

**COMMENTS OF THE JAMESTOWN BOARD OF PUBLIC UTILITIES
ON THE NYSERDA DRAFT OPERATING PLAN FOR INVESTMENTS IN NEW
YORK UNDER THE CO₂ BUDGET TRADING PROGRAM AND THE CO₂
ALLOWANCE AUCTION PROGRAM
(March 23, 2009)**

The Jamestown Board of Public Utilities (BPU or Jamestown BPU) appreciates this opportunity to provide comments on the New York State Energy Research and Development Authority's (NYSERDA) *Draft Operating Plan for Investments in New York under the CO₂ Budget Trading Program and the CO₂ Allowance Auction Program* (Draft Plan). The BPU supports NYSERDA's efforts to provide a structured and broad-based approach to carbon reductions that reaches across multiple industry sectors to achieve greenhouse gas (GHG) reductions. The BPU also commends NYSERDA for including carbon capture and sequestration (CCS) as one of the innovative carbon control technologies that qualify for RGGI funding.

The Draft Plan, however, fails to adequately address the essential role CCS plays in carbon reductions. CCS is recognized as the critical enabling technology necessary to achieve significant (50-80%) GHG reductions. In the absence of CCS, current models indicate that only stabilization or minor reductions of carbon dioxide emissions can be achieved nationally. Despite this, the Draft Plan provides virtually no funding for CCS. The Draft Plan allocates less than 3% of the total RGGI funding for CCS, or \$15 million out of \$525 million dollars in the first three years of funding. The Draft Plan's failure to adequately fund CCS runs the risk of significantly undermining New York's carbon reduction goals. Because the Draft Plan fails to adequately fund CCS, the Plan produces only 370,000 tons of carbon reductions annually, a reduction of approximately one tenth of one percent of New York's annual GHG emissions.

CCS is also an essential part of a strategy for cost-effective carbon reductions. The Draft Plan proposes that New York achieve approximately 370,000 tons of CO₂ reductions annually at a cost of \$525 million over a three year period. The cost per ton of CO₂ reduction under the Draft Plan is \$477/ton over a three year period. The life of measure costs are \$71/ton on average and \$284/ton for power supply measures.¹ CCS can achieve carbon reductions at a significantly lower cost. Estimates of generic CCS plant costs suggest that similar carbon reductions could be achieved by a coal CCS plant at 10% or less of the costs of the three year Draft Plan and significantly less than the power supply life of measure cost.

If New York is to achieve significant, sustained, and reasonably priced CO₂ reductions, CCS must receive substantially higher priority in the allocation of funding. The BPU recognizes that NYSERDA has a difficult task in balancing the short-term and long-term CO₂ reduction goals related to investing the RGGI proceeds, and the BPU applauds NYSERDA for its dedicated effort to find the appropriate balance. Nevertheless, the Draft Plan's failure to adequately fund CCS risks losing the benefits of short-term CO₂ reductions by failing to adequately ensure long-term CO₂ reductions through technologies such as CCS that are capable of meeting the long-term challenge of climate change.

BPU Background

The Jamestown Board of Public Utilities is a community-owned utility that has been providing electric service to the City of Jamestown and the surrounding area for more than one hundred years. The power the BPU provides its customers has

¹ The cost-benefit analysis is based on the Draft Plan and NYSERDA's March 6, 2009 Presentation. Further specifics of the analysis are provided below.

one of the lowest carbon emission rates in New York. Over 80% of the BPU's power comes from carbon-free hydroelectric energy. The BPU also self-generates part of its power. Jamestown owns and operates the Samuel Carlson Generating Station, which includes four small coal-fired boilers and a gas turbine.

The Jamestown BPU is proposing to replace its existing coal facilities with an advanced CCS plant. The oxy-coal technology proposed for use in the Jamestown Project has the potential for carbon capture rates greater than 90% and near zero emissions of criteria pollutants and mercury that would be lower than those expected from either Integrated Gasification (IGCC) or Natural Gas Combined Cycle projects. The proposed Jamestown Project would be the first of its kind in the world and could serve as the international model for future energy development. The Jamestown Project could become operational in 2013, providing a model for substantial and immediate carbon reductions for fossil-fuel plants.

The successful development of the Jamestown Project can also provide significant, sustainable economic growth for the Western New York region. Several Western New York companies are well positioned to benefit from the developing oxy-coal global market and the carbon sequestration initiatives that would be showcased in the Jamestown Project. Economic forecasts indicate that the global demand for oxygen supply systems, CCS and compressors, will generate \$900 million in annual economic impact and 3,500 new jobs in future years (2012-2020) throughout New York State. Direct annual spending could potentially total \$573 million annually. Initially, the Jamestown base project will create 300 construction jobs and generate \$29 million in short-term economic impact for the Western New York region; additional, significant

short-term benefits will result if the oxy-coal combustion components are added to the base project as planned.

