To: New Jersey Department of Environmental Protection
From: New Jersey Conservation Foundation
Date: Friday, March 6, 2020
RE: Response to the NJDEP Stakeholder Meeting on 2/21/2020 regarding the Greenhouse Gas Monitoring and Reporting Rule

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Summary

The New Jersey Conservation Foundation (NJCF) respectfully offers the following comments to DEP on the greenhouse gas monitoring and reporting rule, to help ensure that New Jersey will best be able accurately measure and ensure full compliance with the greenhouse gas (GHG) reductions required by the Global Warming Response Act (GWRA), consistent with state's other cutting-edge clean energy goals. Our comments can be summarized in the following key recommendations:

A. The rule should use the established GWRA baselines and emission reduction goals, but should create a separate GWRA 2050 GHG emission goal and budget for GHG emissions associated with electric imports, distinct from the GWRA 2050 goal and budget for in-state GHG emissions, with fungibility or transfer of emission reductions between the budgets only when the DEP has taken steps to fully ensure such a transfer will not result in any increase of total GHG emissions, within or outside of New Jersey, above the levels required by the GWRA. In parallel, the DEP should establish new approaches to measure the GHG emissions from out-of-state generation of electricity that is consumed by New Jersey customers, and avoid continuing to use the methodologies used since 2009, which would introduce significant errors and are likely to lead to higher and unacceptable levels of emissions under today's market and regulatory systems.

B. To measure emissions from out of state generation of electricity consumed in New Jersey going forward, DEP must develop a new approach that accurately identifies the actual GHG emissions from the out of state generation of electricity consumed in New Jersey in each dispatch interval in the PJM electricity market. To do this, we recommend a predictive approach based on the most accurate models of PJM's actual electric system and power plant dispatch and LMP pricing system, including the shift factors that indicate the share of the power flows on the interfaces with New Jersey that come from specific power plants during each dispatch interval. These predictive approaches should then be followed up using actual dispatch and emissions data to measure cumulative emissions from all generation resources whose output flowed across those interfaces, and to estimate the share of their output that actually was consumed in New Jersey. Measurement and GWRA compliance should be based on total, cumulative annual amount of such emissions.

C. These total, cumulative actual GHG emissions due to generating electricity in other states that is consumed in New Jersey should be for the purposes of determining progress towards and compliance with the GWRA requirements, with no "netting" of these cumulative actual emissions against the actual emissions of electricity generated in New Jersey but consumed outside of the state (i.e., "exports"). This is because any such in-state emissions must be reduced in any event, consistent with the GWRA's de-facto cap and budget, the RGGI cap and budget, and New Jersey's plan to achieve 100% clean electricity generation in the state. As such, in-state emission reductions will already be counted as reductions against and within those budgets. Attributing any additional regional reductions to them, by netting them against emissions from generating

imported MWH, would count in-state emission reductions twice and would thus overestimate compliance and underestimate actual emission reductions, potentially to a very large degree. This is due to the well-known "waterbed effect" of a cap-and-trade program.[1]

D. In any event, the DEP should end the practice of netting imported and exported MWH and attributed GHG emissions only to any excess of imports over exports. This approach zeroes out all emissions associated with electricity generated out of state but consumed in New Jersey, no matter how carbon intensive it is, as long as New Jersey exports a similar number of MWH, no matter how carbon intensive it is. This "net MWH x emission rate" approach compounds both double counting and mismeasurement problems to such an extent that it should have no place in determining compliance with environmental regulation or gauging success in climate policy.

In addition, to further promote transparency, dialogue and better stakeholder engagement, we recommend that all stakeholder comments be made available to the public on the agency's website (or relevant government site).

Separate GWRA targets and budgets for electricity import emissions and in-state emissions.

As currently calculated, there is an assumption of zero emissions associated with electric imports and the budget for imports based on the 2006 baseline is then added to in-state emissions to create a larger budget.

According to New Jersey's recent EMP, the total GWRA GHG emission budget for 2050 is 24.1 million metric tons (MMT).[2] This overall budget appears to include 2.34 MMT of emissions that the GWRA allows for emissions due to imported electricity, based on an 80% reduction of the emissions attributed to 2006 electricity imports.[3] NJCF does not disagree with or oppose these targets. However, we are deeply concerned that the blending together of these two types of emission reductions, from in-state sources and from electricity imports, into a single, fungible budget is highly likely to lead to an increase in overall emissions to levels significantly above those allowed by the GWRA. This unintended exceedance of the GWRA limits is highly likely under such a combined budget because it opens the door to a variety of GHG measurement, accounting and attribution errors.

The fundamental problem is that such a combined budget allows deeper reductions in emissions due to imports to be used as offsets within the GWRA budget to allow the budget to considered to have been met, even if in-state GHG sources fail to reach the required 80% reduction by 2050. Yet there are strong and well-established policy considerations that show how imputing such reductions to emission sources under a cap can readily fail to create any net emission reductions at all.

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[1] See, e.g., Dallas Burtraw, *Concepts for Carbon Pricing.* July 19, 2019. Resources For the Future. Available at: https://www.pjm.com/-/media/committees-groups/task-forces/cpstf/20190726/20190726-item-05-carbon-pricing-concepts.ashx

[2] "Per the Global Warming Response Act of 2007 (GWRA), New Jersey is obligated to reduce its greenhouse gas emissions to 24.1 million metric tons (MMTs) of carbon dioxide equivalent (CO2e) by 2050 (80x50)." 2019 New Jersey Energy Master Plan, Pathway to 2050, p. 21, https://www.nj.gov/emp/docs/pdf/2020_NJBPU_EMP.pdf

[3] "2012 Update", 2012 Update to New Jersey's Statewide Greenhouse Gas Emissions Inventory, Michael Aucott, Marjorie Kaplan, and Jeanne Herb; Rutgers University, New Brunswick, NJ, March 2015.

