

June 30, 2023

New York State Department of Environmental Conservation  
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New York State Energy Research and Development Authority  
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*Via email to [commentmanagement.com/comment/Cap-and-Invest](mailto:commentmanagement.com/comment/Cap-and-Invest)*

### **Re: Feedback on Cap-and-Invest Regulations**

On behalf of our thousands of supporters and members across New York State, the undersigned organizations submit these comments regarding DEC and NYSERDA's development of regulations to implement New York's Cap-and-Invest Program ("NYCI").

We greatly appreciate and applaud NYCI's economy-wide approach. Inclusion of all major emitting sectors is critical to meet New York's economy-wide greenhouse gas (GHG) reduction targets under the Climate Leadership and Community Protection Act (CLCPA). As part of this economy-wide approach, **NYCI must address GHG emissions from agriculture**.

The agricultural sector is a major source of GHGs that are driving climate change. Based on DEC's 2022 Statewide GHG Emissions Report, total agricultural emissions in New York totaled about 22.08 million metric tons of CO<sub>2</sub>e, representing 6% of statewide emissions.<sup>1</sup> An overwhelming 93% of these emissions come from livestock management practices, including enteric emissions and manure emissions.<sup>2</sup> Troublingly, unlike other sectors, agricultural emissions are growing – overall agricultural emissions in New York were 44.5% higher in 2020 than 1990, and livestock emissions were 51% higher.<sup>3</sup>

Moreover, agricultural emissions are often larger than understood. Recent evidence suggests that many models of agricultural emissions are overly conservative.<sup>4</sup> Agriculture's impact is also often understated because it generally does not include emissions from inputs including fertilizer manufacturing, out-of-state feed production, and on-farm fuel and electricity

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<sup>1</sup> New York State Department of Environmental Conservation, *2022 NYS Greenhouse Gas Emissions Report: Agriculture, Forestry, and Other Land Use*, [https://www.dec.ny.gov/docs/administration\\_pdf/ghgafolu22.pdf](https://www.dec.ny.gov/docs/administration_pdf/ghgafolu22.pdf).

<sup>2</sup> *Id.*

<sup>3</sup> *Id.*

<sup>4</sup> For example, one recent study compared atmospheric measurements taken above and downwind of animal production regions to standard EPA and other models and found that direct measurements showed animal methane emissions 39%-90% higher than the model estimates of animal methane emissions. Matthew N. Hayek & Scot M. Miller, *Underestimates of methane from intensively raised animals could undermine goals of sustainable development*, 16 *Environ. Research Letters* (2021), <https://iopscience.iop.org/article/10.1088/1748-9326/ac02ef>.

use. Nor do most accounts (including those used by NYS agencies) properly account for the emissions from land conversion and the reduction in the amount of carbon that would have been sequestered if the land had remained as natural vegetation – known as the carbon opportunity cost.<sup>5</sup> When these emissions are factored in, food system emissions account are far greater – for example a recent assessment of New York City’s greenhouse gas emissions found that 20% are from food,<sup>6</sup> and studies find that on globally food system is responsible for a third of emissions.<sup>7</sup>

Admittedly, agricultural emissions are often diffuse and dependent on environmental and biological factors making quantifying emissions from the agricultural sector challenging. Thus the NYCI program should have particular provisions to improve monitoring and measurement of these emissions. We support efforts already moving forward at Cornell and elsewhere to improve understanding and assessment of these emissions and urge the NYCI program to expand and continue these critical research and development projects.

These uncertainties demonstrate the need not only for additional state-funded or conducted research but also entity-level reporting by the largest facilities to better understand and quantify agriculture’s climate footprint. In particular, we urge that the NYCI program require the largest animal operations, such as dairies with over 1,000 cows, to report their emissions (using feasible models and methods established by DEC). A substantial majority of agricultural emissions come from the largest animal facilities. For example, nationwide the largest animal operations contribute over 80% of the methane and nitrous oxide emissions from manure.<sup>8</sup> Based on 2017 USDA data, more than 38% of dairy cows in New York are located in only 142 facilities with 1,000 or more dairy cows, just 3% of the dairy operations in the state.<sup>9</sup> Requiring these few large-scale operations to report their emissions would capture a significant portion of New York’s agricultural emissions, helping policy makers set appropriate emissions goals and agencies better tailor their programs and resources to reduce emissions most effectively.

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<sup>5</sup> Matthew Hayek et al., *The Carbon Opportunity Cost of Animal-Sourced Food Production on Land*, 4 Nature Sustainability 21 (Jan. 2021); Timothy Searchinger et al., *Assessing the Efficiency of Changes in Land Use for Mitigating Climate Change*, 564 Nature 249 (Dec. 13, 2018); Food and Agriculture Climate Alliance, *Food and Agriculture Climate Alliance Presents Joint Policy Recommendations* (2021), [https://agclimatealliance.com/files/2020/11/faca\\_recommendations.pdf](https://agclimatealliance.com/files/2020/11/faca_recommendations.pdf); Peter Lehner & Nathan A. Rosenberg, *Farming for our Future: The Science, Law, and Policy of Climate Neutral Agriculture* 49 -50 (2021).

<sup>6</sup> City of New York, *Mayor Adams Commits to Reducing City’s Food-Based Emissions by 33 Percent by 2030 After Releasing new Greenhouse Gas Emissions Inventory Incorporating Emissions From Food* (Apr. 17, 2023), <https://www.nyc.gov/office-of-the-mayor/news/263-23/mayor-adams-commits-reducing-city-s-food-based-emissions-33-percent-2030-after-releasing#0>.

<sup>7</sup> See M. Crippa et al., *Food Systems are responsible for a third of global anthropogenic GHG emissions*, 2 Nat Food 198 (2021).

<sup>8</sup> Lehner & Rosenberg, *supra* note 5 at 44 (defining the largest animal operations as those with over 1,000 cattle on feed, 1,000 dairy cows, 2,000 finishing hogs, 100,000 turkeys sold, 300,000 broilers sold, or over 50,000 laying hens).

<sup>9</sup> United States Department of Agriculture, *2017 Census Volume 1, Chapter 1: State Level Data, New York, Table 17, Milk Cow Herd Size by Inventory and Sales*, [https://www.nass.usda.gov/Publications/AgCensus/2017/Full\\_Report/Volume\\_1,\\_Chapter\\_1\\_State\\_Level/New\\_York/st36\\_1\\_0017\\_0019.pdf](https://www.nass.usda.gov/Publications/AgCensus/2017/Full_Report/Volume_1,_Chapter_1_State_Level/New_York/st36_1_0017_0019.pdf).

Finally, while DEC has indicated that agriculture is likely to be a non-obligated source, the NYCI program should consider any agricultural facility that exceeds the threshold emissions limits for the cap-and-invest program to be an obligated source.

Neither New York nor the U.S. will be able to achieve our climate goals without accelerating the transformation of agriculture to more climate-friendly practices. The visionary and precedent-setting cap-and-invest program to be truly economy wide must include appropriate specific consideration of this sector. In sum, given that agriculture is an immense and concentrated source of GHG emissions, the NYCI should require the largest animal operations in the state to participate in the cap-and-invest and reporting programs.

Thank you for your consideration of these comments.