemic.

- D. *DEC should report confidence intervals for all emissions estimates in annual reporting and explicitly address how uncertainties will be treated in assessing whether New York has met emissions limits.*

Even if DEC implements a mandatory registry and reporting system, certain emissions estimates will remain uncertain. DEC should report quantified uncertainties in its annual reporting of GHG emissions to ensure future emission reductions are significant and reliable. Uncertainties are reported directly in EPA's national GHG inventory,¹³ are detailed in GHG inventories released by other states,¹⁴ and are detailed in the EPA tools DEC has used to estimate emissions.¹⁵ DEC should follow the same approach EPA uses in the national inventory to report confidence intervals for emission sources in New York's inventory. Without directly quantifying and reporting these uncertainties, it will be impossible to determine whether future emission reductions are achieved.

Currently, limits set in Part 496 are based solely on mean estimates of emissions in 1990. However, each of the emission sources included in the baseline estimate carry unique ranges of uncertainty due to limitations in measuring emissions directly as well as uncertainties associated with modeling. DEC should make explicit its plan for accounting for these uncertainties in assessing whether future limits are achieved. Without doing so, DEC invites the potential for reliance on highly uncertain emission reduction technologies or practices to play a disproportionate role in achieving emissions targets.

¹³ EPA, EPA-430-R-20-002, *Inventory of US Greenhouse Gas Emissions and Sinks 1999–2018* (2020), <https://www.epa.gov/sites/production/files/2020-04/documents/us-ghg-inventory-2020-main-text.pdf> (EPA GHG Inventory).

¹⁴ See, e.g., Sara Heald, Colo. Dep't of Pub. Health & Env't, *2015 Greenhouse Gas Inventory Update Including Projections to 2020 & 2030* (2019), <https://www.colorado.gov/pacific/cdphe/colorado-greenhouse-gas-reports>; Iowa Dep't of Nat. Res., *2018 Iowa Statewide Greenhouse Gas Emissions Inventory Report Technical Support Document* (2019), http://www.iowadnr.gov/Portals/idnr/uploads/air/ghgemissions/Final%202018%20GHG%20TSD_12.31.19.pdf.

¹⁵ See EPA, *Energy Resources for State and Local Governments* (last updated Oct. 22, 2020), <https://www.epa.gov/statelocalenergy/download-state-inventory-and-projection-tool>.

Based on EPA's GHG inventory, several emission sources included in DEC's reporting are associated with wide 95% confidence intervals, indicating poorly constrained estimates. For example, the 95% confidence interval for nitrous oxide emissions from soil management spans from 31% below to 31% above the mean, and for methane from landfills it spans from 25% below to 25% above the mean.¹⁶ While percent uncertainties in emissions from other sources such as energy-related sources may be smaller in comparison, they can still contribute disproportionately to overall uncertainty in the inventory due to their magnitude. Quantifying this uncertainty is particularly important for methane and nitrous oxide emissions and will be of increasing importance for any future net accounting, as emissions and removals from the agriculture and forestry sectors are among the most poorly constrained sources.

If similar patterns hold for New York state's inventory as seen in EPA's national inventory, the range of uncertainty in DEC's baseline may be greater than total emissions from the agriculture and forestry sectors.¹⁷ Therefore, DEC should ensure that future reductions are significant given quantified uncertainties. For example, mean estimates in 2030 may fall below the thresholds set in the proposed rule, but if uncertainty in these estimates is larger than that in the baseline estimate, perceived compliance with this reduction may not be valid. Accounting for and tracking these uncertainties is particularly important as DEC continues to revise methodologies for fugitive methane emissions, nitrous oxide emissions from fertilizer, and any other emission sources with updated methodologies.

III. DEC MUST IDENTIFY EMISSIONS LIMITS FOR EACH TYPE OF GREENHOUSE GAS

The CLCPA specifically directs DEC to identify GHG emissions limits "for each individual type of greenhouse gas." *See* ECL § 75-0107(2). At a minimum, DEC must identify 2030 and 2050 emissions limits in CO₂e for carbon dioxide, methane, nitrous oxide, hydrofluorocarbons (HFCs), perfluorocarbons, and sulfur hexafluoride.¹⁸ Yet the proposed regulation fails to comply with the statutory mandate and instead sets a single, generalized GHG emissions limit of 240.83 MMT CO₂e for 2030 and 60.21 MMT CO₂e for 2050. *See* Proposed 6 NYCRR § 496.4(b). This approach is clearly and flatly contrary to the law.