Comments

The Draft Plan Fails to Adequately Recognize the Critical Role Carbon Capture and Sequestration Plays in Achieving Significant Carbon Reductions

Because of the abundance and widespread use of fossil-fuel plants for power generation, CCS is the critical enabling technology for substantial carbon emission reductions. In this respect, CCS merits a separate, strategic consideration in reducing CO₂ emissions that other technologies—as important as they are in achieving short-term CO₂ reductions—cannot claim. Conversely, carbon abatement strategies that neglect CCS run the risk of undermining any overall CO₂ reduction strategy.

The Massachusetts Institute of Technology (MIT), in its seminal report *The Future of Coal*, explained that CCS is essential to significant carbon reductions. The MIT Report stated that:

We conclude that CO₂ capture and sequestration (CCS) is the critical enabling technology that would reduce CO₂ emissions significantly . . .

Future of Coal, MIT, Executive Summary at x (emphasis supplied).

Similarly, the Electric Power Research Institute (EPRI), an independent, non-profit research organization studying the generation, delivery and use of electricity has concluded that CCS is essential to reducing GHG emissions. EPRI has stated:

Of the seven options we analyzed [efficiency, renewables, nuclear generation, advanced coal generation, carbon capture and sequestration, plug-in hybrid electric vehicles, and distributed energy resources], our work showed that the greatest reductions

in future U.S. electric sector CO₂ emissions are likely to come from applying CCS technologies to nearly all new coal-based power plants The key to proving CCS capability is the demonstration of CCS This will require a sustained RD&D program at heightened levels of investment [and we] must start immediately . . .

Dr. Steven Specker, EPRI CEO, July 10, 2008, Written Testimony before Subcommittee on Energy and Air Quality, U.S. House of Representatives at p. 3 (emphasis supplied).²

See also Bryan Hannegan, EPRI Vice President, Generation and Environment (“EPRI’s analyses have shown carbon capture and storage will be an essential part of the solution if we are to achieve meaningful CO₂ emissions reductions at a cost that can be accommodated by our economy”).³

Nationally, 80% of electricity is generated from fossil-fuels plants and growth of fossil-fuel plants, particularly coal plants, has been increasing nationally and internationally. Fossil-fuel electric generating units represent approximately 64% of New York’s installed energy capacity,⁴ and the largest increase in projected fossil fuel use in New York is expected to be for power generation.⁵ The MIT study concluded that fossil fuels, and in particular coal, will remain an important source of electricity generation in foreseeable future energy scenarios.⁶ Recent analysis as presented to NYSERDA concluded that on a national basis, the majority of carbon reductions will come from coal plants. *See* Appendix A.

² Dr. Steven Specker, written testimony, *available at* http://energycommerce.house.gov/cmte_mtgs/110-eaq-hrg.071008.Specker-testimony.pdf.

³ EPRI Press Release, Jan. 27, 2009, *Available at*: http://my.epri.com/portal/server.pt/gateway/PTARGS_0_2_317_205_776_43/http%3B/uspalecp604%3B7087/publishedcontent/publish/epri_to_study_adding_carbon_capture_to_existing_coal_power_plants_da_626651.html

⁴ NYSERDA, 2003 State Energy Plan - Annual Update Memorandum, at 3 (Dec. 2003) *available at* http://www.nyserda.org/Energy_Information/2003sep_annual_report.pdf

⁵ NY State Energy Plan at 3-173 (2002).

⁶ *See, e.g.*, The Future of Coal, MIT (2007) at Forward, vii.

The worldwide impacts of coal plants on carbon emissions are even more significant. Projections indicate that coal emissions world-wide, particularly internationally and in developing countries, will increase significantly over time. Globally, the most significant increase in carbon emissions is likely to come from new coal plants, particularly in developing countries. The Intergovernmental Panel on Climate Change estimates that as much as three quarters of the projected increase in energy-related carbon dioxide emitted between now and 2030 will occur in developing economies. Coal-based carbon emissions from developing countries are estimated to triple from 4.2 billion metric tons in 1990 to 12.2 metric tons in 2030.⁷ China's coal-related carbon dioxide emissions alone are projected to grow from **3.8 billion** tons in 2004 to **8.8 billion tons** in 2030.⁸ Put another way, China is building two new 500 MW coal plants each week, a capacity comparable to the entire United Kingdom power grid each year. Each of these new plants emits three million tons of carbon dioxide.

