

**COMMENTS OF
THE RENEWABLE ENERGY TECHNOLOGY AND
ENVIRONMENT COALITION¹**

Case 03-E-0188 - Proceeding on Motion of the Commission Regarding a Retail
Renewable Portfolio Standard

September 26, 2003

¹ RETEC members include: American Lung Association of New York State; American Wind Energy Association; Citizen's Advisory Panel; Community Energy; Fuel Cell Energy, Inc., Hudson River Sloop Clearwater; Natural Resources Defense Council; New York Lawyers for the Public Interest; New York Public Interest Research Group; New York Renewable Energy Coalition; New York Solar Energy Industries Association; Pace Energy Project; Plug Power; PowerLight; Public Utility Law Project; Riverkeeper; Safe Alternatives for Energy Long Island, Scenic Hudson; Sierra Club Atlantic Chapter; Solar Energy Industries Association; Sustainable Energy Developments, Inc.; and Union of Concerned Scientists.

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I. Summary of Comments

The Renewable Energy Technology and Environment Coalition is pleased to be able to provide these comments in support of rapid implementation of a renewable portfolio standard (“RPS”) in New York. The key features of a successful RPS include: 1) setting an enforceable schedule of interim requirements; 2) targeting eligibility to new renewable resources, including emerging renewable technologies; 3) ensuring that there is a market development process, including contracting provisions, that actually drives development of new renewables; and 4) developing a liquid market for renewables.

With load growth, by 2013 New York will need about 9% new renewables to achieve the 25% goal. As the studies by the Department of Public Service Staff (herein “Staff”), the Joint Utilities, and the New York State Energy Research Development Authority have all demonstrated, this is readily achievable. RETEC’s own analysis shows that there is more than enough affordable renewable potential purely within New York to achieve the RPS.

The benefits of an RPS are highly dependent on the eligibility criteria. Wind, solar power, tidal power, and fuel cells should be eligible. Efficiency and combined heat and power, although environmentally beneficial, are not renewable resources and should not be eligible. Not all biomass is renewable, but fortunately, the biomass working group has taken a major first step towards developing the criteria for which types of biomass should be eligible. Hydropower is a similarly complex resource and here in we provide a detailed set of interim standards. Garbage incineration should be excluded from the RPS because it is not a renewable resource and it has negative environmental impacts. Furthermore, while no tiers should be used to distinguish among levels of renewability,

the emerging technologies of photovoltaics, fuel cells, and small wind offer important benefits that are only accessible if special measures are taken to enable their participation.

The individual procurement approach is the only one with a successful track record of implementation and body of lessons-learned to draw from. However, the central procurement approach can work as well, but only if NYSERDA is the operator. If a central procurement approach is taken, RETEC recommends that a hybrid model be used that shifts responsibility over time to energy service companies to acquire renewables. In the long run this will create a more competitive and sustainable market for renewables.

The cost studies of Staff and the Joint Utilities demonstrate the importance of long-term contracts. Without a requirement for long-term contracts, the cost of financing is likely to be prohibitive and the overall costs of the RPS will be significantly higher.

Once the benefits that an RPS will generate are taken into account, the cost studies also demonstrate that implementing an RPS in New York is good environmental policy and good economic policy. The Synapse report submitted by RETEC in July identified a range of benefits not captured in either cost study. Attached to these comments is an additional analysis by Synapse showing how the Joint Utilities cost study paints a misleading picture of the costs of an RPS. Also attached is a recent report that is the first to use a detailed natural gas market model to study the impacts on natural gas prices of increased reliance on renewables. The study finds that an increase in renewables in New York alone will save New Yorkers \$385 million through 2008 by lowering natural gas prices. At this rate the RPS would save well over a billion dollars by 2013.

II. Introduction²

The following comments follow the outline provided by the Administrative Law Judge. RETEC has attempted to avoid repeating comments submitted earlier in this proceeding but refers interested parties to that document for further explanation of our positions.