Setting individualized limits for each of the abovementioned GHGs will better position New York to achieve the CLCPA's ambitious goals. Such an approach would ensure attention is

¹⁶ *See* EPA GHG Inventory at 5-44, tbl.5-20 and 7-13, tbl.7-5.

¹⁷ In the national inventory, the 95% confidence interval spans from 2% below to 4% above the mean estimate for carbon dioxide, from 7% below to 12% above the mean estimate for methane emissions, and from 21% below to 26% above the mean for nitrous oxide emissions. *See* EPA GHG Inventory at 1-25, tbl.1-5. If these same ranges are applied to the NYSERDA 1990 estimate to approximate total uncertainty in the baseline, the overall width of the 95% CI would be over 25 MMT CO₂e, which is greater than emissions from agriculture, forestry, and other land use (17.13 MMT CO₂e) as shown in Table 1 of the Part 496 Regulatory Impact Statement.

¹⁸ The New York State Legislature lists these as types of greenhouse gases, but also includes an expansive definition to include any "substance emitted into the air that may be reasonably anticipated to cause or contribute to anthropogenic climate change." *See* ECL § 75-0101(7). Part 496 adopts this list of individual types of greenhouse gases in its similarly expansive definition of "greenhouse gas." *See* Proposed 6 NYCRR § 496.3(c).

paid to each type of GHG, even those whose overall contribution is relatively small. Limits for each type of GHG would also ensure that sources and regulators rationally allocate efforts to reduce emissions among GHG-specific sources between now and 2050. By contrast, a generalized approach creates incentives to prioritize reductions of one GHG over another based on short-term calculations that could ultimately make meeting the state’s emission reduction mandate more difficult. More specific limits will also provide more information to the regulated industries themselves about how best to reduce their emissions, as different sources are responsible for emissions of different GHGs.

Other states have set emission reduction goals for specific types of GHGs. For example, California set GHG-specific emission reduction targets of 40% below 2013 levels by 2030 for both methane and HFCs, as well as a 50% reduction target below 2013 levels for black carbon emissions over the same time period. Cal. Health & Safety Code § 39730.5(a). In 2019, Vermont passed a law requiring that HFC use be reduced by 40% below 2013 levels by 2030. 2019 Vt. Laws No. 65, S.30 § 2(a) (2019). In a similar vein, Colorado’s proposed Pollution Roadmap acknowledges that a recently promulgated regulation will help the state to meet HFC-specific reduction targets and calls for another rulemaking to establish methane-specific emission reduction targets.¹⁹ To fully implement the CLCPA, one of the most ambitious efforts in the nation to reduce all statewide GHGs, DEC must follow the letter of the law and identify limits for each individual type of GHG.

IV. DEC MUST ACCOUNT FOR ALL GHG EMISSIONS PRODUCED BY THE AGRICULTURE, FORESTRY, AND OTHER LAND USE SECTORS IN THIS AND FUTURE RULEMAKINGS

A. DEC must include and track all emissions from livestock in GHG totals.

The CLCPA requires DEC to “establish a statewide greenhouse gas emissions limit as a percentage of 1990 emissions.” ECL § 75-0107(1). “Statewide greenhouse gas emissions” is defined in relevant part as “the total annual emissions of greenhouse gases produced within the state from anthropogenic sources. . . .” *Id.* § 75-0101(13). The legislature clearly intends the statewide GHG emissions limit to be derived from a baseline that is as comprehensive as possible. In fact, the CLCPA specifies that:

In order to ensure the most accurate determination feasible, the department shall utilize the best available scientific, technological, and economic information on greenhouse gas emissions and consult with the council, stakeholders, and the public in order to ensure that *all emissions are accurately reflected in its determination of 1990 emissions levels.*

Id. § 75-0107(3) (emphasis added).

