



Cornell University

Department of Ecology and Evolutionary Biology

March 31, 2023

Governor Kathy Hochul
Assembly Speaker Carl E. Heastie
Senate Majority Leader Andrea Stewart-Cousins
Senator Pete Harckham
Assemblymember Deborah Glick
Senator Kevin Parker
Assemblymember Didi Barrett
(via email attachment):

Dear Governor Hochul and Senate and Assembly leaders:

I write to you out of concern that actions may be taken to weaken the Climate Leadership and Community Protection Act (CLCPA) of 2019 based on mis-information about the Act. For reference, I am a member of the New York State Climate Action Council (by appointment from Speaker Heastie), an endowed professor at Cornell University, an Earth systems scientist, and an expert on greenhouse gas accounting for methane, hydrogen, and biofuels. I worked closely with former Assemblymember Steve Englebright in drafting the greenhouse gas accounting portions of the CLCPA.

Some critics of the CLCPA have argued that the greenhouse gas accounting specified by the Act is incompatible with the approach sanctioned by the Intergovernmental Panel on Climate Change (IPCC). This is at best misleading. Simply stated, there is no IPCC approved approach for greenhouse gas accounting. At issue is how one compares the climate consequences of methane to those of carbon dioxide. Both contribute greatly to global warming, but there are several differences between the gases. Methane is a far more powerful greenhouse gas for the time it is in the atmosphere, but its consequences are largely limited to 30 to 40 years from the time of emission, while the effects of a release of carbon dioxide can last for well over 100 years. Commonly, methane emissions are converted to "carbon dioxide" equivalents based on a defined period of time after a release of methane and calculated according to a "global warming potential" (GWP).

Since the early 1990s, the IPCC has given estimates on different time scales for looking at methane, including 20 years (GWP20), 100 years (GWP100), and 500 years (GWP500). When governments negotiated the Kyoto Protocol in the early 1990s, they specified GWP100 for methane. Federal agencies have used GWP100 ever since, in contrast to the GWP20 specified for New York in the CLCPA. It is important to recognize that the choice of GWP100 by the Kyoto negotiators was not based on any specific recommendation from the IPCC. At the time in the early 1990s, the role of methane was under-appreciated by both scientists and policy makers, and negotiators chose the middle value from the early IPCC reports (ie, GWP100) with little or no discussion. However, within the last decade, it has become much more clear how damaging methane is to the climate, and in the IPCC (2013) AR5 synthesis, the IPCC clearly stated the use of a 100 year time period was "arbitrary." Since 2013, the IPCC has recommended picking a time frame for methane appropriate to the concern. In the latest IPCC AR6 synthesis (published in parts since Aug 2022, with the Executive Summary coming earlier this month), the IPCC calls for extremely urgent action to reduce greenhouse gas emissions, and specifies the next one to two decades are critical. On this time scale, GWP100 does a terrible job of representing the climatic

damage caused by methane. The 20-year time frame (GWP20), endorsed in the CLCPA, is far preferable, if one is concerned about the next two decades. Large reductions of both carbon dioxide and methane over the next decade or two are critical if the Earth is to move away from the precipice of runaway, irreversible climate disruption.

Of note, the latest IPCC report states that methane has contributed 0.5° C of warming and CO₂ 0.75° of warming since the 1800s. That is, methane's contribution to global warming is equal to 67% of that of CO₂ since the start of the industrial revolution. The use of GWP100 hugely underestimates this, and suggests far less urgency is needed to reduce methane emissions. GWP20 far more effectively represents the historical importance of methane to global warming documented in the IPCC (2023) synthesis. Stated clearly, the use of GWP100 by federal agencies in greenhouse gas accounting is out of touch with current science.

Let me add that the use of GWP100 by federal agencies is also out of touch with current political thinking. Since the UN COP26 in Glasgow, Scotland (Nov 2021), President Biden has called for all nations to reduce methane emissions by 30% by 2030. He speaks of methane frequently, and when he does, he always says methane is more than 80 times more powerful than CO₂. This “more than 80 times” language is based on GWP20. The President and most other climate-knowledgeable leaders have moved away from GWP100 and are now implicitly endorsing GWP20.

Finally, some critics of the CLCPA also have suggested that the CLCPA accounting may interfere with New York receiving funds from the Inflation Reduction Act (IRA) of 2022. I have seen no convincing evidence or argument to support this concern over the IRA funding. The federal agencies will use federal greenhouse-gas accounting approaches, but that does not mean the accounting by New York State must follow the same protocols. This appears to be more fear-mongering than well-reasoned logic.

I ask that you actively resist efforts to weaken the CLCPA. I would be pleased to talk with you further about the CLCPA and its implementation. The views I express here are my best professional judgement and are based on a large body of peer-reviewed science. These views should not be construed as official positions of either Cornell University or the Climate Action Council.

Sincerely,

A handwritten signature in black ink, reading "Robert W. Howarth". The signature is written in a cursive style with a large, sweeping flourish at the end.

Robert W. Howarth, Ph.D.
*The David R. Atkinson Professor of Ecology
and Environmental Biology*