

Pace Energy and Climate Center



PACE LAW SCHOOL
P A C E U N I V E R S I T Y

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VIA EMAIL - rggiprograms@nyserderda.org

New York State Energy Research and Development Authority
17 Columbia Circle
Albany, NY 12203-6399

Re: Comments on RGGI Draft Operating Plan

On February 25, 2009, the New York State Energy Research and Development Authority (NYSERDA) issued for comment its draft Operating Plan,¹ which summarizes and describes the initiatives to be supported with the proceeds from the auction of carbon allowances under the Northeast Regional Greenhouse Gas Initiative (RGGI). At a meeting of the RGGI Advisory Group on March 6, 2009, NYSEDA solicited comments from members of the Advisory Group and the public on the draft Operating Plan. The Pace Energy and Climate Center (Pace) is represented on the Advisory Group, and had an opportunity to present some preliminary comments at the March 6 meeting. We appreciate the opportunity to serve on the RGGI Advisory Group to offer our views and insights on these issues, and we offer the following additional written comments with respect to the draft Operating Plan.

Overview

Pace offers the following general comments regarding the draft Operating Plan:

- ***RGGI auction revenues should be spent on programs that maximize impact.*** The draft Operating Plan proposes to invest auction proceeds across twenty programs. There is some risk that the impact of RGGI funding may be diluted if it is spread too broadly across too many programs. In the case of each proposed program, we urge NYSEDA to consider what impact the RGGI auction proceeds will have on the success of the program. In other words, will the additional spending make a difference in achieving meaningful reductions in CO₂ emissions? In some cases, the additional revenue from RGGI auction proceeds may be very small compared with the overall cost of the program, and it is difficult to measure any incremental impact of the expenditure. As discussed below, this may be the case with respect to the \$15 million proposed to be allocated to coal sequestration, given the hundreds of millions of dollars that will be necessary to fund a demonstration project. The same \$15 million that gets lost in the rounding of a \$3.4 billion commitment to coal sequestration in the American Recovery and Reinvestment Act (ARRA) could have far greater impact if spent on smaller

¹ "Operating Plan for Investments in New York under the CO₂ Budget Trading Program and the CO₂ Allowance Auction Program."

programs with more direct impact on improving the environmental quality for average New Yorkers.

- ***RGGI auction revenues should be allocated in a manner that fills gaps in existing New York State programs.*** The draft Operating Plan states that the proposed programs “are designed to fill critical gaps by targeting fuels not adequately addressed through System Benefits Charge, Energy Efficiency Portfolio Standard, and Renewable Portfolio Standard activities.”² Pace strongly supports this design objective. The addition of the revenue stream from RGGI auction proceeds provides an excellent opportunity for NYSERDA to provide funding for initiatives that cannot be reached under existing programs. A good example are programs that target conversion of heavy fuel oil boilers in multifamily situations, such as the *Multifamily Performance Program*,³ which are not funded by SBC or EEPS activities given the focus of these revenue streams on achieving electric savings. NYSERDA is in a unique position to identify these critical gaps in funding streams, given that it will be involved in allocating several different revenue streams in 2009, including \$123 million from ARRA for state energy programs in addition to the ramped up revenue from SBCs due to actions of the Public Service Commission in the Energy Efficiency Portfolio Standard (EEPS) proceeding. The draft Operating Plan generally does a good job in identifying gaps in existing funding that can be addressed through use of RGGI auction proceeds.
- ***RGGI auction revenues should be allocated among programs in a manner that maximizes CO₂ reductions.*** We understand from the State energy planning process and State policymakers that New York has adopted an objective of achieving an eighty percent (80%) reduction in greenhouse gas (GHG) emissions by 2050. This “80 by 50” goal should drive the priorities in the development of the Operating Plan. Prioritizing initiatives according to their relative effectiveness in reducing GHG emissions will help New York achieve its “80 by 50” objective, and also preserves the nexus between the source of the RGGI funds – the “taxing” of carbon emissions – and the use of the funds in a manner designed to reduce such emissions. For many programs, the draft Operating Plan identifies the program cost per ton of CO₂ reduction, which provides a basis for comparing the effectiveness of each program in terms of cost-effective reductions in CO₂ emissions. In addition, the Concept Paper issued in November 2008 included CO₂ cost abatement curves developed by McKinsey & Company,⁴ and we understand that similar cost curves will be established to evaluate the effectiveness and relative cost of achieving substantial reductions of GHG emissions in New York. These curves will provide very valuable information, and should be used, to guide the allocation of RGGI auction proceeds. The McKinsey curves,⁵ which rank the emission reduction opportunities according to abatement costs, show the clear cost advantages of pursuing energy efficiency savings as the most cost-effective means of reducing CO₂ emissions. Given that energy efficiency objectives are also funded by other funding sources, the Operating Plan provides an opportunity to use RGGI auction proceeds to capture remaining cost-