III. Comment on the Revised Working Objectives

A. Working Target

RETEC supports the Working Target included in Judge's Stein Ruling Establishing Comment Procedures (June 19, 2003) at 3: By the year 2013, at least 25% of the electricity retailed in New York will be derived from renewable resources.

RETEC believes the use of the term "retailed" here does not preclude the inclusion of customer-sited renewable resources to meet the RPS goal.

B. Revised Working Objectives

RETEC supports the Revised Working Objectives included in Judge Stein's Ruling Establishing Comment Procedures at pages 3-4, and offers the following additional clarifying language for Revised Working Objectives 1 and 2.

1. New York's Environment: This objective should be supplemented by adding language clarifying that improving public health and addressing environmental justice

² This proposal is a consensus document submitted on behalf of all RETEC members for consideration as a whole. Individual member organizations reserve the right to take different positions on individual components of the proposal on a stand-alone basis or in other policy arenas but support the RETEC proposal as a whole on a consensus basis.

burdens are included within the term “environment.” RETEC suggests the following language:

Improve New York’s environment and public health, by reducing air emissions, including greenhouse gas emissions and other air emissions with national, regional and local impacts, and other adverse environmental impacts on New York State of electricity generation, including reducing public health burdens in environmental justice communities.

2. Generation Diversity: This objective should be supplemented by including a phrase on the importance of generation diversity to reducing volatile fossil fuel prices.

RETEC suggests the following language:

Diversify New York State’s electricity generation mix; improve energy security and reliability; and reduce New York State’s exposure to volatile fossil fuel prices.

RETEC concurs with Revised Working Objectives 3 through 6 as written in Judge Stein’s Ruling Establishing Comment Procedures at page 4.

IV. RETEC Straw Proposal

Please see Appendices A and B for copies of the RETEC proposals. RETEC offers these proposals as its determination of the best models for implementation of an RPS for New York. These models have been left as they were presented to the active parties in this case earlier this summer in order to avoid any confusion, however, these comments contain more specific language in a number of areas and the documents should be read together to obtain a clear understanding of the RETEC position. See below for an elaboration of our preferred model and further explanatory details.

V. Eligibility

A. Baseline

At the April 16th meeting of the Eligibility Working Group, Staff circulated a proposed compromise on the characterization of the baseline of existing renewables in New York State. On April 25th, RETEC submitted a letter to ALJ Stein in support of this compromise.³ RETEC continues to support the Staff compromise as a fair and accurate representation of the current mix of renewable energy output in New York State, and as a way to significantly simplify implementation of the RPS by avoiding the need to constantly make minor adjustments to the baseline.

Staff's proposed baseline, in conjunction with a load forecast, provides a reasonable assessment of the contribution that existing renewables will provide to New York in 2013 and provides a sound basis for setting annual incremental requirements until 2013, particularly given the preponderance of hydro power in the base of existing renewables in New York and the inherent fluctuations in the annual generation from hydro facilities. The Staff proposal, because it does not specifically identify the exact renewable resources included in the baseline, also allows this proceeding to focus on the more important issue of the new renewables necessary to meet the 25% RPS requirement and on the new resources that should be deemed eligible for inclusion in the RPS. The Staff proposal avoids protracted, unnecessary and unproductive debate over classification of existing renewable resources. As is discussed below, RETEC does not believe that existing renewable resources (defined as those put into operation prior to January 2000) should be included in the list of eligible resources for the RPS.

³ This letter was inadvertently dated March 28, 2003, rather than April 25, 2003.

B. Requirement Levels

1. Forecast

RETEC supports the use of the State Energy Plan forecast as was done in the Staff cost study. As discussed below, interim requirements are essential and the best available forecasts should always be used to establish them. They will need to be adjusted periodically, but these changes should be infrequent and careful. All of these issues are addressed in further detail below.

