



Institute for
Policy Integrity

NEW YORK UNIVERSITY SCHOOL OF LAW

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Andrew McKeon, Executive Director
RGGI, Inc.
90 Church Street, 4th Floor
New York, NY 10007
Regional Greenhouse Gas Initiative

VIA ELECTRONIC SUBMISSION

Subject: Comments on New Jersey's proposal to join the Regional Greenhouse Gas Initiative

Dear Executive Director McKeon and Members of the RGGI Board,

The Institute for Policy Integrity at New York University School of Law¹ ("Policy Integrity") respectfully submits the following comments on New Jersey's proposal to join the Regional Greenhouse Gas Initiative ("RGGI").² Policy Integrity is a non-partisan think tank dedicated to improving the quality of government decisionmaking through advocacy and scholarship in the fields of administrative law, economics, and public policy. Policy Integrity regularly conducts economic and legal analysis on the pricing of greenhouse gas emissions, among other environmental, energy, and economic topics.

Including New Jersey energy producers in RGGI will expand the scope of the market, improving market efficiency, increasing competitiveness, and lowering carbon abatement costs. In order to ensure that the New Jersey Carbon Dioxide Trading Program also decreases emissions, RGGI should encourage New Jersey to set the level of its conditional allowances lower than its emissions expected without the RGGI expansion.

Introduction

By joining RGGI in 2020, New Jersey will take an important step toward internalizing the environmental externalities caused by fossil-fuel-based electricity generation. New Jersey will also expand the scope and market size of RGGI, helping to improve market

¹ No part of this document purports to present New York University School of Law's views, if any.

² New Jersey Carbon Dioxide Trading Program, 50 N.J.R. 2482(a) (Dec. 17, 2018)

competitiveness and trading efficiency. Joining RGGI will likely also reduce the cost of carbon dioxide (CO₂) abatement by allowing the marginal cost of abatement to equilibrate across a larger set of emitters. A lower marginal cost of abatement will help RGGI states meet carbon emission reduction goals more cost effectively.

The cap level that New Jersey chooses will affect the aggregate emissions from RGGI states, the compliance costs for polluters in other states, and the revenue that other states receive from auctions. Therefore, while the expansion of RGGI is a positive development, New Jersey's proposed cap warrants careful attention to ensure that the highest possible welfare gains are achieved.

RGGI should carefully assess the effect that New Jersey's initial allowance level will have on the RGGI cap

When New Jersey joins RGGI, the total emissions regulated by RGGI will rise by almost 30% as compared to a baseline scenario in which no new states join the market.³ Thus, the choice of New Jersey's emission cap will substantially affect the total number of allowances available at each auction and will thus have a large effect on the stringency of the RGGI cap. Changing the stringency of the RGGI cap will, in turn, affect future allowance prices, the compliance costs for budget units in the remaining RGGI states, and the auction revenue gathered by other RGGI states.

A new state joining RGGI could either increase or decrease the stringency of the total emission cap in comparison with the RGGI cap without the enlargement.⁴ These comments, however, focus on a loosening of the cap. As explained below, this case seems more likely given the emission budget that New Jersey has proposed. Additionally, because of limits on the price of RGGI allowances, a less stringent cap would result in less social welfare when compared to a tighter cap. If New Jersey's total number of allowances was to be set ambitiously low, then RGGI permit prices would increase, possibly even hitting the price ceiling. This would not constitute an inefficiency from a social point of view. In 2020 the Social Cost of Carbon will be \$49 in current dollars.⁵ Therefore, even if generators paid the

³ This follows from comparison of the New Jersey's proposed base budget of 18 million tons of CO₂ allowances to RGGI's total carbon budget for 2020. See New Jersey Carbon Dioxide Trading Program, *supra* note 2, at 175; see also Regional Greenhouse Gas Initiative, 2016 Program Review: Principles to Accompany Model Rule Amendments, available at https://www.rggi.org/sites/default/files/Uploads/Program-Review/12-19-2017/Principles_Accompanying_Model_Rule.pdf.

⁴ The stringency of the cap is understood here as percentage of emissions that would be produced in a given year if RGGI suddenly ceases to exist but that need to be abated when RGGI is in place (disregarding the impact of permits banking).