¹⁹ See Colo. Energy Office et al., *Colorado Greenhouse Gas Pollution Reduction Roadmap*, at x (2020); *id.* App. D at 2; see also 5 Colo. Code Regs. § 1001-26.

We support DEC’s inclusion of methane and nitrous oxide emissions from enteric fermentation and manure management in the 1990 baseline because the CLCPA mandates their inclusion. Livestock are a major contributor to GHG emissions. According to NYSERDA, in 2016 enteric fermentation accounted for 40% of total agricultural emissions and manure management accounted for 14%.²⁰ New York cannot meet its net zero emissions mandate without addressing emissions from livestock, and it is critical that DEC include these emissions in the 1990 baseline and in GHG reports going forward. Because livestock emissions are included in the baseline used to calculate future emissions targets, it follows that DEC and other agencies must take action to ensure the state reduces these emissions. *See id.* § 75-0109(2)(a) (DEC regulations “shall. . . [e]nsure that the aggregate emissions of greenhouse gases from greenhouse gas emission sources will not exceed the statewide greenhouse gas emissions limits.”).

Importantly, the CLCPA provides no exceptions for livestock emissions in its definition of GHG emissions or GHG emission sources. *Id.* §§ 75-0101(11), (13). While livestock emissions are exempted from the requirement that DEC control GHG sources through legally enforceable emissions limits, performance standards, and other requirements, DEC still has a duty to address all methane and nitrous oxide emissions associated with handling, storage, and disposal of livestock manure (from both livestock in pens and pastures) and enteric fermentation. Mandatory limits and requirements are not the only way to address these emissions; DEC can and must reduce emissions from livestock sources through voluntary incentive programs, provision of technical resources, highlighting best practices, and increasing farmer-to-farmer knowledge-sharing as well as other measures to promote better manure management practices and/or reduce manure production and enteric fermentation in the state.

- B. *DEC must include and track all emissions from composting, anaerobic digestion, and methane oxidation, including CO₂ emissions.*

DEC proposes to omit from its baseline calculations certain emissions related to human activity within the state, in violation of the CLCPA’s broad definition of GHG emissions. The current 1990 baseline proposes to omit “CO₂ released from composting, anaerobic digestion, and methane oxidation at a landfill from the proposed rule baseline, as these are equivalent to natural processes of decomposition.”²¹ Proposed Part 496 Regulatory Impact Statement. DEC also states that “the Department is proposing to exclude CO₂ associated with organic waste except in the case of combustion.”²² *Id.*

There is no basis to exclude emissions from organic waste because they are “equivalent to natural processes of decomposition.” As described above, the CLCPA makes clear that the 1990 baseline should include *all* anthropogenic emissions. CO₂ released from organic waste is clearly anthropogenic, as it would not be produced without human activity generating food waste and other organic waste (e.g., yard waste). Indeed, New York has recently given much attention to the environmental and climate harms caused by food waste and has enacted the Food Donation and Food Scrap Recycling Act to reduce it. *See* ECL § 27-2201 *et. seq.* A 2017

²⁰ NYSERDA GHG Inventory at 34–35.

²¹ Proposed Part 496 Regulatory Impact Statement.

²² *Id.*

NYSERDA report assessing the costs and benefits of this legislation found that institutions (including hospitality and retail) in New York produced 416,625 tons of food waste per year.²³ NYSERDA found that the cost associated with GHGs released as a result of this waste was \$4,411,721 per year (using a social cost of carbon amount of \$38 per metric ton, likely an underestimate).²⁴

Similarly, CO₂ produced from anaerobic digestion of animal waste is also a result of human action — keeping and raising livestock and dairy cows. Policies that will result in less livestock waste, such as improving animal feeds, would reduce production of waste and thus of digester CO₂. These emissions must be included under the CLCPA’s expansive consideration of GHG emissions explained above.