² Draft Operating Plan, p. ES-2.

³ Id., p. 16.

⁴ Concept Paper, p. 5.

⁵ McKinsey & Company, “Reducing U.S. Greenhouse Gas Emissions: *How Much at What Cost?*” December 2007 (“McKinsey Report”).

effective energy efficiency savings in program and geographic areas that are inadequately served under existing programs.

- ***Use of RGGI auction proceeds provides a valuable opportunity to address environmental justice issues.*** The public comment portion of the March 6 meeting of the RGGI Advisory Group reinforces the need to ensure that the draft Operating Plan adequately addresses environmental justice issues. Long-term health, job, environmental justice and economic impacts of various options for spending RGGI auction proceeds must be thoroughly analyzed and weighed in the development of the Operating Plan. Environmental justice efforts should focus on under-served communities, and should take into account adverse environmental effects that may bear disproportionately on minority and low-income populations. As discussed below, many programs in the draft Operating Plan would address these environmental justice issues, although the draft Operating Plan was not presented in a manner that features the impact of the proposed programs on under-served communities, and our comments below highlight the initiatives that should provide significant benefits to environmental justice communities.
- ***Program results must be verified and evaluated to ensure accountability and transparency.*** We understand that up to five percent (5%) of program funding will be devoted to evaluation and reporting. We support this level of funding for program evaluation. Through the various revenue streams administered by NYSERDA over the next few years (including SBC funds, economic stimulus money from ARRA, and RGGI auction proceeds), New York has a tremendous opportunity to devote substantial financial resources to address the issues of critical importance to the environmental community (*e.g.*, GHG reductions, increased investment in energy efficiency, and scaling up deployment of renewable energy). It is essential that New York be held accountable for spending these revenue streams in a manner that is transparent, and that assures the taxpayers of the State that its public officials are good stewards of these financial resources. Along with this tremendous opportunity to achieve these important environmental objectives comes a heavy responsibility to be accountable to the citizens of New York that the spending is consistent with well-defined objectives and the programs are managed in a manner that compensates performance. Using a meaningful portion of program funding for verification and evaluation of programs – and refinement, as necessary – is essential to meet the demands of accountability and transparency.

In addition to these general comments, Pace offers the following comments on specific programs or issues.

Comments on Specific Programs or Issues

Opportunities for Clean Distributed Generation and Combined Heat and Power (CHP)

The draft Operating Plan identifies a number of opportunities for using RGGI auction proceeds to pursue clean distributed generation (DG), and CHP in particular. In the area of Residential Space and Water Heating Efficiency, for example, the draft Operating Plan identifies three programs in particular that have significant technical potential for reducing GHG emissions in

the residential sector: the *Multifamily Performance Program*, *EmPower New York*, and *Home Performance with ENERGY STAR*.⁶

As we understand the draft Operating Plan, one possible use of RGGI auction proceeds would be to provide funding for, among other things, the possible replacement of oil and propane heating systems. The *Multifamily Performance Program*, for example, is currently funded by SBC proceeds, and RGGI auction proceeds are proposed to be used to reduce oil and propane energy use in multifamily buildings by providing incentives to repair and replace space and domestic water heating systems. Given that about one-third of the multifamily buildings in New York are heated with fossil fuels, this program provides an excellent opportunity for achieving cost-effective GHG reductions. In particular, the Operating Plan could incorporate incentives for the conversion of No. 6 fuel oil-fired boilers with CHP installations, which would not only assist in meeting GHG reduction targets, but also would provide increased total fuel conversion efficiency, contributions to disaster resilience, reliability improvements, and savings from avoided or delayed investments in transmission and distribution (T&D) infrastructure. Pace supports exploring the consideration of clean DG and high-efficiency CHP as elements of these programs. The availability of RGGI auction proceeds could be used to augment existing programs and enable conversion of inefficient, polluting fuel-oil based units currently being used for hundreds of multifamily buildings.