⁵ INTERAGENCY WORKING GRP. ON SOC. COST OF GREENHOUSE GASES, TECHNICAL SUPPORT DOCUMENT: TECHNICAL UPDATE OF THE SOCIAL COST OF CARBON FOR REGULATORY IMPACT ANALYSIS UNDER EXECUTIVE ORDER 12,866 at 4 (2016) [hereinafter TSD 2016], available at https://www.obamawhitehouse.gov/sites/default/files/omb/inforeg/scc_tsd_final_clean_8_26_16.pdf. ; INTERAGENCY WORKING GROUP ON SOCIAL COST OF GREENHOUSE GASES, UNITED STATES GOVERNMENT, ADDENDUM TO TECHNICAL SUPPORT DOCUMENT ON SOCIAL COST OF CARBON FOR REGULATORY IMPACT ANALYSIS UNDER EXECUTIVE ORDER 12866: APPLICATION OF THE METHODOLOGY TO ESTIMATE THE SOCIAL COST OF METHANE AND THE SOCIAL COST OF NITROUS OXIDE (2016) [hereinafter "TSD 2016 Addendum"].

full Cost Containment Reserve (“CCR”) Trigger Price, which in 2020 will be equal to \$10.77,⁶ the permit price would still be too low to fully internalize the externality associated with CO₂ emissions. By the same token, depressing the allowance price will lower social welfare.

If New Jersey chooses to issue allowances for more emissions than its generators would emit under a business-as-usual scenario (“counterfactual emission level”), this will loosen the emission cap for the whole RGGI area.⁷ Unless allowance prices are at the price floor, the price will go down causing aggregate emissions to increase relative to a scenario in which New Jersey does not join RGGI.⁸ A decline in the permit price will also decrease the revenue that other states receive from RGGI auctions. The magnitude of those adjustments will depend on the magnitude of the change in RGGI’s cap.

Consequently, in order to ensure that total emissions decrease relative to a business-as-usual scenario, the number of permits issued in New Jersey should be set below New Jersey’s counterfactual emission level.⁹

A recent study commissioned by the New Jersey Board of Public Utilities and featured on New Jersey Department of Environmental Protection (“NJDEP”) website on the proposal for the state to rejoin RGGI (“Proposal Study”), compares the business-as-usual emissions scenario with the proposal scenario.¹⁰ The Proposal Study found that the proposed cap of 18 million allowances for year 2020 almost coincides with the 18.25 million tons of emissions expected to occur in that time under the business-as usual scenario.¹¹ If the

available at

https://www.obamawhitehouse.gov/sites/default/files/omb/inforeg/august_2016_sc_ch4_sc_n2o_addendum_final_8_26_16.pdf at 16. Prices have been updated to 2016 dollars using the Consumer Price Index.

⁶ Proposed Regulation, Regulation for Emissions Trading Programs, *supra* note 2, Table 1 at 134.

⁷ As New Jersey issues more permits than its generators would use in the absence of any regulation, the demand for permits in New Jersey will be less than the number of allowances. Consequently, “surplus” permits, in the amount equal to the difference between the New Jersey cap and New Jersey’s emissions under a business-as-usual scenario, will contribute to a loosening the general RGGI cap.

⁸ This follows from laws of supply and demand—as permits’ supply increases, their price will drop. See, e.g. PAUL KRUGMAN & ROBIN WELLS, MICROECONOMICS (Second ed. 2009), chapter 3.

⁹ It is worth noting that the allowance price will decrease slightly even if New Jersey sets the cap exactly equal to its counterfactual 2020 emissions or just below them. This effect operates through two channels. First, cheap pollution abatement measures that have already been implemented in the other RGGI states may still be available to New Jersey’s electricity generators. Second, if the current RGGI cap is more restrictive for generators (“more binding”) than the cap chosen by New Jersey, the total effective cap will be less stringent than without New Jersey joining the system. For example, if in 2020 New Jersey issues permits covering 100% of its emissions but other RGGI states auction off permits worth 97% of the counterfactual emissions, the total system would have permits equal to roughly $97*0.7 + 100*0.3 = 97.9$ percent of emissions. However, any price decline caused by these channels will not be accompanied by an increase in total emissions compared to the scenario without New Jersey’s entry. Therefore, a falling permit price alone is not necessarily a sign that RGGI’s expansion will increase CO₂ emissions relative to a business-as-usual scenario.