A CCS demonstration plant in New York has the potential to not only reduce New York carbon emissions, but also to significantly reduce domestic and international carbon emissions by providing a model for future energy development. Further, a demonstration project could also be utilized to provide a model for more stringent standards for CO₂ removal from coal plants than is currently being funded by the Department of Energy. A demonstration CCS project offers unique opportunities for a state-federal partnership on CCS that could be utilized not only to provide cost-effective CO₂ reductions, but also to provide economic development in Upstate New York.

⁷ The Future of Coal, MIT (2007) at 7, citing *International Energy Outlook 2006*, DOE, EIA.
⁸ *Id.*

Despite the recognized importance of CCS and the economic and environmental value of a CCS Demonstration Plant in New York, the Draft Plan allocates less than 3% of RGGI auction revenues to CCS or fossil fuel plants generally. In other words, only \$15 million out of \$525 million of three year funding is allocated to CCS.

The critical impacts of CCS on carbon reductions should be considered in evaluating investments from the RGGI program, and substantially more priority should be given to CCS. In the absence of adequate funding for CCS, New York runs the risk of spending large amounts of money to achieve virtually no carbon reductions. The Draft Plan, which underfunds CCS, illustrates this problem: the Draft Plan spends over half a billion dollars to produce slightly more than one tenth of one per cent of a reduction in New York's annual carbon emissions. In order to increase cost-effective carbon reductions, substantially more funding should be provided to CCS.

A CCS Demonstration Project Would Provide Significantly Larger and More Cost-Effective Carbon Reductions Than the Measures Proposed by the Operating Plan

The BPU commends NYSERDA for proposing to invest the proceeds from the RGGI auction based on a cost-effectiveness evaluation, namely, based on the cost of CO₂ reduction per dollar invested of RGGI proceeds.⁹ The Draft Plan provides an analysis of the cost-per-ton of CO₂ reduced for several potential investments of RGGI proceeds.¹⁰

⁹ See, e.g., NYSERDA Presentation, "Investing New York's RGGI Auction Proceeds," presented by John Williams, at 4 (Jan. 14, 2009).

¹⁰ See, e.g., Draft Plan at pp 15, 18, 23, 29, 32, and 38.

The Draft Plan states that New York will achieve 1.1 million tons of CO₂ reductions over a three years period at a cost of \$525 million.¹¹ Dividing \$525 million by 1.1 million tons of CO₂ yields a result of approximately \$477/ton CO₂ reduced. The Draft Plan also indicates that extrapolating these results, the measures will achieve lifetime reductions of approximately 7.3 million tons of CO₂.¹² Dividing \$525 million by the lifetime reductions of 7.3 million tons of CO₂ yields a result of approximately \$71/ton CO₂ reduced over the lifetime of the measures.

The programs identified for funding in the Draft Plan display a wide range of cost-effectiveness, ranging from an estimated \$28 per lifetime ton of CO₂ reduced for certain commercial and industrial efficiency programs, to \$284 per lifetime ton of CO₂ for a statewide photovoltaic program.¹³ The only power supply alternative that a cost-benefit analysis is done for is the photovoltaic program, the highest cost in the program (\$284 per lifecycle ton of CO₂ reduced).

The Draft Plan, however, fails to calculate the cost-per-ton of CO₂ reduced for CCS and provide a comparison to the other measures. Estimates of generic CCS plant costs suggest that carbon reductions could be achieved by a coal CCS plant at significantly lower costs, e.g., costs in the range of 10% of the three year Draft Plan costs, and significantly less than the life of measure costs for power supply alternatives.

The BPU recognizes that NYSERDA has a difficult task in balancing the short-term and long-term CO₂ reduction goals related to investing the RGGI proceeds, and the BPU applauds NYSERDA for its dedicated effort to find the appropriate balance. Nevertheless, as currently proposed in the Draft Plan, the BPU is concerned that

¹¹ Draft Plan at pp ES-2, ES-10.

¹² Draft Plan at p ES-10.

¹³ *See, e.g.*, Draft Plan at pp 15 and 38.

NYSERDA fails to adequately address the benefits of CCS. Further, in the long-term, the Draft Plan risks losing the benefits of short-term CO₂ reductions by failing to adequately ensure long-term CO₂ reductions through technologies that are capable of “scaling” to meet the challenge of climate change. CCS is an application that can be done in the short-term on a cost-effective basis and can scale to ensure the sustained benefit of CO₂ reduction. The cost-effectiveness of CCS, along with its unique strategic importance to achieve sustained CO₂ reduction as described above, merit higher priority in RGGI auction funding.