If DEC finalizes the proposed rule without including these emission sources, it should at least increase transparency by specifying the proportion of emissions omitted from the baseline. Without additional information, the magnitude of these proposed omissions is unclear and highly dependent on model assumptions DEC has not detailed in its methodology. For example, DEC has not provided information on the proportion of landfill emissions assumed to be oxidized and therefore unaccounted for in the inventory.²⁵ To combat underestimation of emissions, DEC should at the very least include these CO₂ emissions in the baseline and provide greater transparency to its calculations of waste emissions.

As New York’s food waste legislation and analysis demonstrates, organic waste is a contributor to GHG emissions and a result of human activity – overproduction and waste of food – that leads to excessive amounts of organic materials going into landfills, compost, digesters, and other means of disposal. The best way to address these emissions is with policies that reduce the amount of organic waste generated. DEC must include these emissions in the 1990 baseline and take steps to reduce them.

Finally, DEC must also take into account emissions from exported waste. New York sends a large proportion of its solid waste to landfills and incinerators outside of the state. The CLCPA defines “statewide greenhouse gas emissions” as “the total annual emissions of greenhouse gases produced within the state from anthropogenic sources and 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

²³ NYSERDA Rep. 17-06, *Benefit-Cost Analysis of Potential Food Waste Diversion Legislation* 5 (Mar. 2017).

²⁴ *Id.* at 10–11.

²⁵ For example, the EPA Solid Waste module that DEC relies on to calculate emissions from landfills assumes that 10% of methane at each landfill is oxidized into CO₂ by default (*see* EPA, *Energy Resources for State and Local Governments* (last updated Oct. 22, 2020), <https://www.epa.gov/statelocalenergy/download-state-inventory-and-projection-tool>). In the module, EPA states that “little information is available on the amount of CH₄ oxidized during diffusion through the soil cover over landfills. The assumed ten percent is based on limited measurements.” However, based on facility-specific information this parameter can vary from 0–35% according to EPA, *see* EPA GHG Inventory at 7-12, and DEC has not described its approach to this assumption.

§ 75-0101(13). Emissions from New York waste – even if disposed of in another state – are “produced” within the state. Actors within the state control the amount of waste generated and how it is disposed, and thus New York must account for these emissions even if they physically take place in another state. The legislature’s specific inclusion of GHGs produced out of state for electricity used within the state reveals an intent—found throughout the CLCPA—to account as comprehensively as possible for all GHG emissions that New York has sufficient control over to reduce. New York clearly retains power to reduce waste and choose more climate-friendly methods of disposal; thus DEC must include emissions associated with exported waste in the 1990 baseline.

C. *In future accounting for net emissions, DEC should ensure emissions reductions accurately protect forest carbon sequestration.*

In its Regulatory Impact Statement for Part 496, DEC states that:

[T]he accounting of [anthropogenic CO₂ emissions resulting from the combustion of biomass and biofuels] may be revaluated [sic] as part of net statewide greenhouse gas emissions in the annual report (ECL § 75-0105) to avoid double-counting. The Department is specifically interested in evaluating the role of products grown within the State in support of maintaining net carbon sequestration, which is key to achieving the CLCPA net zero emissions goal, versus imported products that will not contribute to that goal.

In assessing compliance with the CLCPA’s climate goals in the forestry sector, DEC should focus on accurate GHG accounting rather than the growth of the forest product market. In future net accounting of GHG emissions, DEC should ensure that emission reductions do not jeopardize long-term carbon stocks in existing forests and ongoing sequestration as these systems continue to grow. On average, 246,000 acres of forested land in New York are thinned or harvested annually, and an additional 65,000 acres are converted to non-forest land uses.²⁶ These removals and conversions result in losses of sequestered carbon and also reduce the potential for future carbon sequestration from the removal of trees which would otherwise have continued to sequester carbon. Harvests, including removals for biomass energy and wood products, consume between 38–49% of net growth in New York state, already significantly reducing the potential of these systems to sequester carbon.²⁷ Additionally, soil carbon losses following harvest can be significant, and are rarely accounted for in considering the impacts of harvesting on carbon balance.²⁸ Most forest stands in New York are predicted to continue to have positive growth increments for several decades if harvesting intensities are not accelerated, indicating that

²⁶ USDA Forest Serv., Resource Update FS-250, *Forests of New York, 2019* (Sept. 2020), <https://doi.org/10.2737/FS-RU-250>.