¹⁰ The Proposal Study was prepared by ICF for Rutgers University at the request of New Jersey Board of Public Utilities. See <https://www.state.nj.us/dep/aqes/rGGI.html#/>

¹¹ See the tab “Emissions” in [*CO₂ Budget Trading Reference Case Modeling Results*](#), STATE OF NJ, DEP’T OF ENVTL. PROT.: REG’L GREENHOUSE GAS INITIATIVE, available at https://www.state.nj.us/dep/aqes/docs/NJ_Reference_Case_IPM_Model.xlsx

findings of the study are correct, New Jersey joining RGGI would result in a minor emission cut a probable decrease in the stringency of the total RGGI cap and a decline in the revenue of other participating states.¹²

Clearly, the correctness of the above conclusions hinges on the correctness of the study's counterfactual emissions estimates. Reliably predicting a future emissions path is challenging given the uncertainties associated with developments in the energy markets. Should the numbers included in the Proposal Study and published by NJDEP underestimate business-as-usual emissions, New Jersey's entry into RGGI could increase the stringency of the RGGI cap.

That said, the counterfactual emissions presented in the Proposal Study appear more likely to be too high than too low. First, the 2018 counterfactual emissions used in the modeling are 1.5 million tons higher than the actual 2018 New Jersey emissions reported by EPA.¹³ Given that overestimate for the initial year of modeling, it is highly probable that emissions in all the subsequent years are also substantially overstated. Second, the study reports no response of resource entry and exit to RGGI participation. This is surprising as, even with allowance prices at the levels estimated in the study, there should be some merit-order effects between coal and natural gas power plants, accelerating the retirement of coal.¹⁴ The timing of solar capacity additions is also identical under the study's RGGI and reference scenarios, despite the increase in revenue for solar generators owing to increased market prices.¹⁵ This raises the suspicion that the modeling used is not flexible enough to represent investment decisions and thus misrepresents the future fleet, biasing it towards the dirty *status quo* generation mix.

Intuitively, New Jersey's emissions are bound to fall substantially, even in the absence of a cap imposed by RGGI. Legislation signed in 2018 imposes energy-efficiency and energy-storage requirements and calls for a renewable portfolio standard of 50% by 2030, with

¹² While, to the best of our knowledge, the stringency of the RGGI cap under the participation of nine states has not been measured, one should expect it to be substantially higher than that of New Jersey's proposal given that currently RGGI's cap declines annually by 2.5 percent. Establishing the stringency of the RGGI 2020 cap would require calculating by how much the 2020 emissions would exceed the cap if RGGI suddenly ceased to exist at the end of year 2019.

¹³ Compare 20.54 million tons presented in the row "NJ" in column "2018" in Table "Total CO₂ emissions" in *CO₂ Budget Trading Reference Case Modeling Results* *supra* note 11 with EPA's Continuous Emissions Monitoring System report of 19.01 million tons of New Jersey's 2018 emissions at <https://ampd.epa.gov/ampd/>.

¹⁴ In the study, the modeled allowance prices increase up to \$5.36 per ton in 2017\$, see Table "RGGI Compliance" in *CO₂ Budget Trading Policy Modeling Results*, STATE OF N.J. DEP'T OF ENVT'L PROT.: REC'L GREENHOUSE GAS INITIATIVE, https://www.state.nj.us/dep/ajes/docs/NJ_Policy_Case_IPM_Model.xlsx. The emission rate for an average coal power plant equals 960 kg CO₂/MWh which is equivalent to 1.07 short tons/MWh, implying that according to the study, a coal power plant would need to pay \$5.02/MWh for emissions while facing energy market prices of \$31.7/MWh. See Table 3 in Environment Baseline, Volume 1: Greenhouse Gas Emissions from the U.S. Power Sector, Office of Energy Policy and Systems Analysis U.S. Department of Energy, June 2016 at 18.

¹⁵ Compare tables "Cumulative Capacity Added - New Jersey", tab "Capacity addition", in *CO₂ Budget Trading Policy Modeling Result*, *supra* note 14 and *CO₂ Budget Trading Reference Case Modeling Results*, *supra* note 11.

the ultimate goal of powering the state entirely with renewable resources by 2050.¹⁶ Even partial achievement of these goals would almost certainly displace some of New Jersey's natural gas resources—which make up almost 50% of New Jersey's current energy supply—and, in turn, decrease the state's emissions. That effect, coupled with current emissions of 19 million tons and a predicted decrease in New Jersey's electricity demand, suggests that it is unlikely that the state will produce 18 million tons of CO₂ emissions in 2020.