With respect to longer-term initiatives, the draft Operating Plan proposes to devote some RGGI auction proceeds to *Advanced Building Systems*, including exploring the use of micro-CHP and self-powered heating systems for residential and small-scale buildings.⁷ As stated in the draft Operating Plan, the deployment of CHP in these situations offers the benefits of GHG reductions through more efficient use of fuels, and offers the additional advantage of being able “to provide power during outages.”⁸

In the Electric Power Supply and Delivery section of the draft Operating Plan, the *Advanced Power Technology Program* identifies a number of possible longer-term projects that could be funded as part of the *Advanced Power Delivery* component.⁹ These include exploration of micro-grid CHP. The draft Operating Plan recognizes that “[s]trategically deployed” micro-grids can be equipped with efficient DG systems that can “satisfy the electric and thermal needs of end-use customers within isolated networks.”¹⁰ Pace supports the use of RGGI auction proceeds to explore these issues. Taking advantage of the complementary thermal and electric needs of adjacent customers can provide huge savings in efficiency and potentially large dramatic reductions in GHGs. Moreover, as acknowledged in the draft Operating Plan, micro-grids can improve system reliability by providing power to certain critical networks throughout the state that may be isolated.

Municipal and Institutional Climate Change Program

The draft Operating Plan includes within the residential, commercial and industrial sectors a near-term program that would feature a partnership with local city, town, village and county

⁶ Draft Operating Plan, pp. 16-17.

⁷ Id., p. 25.

⁸ Id.

⁹ Id., pp. 38-39.

¹⁰ Id., p. 39.

governments to pursue climate change mitigation.¹¹ As indicated in the draft Operating Plan, many local governments are motivated to reduce their environmental footprint “but lack technical expertise and financial wherewithal to initiate and pursue the necessary processes.”¹² New York State policymakers have previously identified the value of creating a partnership with local governments in order to achieve climate change objectives. In mid-February, Commissioner Grannis of the New York State Department of Environmental Conservation (DEC) issued a press release encouraging communities to join a “Climate Smart Communities Pledge,” and publicized the availability of a “Climate Smart Communities Guide,” which provides a number of planning steps and actions local governments can take to fight global warming. The Guide is being developed along with NYSERDA, the PSC, and the Department of State.

This initiative confirms the leading role that communities can play on climate change issues, and the inter-connectedness of policies relating to energy efficiency, land use, transportation planning and smart growth in achieving meaningful reductions in CO₂ emissions. The level of funding proposed for this program – \$10.5 million over three years – should provide the basis for providing some effective incentives to motivate communities to join in the “Climate Smart Communities Pledge.” This initiative is an excellent example of a program that fills a need not otherwise met by existing funding sources. It also involves agencies other than NYSERDA in pursuing GHG reduction objectives, which is valuable in that it takes advantage of capabilities of other agencies and their relationships with potential allies in New York’s communities.

To address environmental justice issues, this program could be targeted toward lower income municipalities which lack the resources to initiate such programs, and could provide greater financial and technical assistance to pursue such initiatives in these communities. For example, some portion of the funding could be earmarked for communities having a disproportionate number of low-income families or a high number of industrial sites.