²⁷ *Id.*; see also Thomas Bucholz, Charles D. Canham & Steven P. Hamburg, *Forest Biomass and Bioenergy: Opportunities and Constraints in the Northeastern United States* (2011), at 20 tbl.2 https://forestindustries.eu/sites/default/files/userfiles/1file/report_biomass_2011.pdf.

²⁸ See Luke E. Nave et al., *Harvest Impacts on Soil Carbon Storage in Temperate Forests*, 5 *Forest Ecology & Mgmt.* 857 (2010), <https://doi.org/10.1016/j.foreco.2009.12.009>; Jason James & Rob Harrison, *The Effect of Harvest on Forest Soil Carbon: A Meta-Analysis*, 7 *Forests* 308 (2016), <https://doi.org/10.3390/f7120308>.

premature harvesting can undercut the opportunity for future sequestration in these systems.²⁹ In future net accounting, DEC must ensure that it accurately accounts for these negative impacts on carbon sequestration from forest product harvests, even if they are at odds with the growth of this sector.

DEC should ensure that gross and net emission reductions are additional to maintaining existing carbon stocks in New York vegetation and soils. Reductions in net emissions through increased sequestration *rates*, for example through post-harvest regrowth, should not come at the cost of losses in previously sequestered carbon and should accurately account for the lost sequestration potential following harvest. Similarly, DEC should not consider biomass combustion and biofuel emissions to be carbon neutral, regardless of future federal guidance or rulemakings. While emissions from certain biomass combustion or biofuel feedstocks may be offset in the long-term by regrowth, DEC should ensure that estimates of emissions from biogenic sources in New York account for direct emissions from these feedstocks, lost sequestration potential following harvest, and the particular regional, timeframe and feedstock-specific implications of these harvests in New York forests, which indicate that biogenic emissions are not categorically carbon neutral.³⁰

In contrast to Intergovernmental Panel on Climate Change protocol, DEC accounts for emissions from biomass combustion at site of combustion rather than at harvest for purposes of the 1990 baseline. DEC also states that it may re-evaluate this decision when calculating and assessing net emissions. DEC should ensure that emissions from biomass combustion outside of state lines are not excluded from net emissions estimates, as this would inaccurately exclude emissions resulting from biomass harvested in New York but utilized elsewhere, while also allowing for regrowth of forests following harvest within the state to count towards net emission reductions in the future. In re-evaluating its approach to net accounting, DEC should ensure that emissions from biomass and biofuels accurately and comprehensively reflect the true carbon cost of biomass harvesting and combustion. Any future changes in methodology for estimating emissions from the agriculture and forestry sectors must be consistent and parallel to baseline estimates and include quantified uncertainties to ensure compliance with the net zero emissions target by 2050.

* * *

In conclusion, the undersigned organizations request that DEC consider the above comments prior to finalizing the proposed rule and look forward to working with the Department to fully implement the CLCPA going forward.

²⁹ Buccholz, Canham & Hamburg, *supra* note 27; see also Marco Albani et al., *The Contributions of Land-Use Change, CO₂ Fertilization, and Climate Variability to the Eastern US Carbon Sink*, 12 *Global Change Biology* 2370 (2016), <https://doi.org/10.1111/j.1365-2486.2006.01254.x>.

³⁰ See, e.g., Richard Birdsey et al., *Climate, Economic, and Environmental Impacts of Producing Wood for Bioenergy*, 13 *Envtl. Res. Letters* 050201 (2018), <http://iopscience.iop.org/article/10.1088/1748-9326/aab9d5/pdf>; Jacopo Giuntoli et al., *Carbon Accounting of Bioenergy and Forest Management Nexus: A Reality-Check of Modeling Assumptions and Expectations*, 134 *Renewable & Sustainable Energy Revs.* 110,368 (2020), <https://doi.org/10.1016/j.rser.2020.110368>.

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Fossil Free Tompkins
HabitatMap
HeatSmart Tompkins
Long Islanders for Climate Justice
New Yorkers for Cool Refrigerant Management
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Riverkeeper, Inc.
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