Further Specifics Should Be Provided Regarding NYSERDA’s Technical Analysis

The BPU appreciates NYSERDA providing a cost-effectiveness evaluation of the Draft Plan, and identifying the cost of CO₂ reduction per dollar invested of RGGI proceeds. The BPU requests that additional technical information be provided in order to facilitate a more complete understanding of these costs and a comparison to other control measure costs. Technical information needed for a more complete analysis includes: (1) assumptions about the level of NYSERDA funding required to incentivize measures; (2) comparative CO₂ reductions attributed to the RGGI programs versus other funding programs, including the SBC, RPS and Federal Stimulus funding; and (3) assumptions about the life of control measures generically, and photovoltaics specifically.

NYSERDA Should Track the Geographic Distribution of Benefits Within New York

The BPU requests that NYSERDA track the geographic impacts of its investment strategy within New York. The majority of RGGI auction proceeds will be

collected from the fossil-fuel plants in Upstate New York.¹⁴ The NYSERDA investment criteria do not appear to allow for consideration of the geographic distribution of benefits within New York or tracking of benefits within the State. Many of the criteria suggest, however, that substantial investments from the RGGI auction proceeds could be made Downstate. However unintentional, the RGGI auction revenues should not be utilized as another way to redistribute significant revenues from Upstate to Downstate. The BPU encourages NYSERDA to track geographic distribution of the RGGI auction revenue benefits.

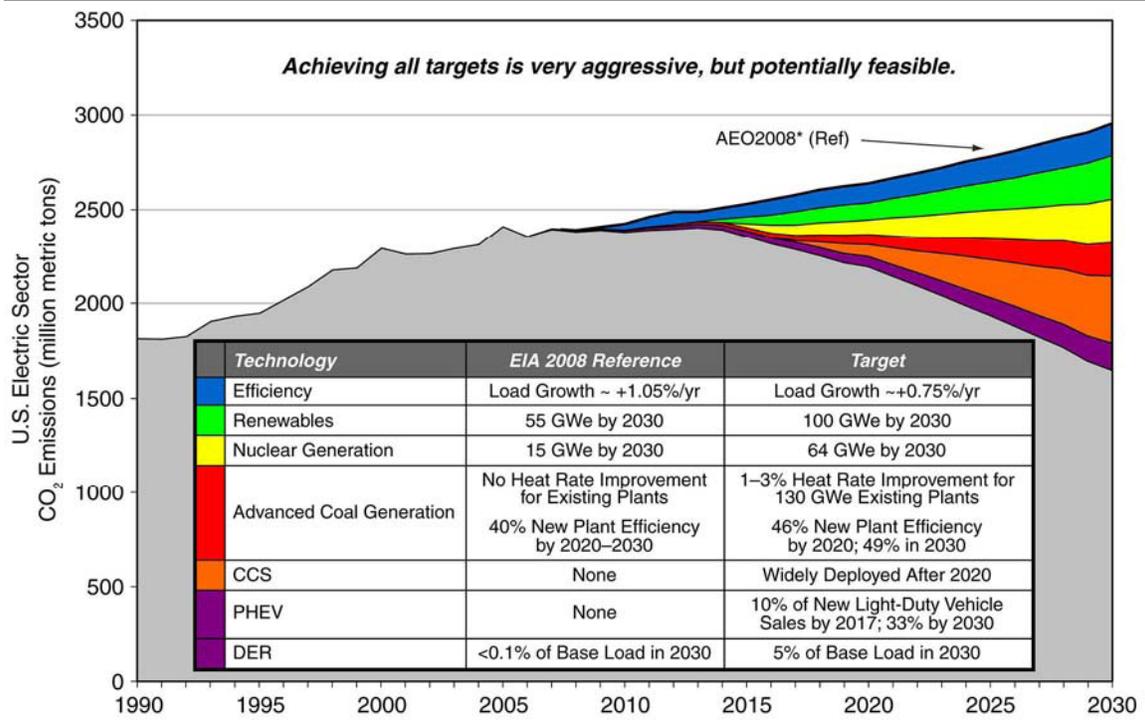
The Jamestown Board of Public Utilities is pleased to have this opportunity to participate in NYSERDA's development of an Operating Plan for investments associated with the Regional Greenhouse Gas Initiative auction proceeds. The BPU encourages NYSERDA to allocate RGGI funds for CCS commensurate with the critical role CCS plays in significant and cost-effective GHG reductions. The BPU looks forward to continuing to work with NYSERDA on this important plan.

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¹⁴ See, e.g., *Emissions & Generation Resource Integrated Database*, prepared for U.S. Environmental Protection Agency (September 2008).

APPENDIX A – EPRI POTENTIAL FOR DECARBONIZING THE U.S. ELECTRIC SECTOR - THE FULL PORTFOLIO



Source: EPRI Report 1018431, “The Power to Reduce CO2 Emissions: the Full Portfolio: 2008 Economic Sensitivity Studies,” at 1-2 (Dec. 2008).