As another aspect of the Municipal and Institutional Climate Change Program, the draft Operating Plan also proposes a revolving loan fund of about \$15.75 million, which would begin to be funded in 2010.¹³ The draft Operating Plan acknowledges that “[u]p-front capital costs are a substantial impediment to energy efficiency improvements.”¹⁴ The revolving fund would address this issue by making available no-interest or low-interest loans to reduce this barrier to entry. Pace supports exploring the use of a portion of the RGGI auction revenues to establish a revolving fund. Pace has been heavily involved in on-bill financing issues in the EEPS proceeding at the PSC, and headed up a working group which focused on the use of on-bill financing as a means of reducing the barrier associated with up-front capital costs. Establishing a revolving loan fund is another means of addressing this barrier. Pace would be interested in serving on the advisory group to be assembled to conduct research and design this program, and could offer the expertise we gained on these issues from the PSC’s EEPS proceeding.

¹¹ Id., p. 20.

¹² Id.

¹³ Id.

¹⁴ Id.

Sustainable Agriculture and Bioenergy

Given the financial commitment from NYSERDA, DEC and the Department of Agriculture and Markets to the development of the Renewable Fuels Roadmap,¹⁵ it is appropriate for the draft Operating Plan to include long-term funding of up to \$10 million to implement the findings and recommendations from that process.¹⁶ Allocating the funding to non-food feedstock supply development during the second year and using funds during the third year for technology and process development and on market, policy and institutional issues is a logical process for building upon the knowledge that will be gained through the development of the Renewable Fuels Roadmap. Biofuels can be expected to play a significant role in achieving reductions in CO₂ emissions over the long term, and investing in this technology should be included in the draft Operating Plan.

Competitive Bidding Program

The draft Operating Plan proposes to devote about \$41 million to a competitive bidding program to be administered by NYSERDA to fund direct and indirect energy and abatement projects to reduce GHG emissions.¹⁷ This program would provide an opportunity for parties other than NYSERDA to develop GHG reduction projects other than those targeted in the specific initiatives identified in the draft Operating Plan. The bidding program will be designed based on similar solicitations administered by NYSERDA and other utility bidding programs.

Pace supports devoting a portion of the RGGI auction proceeds to an open process such as the competitive bidding program. The availability of this process acknowledges that there may be excellent strategies to reduce GHG that are not captured in the programs identified in the draft Operating Plan, and provides an opportunity for creative entities to have worthy proposals funded. As expressed during the March 6 RGGI Advisory Group meeting, we had some concern that this program could stimulate proposals that would also be eligible for offsets under the RGGI program. NYSERDA staff clarified at the meeting, however, that proposals eligible as offsets under the RGGI regime would not be eligible for consideration under this competitive bidding program. With that clarification, Pace supports the proposed allocation of \$40+ million of RGGI auction proceeds to the competitive bidding program, which would be funded during the 2010-2011 fiscal year.

Coal Sequestration

The draft Operating Plan proposes that \$15 million be spent during the three-year budget cycle for “carbon capture, recycling, and sequestration.”¹⁸ A “major thrust” of the program will be to identify and support one or more large-scale demonstration projects in New York. According to the draft Operating Plan, such demonstration projects “will require significant leveraging of funds from the Federal government and the power sector.”¹⁹

Given the absence of significant reliance on coal-fired electric generation in New York – about 13 percent of the state’s electric generation, in MWh, in 2006 – and the absence of dependence

¹⁵ Renewable Fuels Roadmap and Sustainable Biomass Feedstock Supply Study for New York.

¹⁶ Draft Operating Plan, p. 45.

¹⁷ Id., p. 49.

¹⁸ Id., p. 41, Table 22.

¹⁹ Id., p. 40.

on coal mining operations as a source of economic activity in New York, there is considerable skepticism in the environmental community about the wisdom of pursuing a coal sequestration demonstration project in New York. At the same time, given the potential involvement of New York-based businesses in a demonstration project, and the availability of substantial federal dollars from the Department of Energy, there may be opportunities to leverage a modest investment of RGGI auction proceeds to capture a significant federal investment in New York State and stimulate economic activity. There is also an argument that New York should play a role as a potential national leader in addressing the issue of long-term underground storage of CO₂ emissions, given that the nation still depends on coal-fired generation for one half of its electricity supply, a situation that is not like to change in the foreseeable future.