The first of these concerns is the "waterbed effect" mentioned above in the context of how netting New Jersey emission reductions against the higher emissions of imported electricity would create double-counting.[4] To see how this effect could result in double for imports, it is only necessary to consider Pennsylvania's intended entry into RGGI, and reverse the analysis presented above. That is, any emission reductions in Pennsylvania emissions from generating electricity consumed in New Jersey would free up additional RGGI allowances under Pennsylvania's RGGI cap. These allowances would then almost certainly be consumed by other emitters subject to the RGGI cap, leading to just as many emissions overall as there were before the reduction in imported emissions. These increases, it should be noted, would occur at other plants or at other times than the actual reductions associated with New Jersey's imports. As a result, under a single, fungible GWRA budget, the emission reductions associated with imports could be used, in New Jersey, to allow higher levels of emissions from New Jersey's transportation, manufacturing or building sectors, without exceeding the overall combined budget. But, since these import-related emission reductions were countered by other increases in emissions on the RGGI cap, they would not actually offset the increased transportation, manufacturing and building emissions in New Jersey, and New Jersey's emissions would exceed the GWRA's requirements. Pretending there is such a reduction and adding that imaginary reduction to the New Jersey GWRA budget will simply expand the GWRA budget by the amount of the imaginary reductions and increase overall GHG emissions to the atmosphere above the amount required by the GWRA. To prevent this problem, New Jersey could retire an equivalent amount of RGGI allowances, equal to the actual emission reductions associated with imports, before allowing those emission reductions to be used to offset higher emissions from non-power sector emitters under the GWRA budget within New Jersey.

However, for any such transfer of emission reductions from the GWRA's electricity import requirements to its in-state emission reduction requirements, the emission reductions associated with imports must be accurately measured. This is impossible under the current approach of netting annual imported MWH against annual exported MWH, and then only counting emissions associated with any net inflow of MWH. This approach completely erases from GHG accounting all of the emissions associated with the imported electricity that is netted out, as well as double counting any emission reductions under the RGGI and GWRA caps that show up in the MWH exported from New Jersey, and therefore cannot possibly be accurate as long as there are significant inflows and outflows of power between New Jersey and the rest of the region. A combined GWRA budget that allows substitution of import reductions for failure to achieve required in-state emissions only amplifies any such errors by significantly underestimating the real emissions associated with imports. For these reasons, in particular, the netting approach must be replaced with an approach that accurately measures the cumulative total annual GHG emissions emitted by power plants outside the state in generating electricity that is consumed in the state, with no netting.

Even with such an accurate measurement approach, the GWRA's reduction requirements for electricity imports and for instate sources should be kept separate, and import-based emission reductions should only be allowed to be used for GWRA compliance by sources in other sectors within the state, and then only if specific, effective measures to prevent the "waterbed effect" and related unintended, offsetting emission reductions to occur are taken. Consistent with these recommendations, several other practices and policy views from the past need to be avoided for the GWRA's required emission reductions to be measured accurately and actually achieved. Specifically, the following views and beliefs do not comport with how

[4] See fn 1. above.

the electric grid really works, and are likely to lead to "false compliance" problems under the GWRA and other state and regional carbon regulations:

1. *Actual emissions to the atmosphere from MWH generated in other states but consumed in New Jersey are offset or reduced by electricity flowing in the other direction*. This is not always or even generally true. Any outflows of electricity from New Jersey may have very different and wide-ranging impacts on GHG emissions in other states, depending on the actual generation that is displaced during the specific dispatch intervals that include such outflows. Simply assuming each outflow of MWH from New Jersey somehow cancels out the GHG emissions from any other MWH of inflow into the state is certain to ignore some, and perhaps all of the GHG emissions entering the atmosphere associated with imports.

2. *New Jersey can and should reduce GHGs from imports by reducing imports and generating all of its electricity locally.* As the state's recent Integrated Energy Plan shows, even keeping imports at their current levels by building no new transmission will result in a much higher cost pathway to deep emission reductions that will increased imports. High cost approaches are less likely to succeed, and thus are less likely to achieve the emission reductions required by either the GWRA or climate science.

3. *New Jersey can selectively import only clean energy MWH, and thus can over-comply with the GWRA's import requirements and use the surplus to allow more emissions from difficult to control sectors.* This is a misunderstanding at best, or a myth at worst. In reality, there is no way to screen out fossil-generated MWH or select only renewable energy MWH for imports, and any attempt to do so is likely to encounter the same accuracy, double counting, and GWRA budget inflation problems as the current approach. It may be possible in the future to create clean electricity credits that accurately identify the GHG emission reductions created in each dispatch interval by each clean energy resource, but even counting such accurately generated credits against or across overall emission caps would create the waterbed effect and other related problems that would end up in double counting and "false compliance" with the GWRA.

Any such budget inflation and overall increase in GHGs due to errors in the DEP's approach to measuring, counting and applying emission reductions under the GWRA would be particularly problematic in light of the IPCC's recent call for even greater emission reductions than those currently called for by the GWRA. Any such errors, particularly any that can be avoided simply by updating outdated and erroneous methodologies and avoiding counting fictional emission reductions against the GWRA budget, would be a serious step in the opposite direction of the one called for by the latest climate science.

Advancing DEP Transparency in New Jersey

The DEP has done well to provide open and timely disclosure with all stakeholders and maintain regular communication to keep stakeholders informed. However, there is an opportunity for the DEP to further promote transparency and stakeholder engagement by making stakeholder comments publicly available on the agency's website (or other government medium) in a timely manner, and well before submitting a proposed rule at the end of 2020.