This skepticism of the Proposal Study counterfactual emission estimates is further supported by a 2018 modeling effort conducted by the Natural Resources Defense Council ("NRDC") using S&P Global Market Intelligence power forecasts. The NRDC study forecasts New Jersey's business-as-usual emissions in 2020 to be below 13 million tons.¹⁷ While the difference in emissions presented by NRDC and New Jersey is difficult to explain without knowing the exact assumptions underlying the two models, the sheer size of the gap suggests that the Proposal Study might have ignored some of the trends that drive emissions down.

RGGI should carefully assess the effect that New Jersey's allowance path will have on the total emissions

RGGI should also consider that, even if New Jersey's initial allowance levels are below business-as-usual emissions, they might not remain so in future years. Given the renewable and efficiency goals that the state is pursuing, the state's generation fleet can be expected to become less carbon-intensive every year, even in the absence of RGGI trading. In some years, that counterfactual fleet cleaning would take very large leaps. Consequently, New Jersey's RGGI cap could end up higher than business-as-usual emissions. Indeed, even the Proposal Study results suggest that the 2030 cap (set at 12.6 million tons) exceeds business-as-usual emissions (calculated in the study to be 11.98 million tons), implying that New Jersey's participation in RGGI would actually increase global 2030 emissions.¹⁸ And because the Proposal Study likely overestimates counterfactual emission levels, as discussed above, it likely underestimates the extent to which New Jersey's participation in RGGI could increase global emissions in 2030.

¹⁶ N.J.P.L.2018, c.17 (New Jersey AB 3723 introduced Mar. 22, 2018).

¹⁷ See Natural Resources Defense Council et al., Letter to New Jersey Department of Environmental Protection Commissioner Catherine McCabe and New Jersey Board of Public Utilities President Joseph Fiordaliso, *RE: Ensuring New Jersey's Re-Entry into RGGI Includes a 2020 Carbon Cap Level That Maintains the Program's Environmental Integrity*, 5 June 2018.

¹⁸ The annual base budget for allocation years 2020-2030 is presented in New Jersey Carbon Dioxide Trading Program, *supra* note 2, at 175-176. For predicted business-as-usual emissions see the tab "Emissions" in *CO₂ Budget Trading Reference Case Modeling Results*, *supra* note 11.

Therefore, to ensure that New Jersey's participation in RGGI will reduce CO₂ emissions in every future period, New Jersey's cap should be set below the best available estimate of the state's counterfactual emissions for every year in which it participates in RGGI.

In general, by keeping its 2018 emission budget high, New Jersey increases its allowance revenue at the expense of other participating states. It also dilutes RGGI's emission-reduction potential. Finally, because RGGI permit prices are already close to the reserve price, New Jersey's entry into RGGI with a loose state cap would increase the probability of the Emissions Containment Reserve (ECR) becoming operative.¹⁹ In accordance with ECR regulations, states can withhold up to 10 percent of the allowances in their base annual budgets in order to ensure additional emission reductions if prices fall below the specified trigger prices.²⁰ Because Maine and New Hampshire do not intend to implement the ECR and will thus not withhold allowances when the trigger price is reached,²¹ this will create further redistributive effects between the states.²²

Given its potential impacts on both permit prices and aggregate emissions from RGGI states, New Jersey's choice of the emission budget path must have a sound justification. RGGI states need to be aware of those potential impacts and be prepared to adjust the ECR withholdings process should New Jersey's cap have a substantial negative impact on permit prices.

Respectfully submitted,

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¹⁹ The most recent RGGI permit auction settled at \$5.35. See, Regional Greenhouse Gas Initiative, *Auction 42*, (Dec, 2018), <https://rggi.org/auction/42>.

²⁰ Regional Greenhouse Gas Initiative, 2017 Model Rule, available at https://www.rggi.org/sites/default/files/Uploads/Program-Review/12-19-2017/Model_Rule_2017_12_19.pdf

²¹ Regional Greenhouse Gas Initiative, 2016 Program Review: Principles to Accompany Model Rule Amendments, *supra* note 3.

²² Assuming that all other states participate in the ECR symmetrically, Maine and New Hampshire will increase their share of total permit revenues.