The environmental community is unlikely to embrace a role for coal sequestration in New York State, however, given the strong opposition to coal-fired generation due to its harmful environmental impacts, from mining to transport to the emissions produced by its combustion for the generation of electricity. Moreover, there is a valid concern that a coal sequestration strategy would not simply “bridge” a current need – due to the heavy dependence on coal to produce electricity nationwide – until such time as new, cleaner technologies can be implemented, but rather would act as a “crutch,” enabling continued dependence on ecologically unsustainable coal-fired generation well into the future. In addition, coal sequestration technology has yet to be successfully demonstrated on a commercial scale. Providing economic incentives for the construction of a plant that would burn a carbon-intensive fossil fuel – potentially for decades – before it has been proven that the carbon can in fact be effectively controlled, may not be a prudent use of RGGI auction proceeds. Moreover, the use of a portion of these proceeds for experimental coal sequestration projects is money that could be more invested in *proven* – not *experimental* – energy efficiency measures and clean and renewable sources of generation. Until it can be proven that gains from those two areas have been exhausted, funding any form of coal generation with public monies is likely to encounter stiff resistance from the environmental community.

Use of RGGI auction proceeds in the manner proposed in the draft Operating Plan should be contingent on the precondition explicitly stated in the draft Operating Plan itself: “large-scale demonstration of these technologies *will require significant leveraging of funds* from the Federal government and the power sector.”²⁰ No portion of RGGI auction proceeds should be devoted to coal sequestration in the absence of a clear indication that any such financial commitment will lead to the leveraging of substantial funds from the Federal government and the power sector. Moreover, as stated in the “Overview” section above, Pace urges that RGGI auction revenues be spent on programs that maximize impact. In other words, will the additional spending make a difference in achieving meaningful reductions in CO₂ emissions? In the case of coal sequestration, the additional revenue from RGGI auction proceeds is insignificant when compared with the overall cost of a demonstration project, and it would be difficult to discern any incremental impact of the expenditure. Given the hundreds of millions of dollars that will be necessary to fund a demonstration project, the \$15 million proposed to be allocated to coal sequestration would be an immaterial amount lacking any impact, in the absence of the ability to use those proceeds to leverage Federal or private sector dollars. This same \$15 million would have far greater impact if spent on smaller programs with more direct impact on improving the environmental quality for average New Yorkers.

²⁰ Id. (emphasis added).

Environmental Justice Issues

It is clear from the public comments at the March 6 meeting of the RGGI Advisory Group that many in the environmental justice community are concerned about the adequacy of the programs proposed in the draft Operating Plan in addressing environmental justice issues. The draft Operating Plan identified six criteria used in selecting programs to be included in the plan, one of which is that “[t]he initiative can help reduce the disproportionate cost burden and harmful environmental impacts on low-income families and environmental justice communities.”²¹ From our review of the draft Operating Plan, it appears that several program initiatives can provide substantial relief in low-income communities and other areas disproportionately affected by environmental impacts. Environmental justice issues often arise from the existence of low-cost housing next to industrial sites, for example, and programs aimed at reducing emissions from commercial facilities will inevitably reduce emissions of particulate matter and other harmful co-pollutants of CO₂ in these environmental justice communities. The draft Operating Plan may have been deficient in that the environmental justice attributes of many programs were not featured. And some programs could benefit from a greater allocation of funds that would provide more resources to address environmental justice concerns.

We identified a number of programs that can be expected to provide relief with respect to the issues raised by the environmental justice communities, including the following:

- **Residential Space and Water Heating Efficiency**
 - The draft Operating Plan identifies a suite of programs under which nearly forty percent (40%) of funding is allocated to low-income programs.²² These programs include the *Multifamily Performance Program*, *EmPower New York*, *Home Performance with ENERGY STAR*, *Residential Green Homes Incentive Program*, and *Solar Thermal Incentive Program*. According to the draft Operating Plan, these programs will seek to address environmental justice issues “by directly targeting outreach to environmental justice communities and working with community-based organizations that address environmental justice issues by referring to them households and buildings.”²³
 - Approximately 46% of the funds in the Residential Space and Water Heating Efficiency programs are proposed to be used to support energy efficiency improvements in low-income homes and multifamily housing.²⁴
 - These programs can be expected to help mitigate the disproportionate impact that the increased cost of electricity will have on lower income families, while also improving indoor and outdoor air quality around the facilities by decreasing pollutants associated with the combustion of fuel (e.g., particulate matter, and SO₂) in addition to the reduction in CO₂. The draft Operating Plan could perhaps be improved by clarifying how environmental justice communities or low-income users will be selected, the standards for qualification, and a description of how the money distributed would help to address the concerns of the environmental justice community.

