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Dear Members of the New York State Climate Action Council,

Please accept these comments on the New York Climate Action Plan. My comments focus on the role of bioenergy and plans for forest management outlined in the CAP. As someone very familiar with plans to deploy biomass power in Massachusetts, as well as biomass proposals in other states, I wish to offer some cautionary thoughts about the apparently important role assigned to biopower in the NY CAP.

While the plan acknowledges the uncertainty surrounding the carbon impacts of biomass, it fails to mention the certainty that has developed over the last year. In fact, the Manomet Study, conducted in Massachusetts, treated “logging residues” as essentially carbon neutral but showed that when trees are burned for fuel, net emissions continue to be greater than from fossil fuels for several decades, even taking forest carbon sequestration into consideration. No challenge has been offered to the modeling approach utilized in the Manomet Study, which used basic growth curves and validated Forest Service data as its foundation.

Recognizing that promoting forms of energy that emit more carbon than fossil fuels was incompatible with the State’s mandated goals of reducing emissions from the power sector below 1990 levels, Massachusetts responded to the findings of the Manomet Study by proposing regulations that would restrict the eligibility of biomass power for renewable energy credits. The draft regulations provide that lifecycle emissions from eligible biomass, estimated over a twenty-year period, should be no more than 50 percent those of a new natural gas plant. This is a sane and science-based response that is similar to restrictions that have been placed on lifecycle emissions of liquid biofuels.

Given the similarities between the forests of Massachusetts and New York, there is every reason to assume that the Manomet Study’s conclusions apply to New York, as well. It is thus worrying that given the scenarios for increases in biomass power generation in New York discussed in the CAP, it seems inevitable that biomass fuel needs will outstrip the readily available sources of fuel, and that forest harvesting will have to increase. This scenario is even outlined as a desirable outcome in the Renewable Fuels Roadmap and Sustainable Biomass Feedstock Supply for New York, document, which the CAP cites.

This Roadmap document’s “Sustainability Considerations for Harvest of Woody Biomass from Forests” includes the provision that forest harvest should be limited so that “it never exceeds the net annual growth rate of forests in each county”. While this might sound as if it would ensure that biomass fuel is carbon neutral, it does not. The Manomet study concluded that increases in biomass energy generation can lead to increases in GHG emissions over the baseline, even when sustainable forestry is practiced. To provide a more detailed explanation of why this is so, I am attaching two documents with this comment letter – my review of the Manomet study, which outlines its methodology and assumptions, and a letter recently submitted to the State of Washington Department of Natural Resources from three prominent carbon and climate change researchers, commenting on that state’s policy of considering biomass to be carbon neutral as long as the state’s forest stocks remain constant.

The assumption that forests can provide carbon neutral or even “low carbon” fuel is simply not supported by the best science. Yet despite the CAP report’s acknowledgement that the true carbon

status of biomass is not known, the assumption of full carbon neutrality is made in the graphs and tables included in the report, including the cost analyses.

The vision for New York's forestry sector that is included in the CAP is compromised by the obvious intention to exploit forests for fuel. The goals include maximizing both the "long-term carbon sequestration and bio-energy potential of the state's forests". However, these goals are mutually incompatible. It is not possible to supply the fuel that would be necessary to provide any meaningful amount of power generation, and also do good forest management that maximizes carbon sequestration. Energy Information Administration data show that New York generated about 6,652,491.75 MWh of power in 2009. Replacing 5 percent of this with biomass power would require around 11 million tons of wood per year, or more than five times the amount that would be available if every scrap of logging residues generated in the state were used for fuel (and therefore more than ten times the amount available if one half of residues are left onsite to support soil fertility). Given the current aboveground biomass of New York's forests, replacing 5 percent of the State's current generation with biomass would require the equivalent of clearcutting around 125,000 acres of forest a year, or 250,000 acres per year if only half the trees were removed.

Reclamation of idle agricultural land for biofuels production may be one way to produce lower-carbon biomass fuels, but this goal is not compatible with the other goal of expanding forests. As the report itself observes, provision of the biomass needs to occur before the facilities to burn it or process it into biofuels are built.

The goal in the forestry section to "Identify and treat 25 percent of all under-stocked forest stands on timberland by 2025 in order to achieve full stocking level" appears to be a stalking horse for biofuels production. "Treat" is but a euphemism for harvest, yet there is no body of credible research or modeling that shows that forest thinning or harvesting can appreciably increase forest carbon sequestration in a time period compatible with New York's goals for reductions in emissions. In fact, as carbon accounting protocols of the Intergovernmental Panel on Climate Change acknowledge, harvesting of trees – even small, scrubby, non-commercial trees – leads to a direct emission of carbon that can take decades to be re-sequestered. Thus, "treating" "understocked" acres by 2025 will actually represent a net and ongoing emission of carbon that will last considerably past the target dates for carbon reductions.

At least one other omission in the report's forest carbon accounting approach is worth noting. The report does not include carbon emissions from soils, even though soil carbon stocks are greater than aboveground carbon stocks, and even small disequilibria between soil carbon inputs and outputs can lead to quite major fluxes. For instance, a recent meta-analysis¹ revealed that harvesting activities on average release 8 percent of soil carbon. Soil carbon flux should thus be accounted for – particularly if forest harvesting is predicted to increase in response to demand for biomass.

Overall, while the CAP states that uncertainties about the carbon impacts of biomass and biofuels exist, it does not truly integrate or acknowledge these uncertainties and their impacts on New York's climate-related goals. Given the important role envisioned for biomass power in the State, this is a serious omission.

Thank you for the opportunity to comment.

Mary S. Booth
(attachments: Manomet Study Review and Harmon-Searchinger-Moomaw letter)

¹ Nave, L. E., et al. 2010. Harvest impacts on soil carbon storage in temperate forests. *Forest Ecology and Management*, 259: 857-866.