²¹ Draft Operating Plan, p. ES-1.

²² Id., p. 16.

²³ Id.

²⁴ Id., p. ES-3.

- **Commercial and Industrial Efficiency**

- Environmental justice communities are typically located around commercial and industrial facilities. Improvements in efficiency and emissions reductions in these facilities will directly increase the quality of air and living conditions in these communities. The draft Operating Plan identified programs that focus on numerous areas to increase efficiency of industrial and commercial facilities that would benefit the surrounding community, such as *Energy Efficiency*, *Industrial and Process Efficiency*, and *New Construction* that integrates fossil fuel equipment and CO₂ reduction opportunities with energy efficiency measures.²⁵
- While these programs do not offer direct benefits to environmental justice communities, these communities will nonetheless derive substantial improvements in air conditions and quality of life as the surrounding commercial facilities achieve increased efficiency. The programs could be made more responsive to environmental justice concerns by creating either a standard or proportion of industrial and commercial projects that must be in low-income and multifamily housing communities. Another option would be to increase financial incentives for installing efficiency measures in those industries located in environmental justice communities.

- **Transportation**

- Environmental justice communities are frequently located near critical transportation infrastructure, such as highways, train tracks and commuter rails. These communities are thus affected directly by any environmental harm that results from the operation and use of this infrastructure. Improvements in the reduction of harmful emissions, excess waste, noise, or other externalities associated with transportation will help alleviate the burden on environmental justice communities.
- The objective of the Transportation Efficiency Program²⁶ is to improve vehicle and system efficiencies through measures that reduce total vehicle miles traveled (VMT) and improve the efficiency of New York’s diesel fleet with retrofits, replacement, and electrification. “Private companies and individual drivers do not perceive the full costs of their transportation choices, which cause congestion, road deterioration, local air pollution, and climate change.”²⁷ “Publicly funded programs to help reduce vehicle miles traveled will help drivers choose transportation options that impose fewer costs on society” and environmental justice communities.²⁸

- **Electric Power Supply and Delivery**

- The programs in the draft Operating Plan geared toward increased efficiency and lower emissions²⁹ of co-pollutants of CO₂, (such as particulate matter and SO₂) from power plants are most likely to benefit environmental justice communities located near power plants.

- **Workforce Development**

²⁵ Id., pp. 12-13.

²⁶ Id., p. 27.

²⁷ Id.

²⁸ Id.

²⁹ Id., p. 36.

- The programs in the draft Operating Plan focused on workforce development should provide benefits for low-income communities. As noted in the draft Operating Plan, “training programs are needed to ensure that a pool of qualified workers is available for jobs in product development, manufacturing, distribution and sales, installation, operations and maintenance, planning, and performance monitoring of energy efficient and renewable energy products and systems.”³⁰
- The draft Operating Plan could perhaps strengthen this benefit by creating a standard that a certain percentage of trained individuals will come from low-income households.

Solar Power

Pace supports the proposed expansion of the photovoltaic (PV) incentive program statewide to include eligibility of any residence, business or institution in New York.³¹ Particular emphasis should be placed on communities with high peak electric demands, as these areas should produce the greatest benefits in terms of displacing the dirtier resources that are operated to generate electricity during peak periods. Moreover, strategic deployment of PV in capacity constrained areas should produce benefits through deferred or reduced investment in T&D facilities.

The draft Operating Plan also proposes to expand the *Solar Thermal Incentive Program*, which would replace fossil-fuel and electric domestic hot water systems.³² During the public comment portion of the March 6 hearing, a spokesperson for the solar thermal industry (EarthKind Energy) offered remarks urging that additional incentives be provided to support installation of solar thermal systems in New York. Following up on that suggestion, Pace investigated these issues further. We learned that about 19% of New York City’s total energy is used to heat water.³³ Similarly, water heating accounts for approximately 18% of New York State’s household energy consumption.³⁴ NYSERDA estimates that a properly placed solar thermal system can provide about half the required hot water in a New York home, and an even greater percentage for homes in more optimal areas such as New York City and Long Island.³⁵ This would provide real energy savings; using solar thermal for 1.2 million households in New York State would “yield energy savings of 171 million kWh of electricity, 6.5 billion cubic feet of natural gas, and 25 million gallons of fuel oil annually.”³⁶

The Renewable Energy Task Force’s February 2008 report recommended a goal of installing 1,100 solar thermal systems statewide by 2011. According to the Draft Operating Plan, the proposed expansion of the *Solar Thermal Incentive Program* would result in 1,833 new solar thermal systems being installed by 2011,³⁷ thereby exceeding the Renewable Energy Task Force’s goal. We understand from EarthKind Energy’s comments that it is recommending a goal of 10,000 solar thermal installations per year by 2011, following a “European Roadmap.” While

³⁰ Id., p. 46.

³¹ Id., p. ES-4.

³² Id., p. 17.

³³ <http://www.nyc.gov/html/planyc2030/html/downloads/download.shtml>

³⁴ <http://www.nyserda.org/publications/Report%2008-09%20Solar%20Domestic%20Hot%20Water%20-%20web.pdf>

³⁵ <http://www.nyserda.org/publications/Report%2008-09%20Solar%20Domestic%20Hot%20Water%20-%20web.pdf>

³⁶ <http://www.nyserda.org/publications/Report%2008-09%20Solar%20Domestic%20Hot%20Water%20-%20web.pdf>

³⁷ Draft Operating Plan, p. 17.

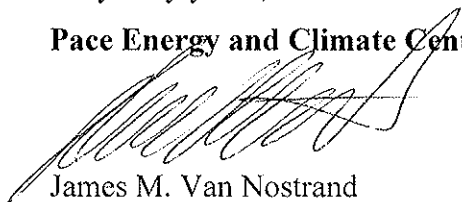
this is an ambitious and likely unattainable goal in the short term, the analysis shown in the draft Operating Plan suggests that solar thermal may be under-funded compared to solar PV, given the relative cost-effectiveness of solar thermal in reducing CO₂ emissions: \$81 per ton of carbon reductions from solar thermal,³⁸ as compared to \$284 per ton for solar PV.³⁹ Notwithstanding this difference in cost-effectiveness in reducing CO₂ emissions, the draft Operating Plan proposes \$32 million of spending on solar PV incentives, with less than one quarter of that amount (\$7.5 million) proposed for solar thermal. At the same time, we recognize that providing greater incentives for solar PV installations may be necessary given PV's higher cost and, ultimately, that more widespread deployment of solar PV should result in lower per kW prices through economies of scale. NYSERDA's August 2008 report on "Solar Domestic Hot Water Technologies Assessment"⁴⁰ provided an in-depth look at domestic solar thermal applications in New York State, and made some important conclusions that support additional funding for solar thermal initiatives. Given NYSERDA's experience with both of these solar applications and its oversight over the related programs and inter-relationship of funding sources, NYSERDA is uniquely qualified to allocate the RGGI auction proceeds in a manner that is in the long-term best interests of New York citizens.

Conclusion

The Pace Energy and Climate Center appreciates the opportunity to submit these comments on the draft Operating Plan. We look forward to continuing to participate on the RGGI Advisory Group as NYSERDA takes the remaining steps to finalize and implement the Operating Plan. Questions regarding the foregoing comments should be directed to Jamie Van Nostrand at (914) 422-4082 or jmvannostrand@law.pace.edu.

Very truly yours,

Pace Energy and Climate Center



James M. Van Nostrand
Executive Director

³⁸ Id., p. 18.

³⁹ Id., p. 38.

⁴⁰ <http://www.nysERDA.org/publications/Report%2008-09%20Solar%20Domestic%20Hot%20Water%20-%20web.pdf>