2. Start Date

To spread the development of the RPS over as much time as possible, it is essential that the initial requirement be set for as early a date as possible. We propose that the initial requirement be set for 2005. Starting earlier will reduce the amount of new renewables that need to be brought online in any given year. This will reduce the cost of new renewables by reducing the demand pressure on construction services. It should also ease implementation by allowing for a gradual start to all the implementation mechanisms.

We believe a 2005 start date is achievable if the Commission adheres to its expedited schedule, there are clear and timely signals of this start date, and the initial requirement is appropriately set based on reasonable expectations of the ability to develop eligible resources in the near-term. We also note that with the banking provision proposed in RETEC's individual procurement model (dated June 24, 2003) and the adoption of a credit tracking and trading system, resources procured from June of 2004 through June of 2006 could be used to comply with this initial requirement.

Below we present a set of interim requirements starting with 0.25% in 2005. While this contrasts with the 2006 start date in Staff's cost study, for the reasons noted above, this should only serve to reduce the costs of the RPS.

3. Interim Requirements

a) Need for Interim Requirements.

Binding annual incremental requirements are essential to ensure that New York achieves the 25% goal, and to minimize the cost of achieving this goal. Incremental annual requirements greatly facilitate the sustained and orderly development of New York's renewable industry by providing the confidence and certitude necessary for advanced planning and investment in project development. This will enhance the prospects for viable renewable proposals being available when needed. Furthermore, binding annual requirements assure that procuring entities will gradually phase-in increasing increments of renewable energy into their portfolios, and are well positioned to meet the 25% goal by 2013. With developers confident that the market is developing, there will be competition among suppliers and sufficient lead-time for projects to be built without rush premiums.

Put another way, without a binding requirement, the procuring entity or entities have an incentive to simply delay progress toward meeting the goal to avoid early expenditures. Without developers or purchasers acting early, New York may simply not develop the necessary amount of renewables, or if sufficient renewable energy is put on line, it will likely be in a rush shortly before the 2013 ultimate deadline. Postponing development will drive up the cost of compliance with the RPS by greatly limiting utilization of existing manufacturing and construction infrastructure, and straining future

manufacturing and construction infrastructure by forcing a situation where demand greatly outstrips supply.

b) Proposed Interim Requirement Levels.

The requirements should be set by looking at the difference between 25% of the best available load growth forecast and the baseline discussed in the previous section.

The requirements should start small and grow gradually in the first two or three years to allow the infrastructure for project development to ramp up in New York. Assuming a 2005 start date and using the State Energy Plan load forecast, a sample set of annual requirements is presented in the table below.

	MWH Forecast	25% goal	Baseline	Total Increment needed	Increment as % of load	RETEC Sample RPS Reqs.	Staff Cost Study RPS Reqs.
2003	160,480,000						
2004	162,844,000						
2005	165,280,000	41,320,000	28,896,189	12,423,811	7.52%	0.25%	0%
2006	167,490,000	41,872,500	28,896,189	12,976,311	7.75%	0.75%	1.17%
2007	169,977,000	42,494,250	28,896,189	13,598,061	8.00%	1.50%	2.36%
2008	172,404,000	43,101,000	28,896,189	14,204,811	8.24%	2.50%	3.54%
2009	174,658,000	43,664,500	28,896,189	14,768,311	8.46%	3.50%	4.70%
2010	176,910,000	44,227,500	28,896,189	15,331,311	8.67%	5.00%	5.85%
2011	179,031,000	44,757,750	28,896,189	15,861,561	8.86%	6.50%	6.98%
2012	180,907,000	45,226,750	28,896,189	16,330,561	9.03%	8.00%	8.09%
2013	182,867,000	45,716,750	28,896,189	16,820,561	9.20%	9.20%	9.20%

Source: SEP base case

In the table above, the last column presenting the RPS requirements from the Staff's cost study are derived from Table 5A-1.⁴ The sample requirements presented by

⁴ The RPS targets from Staff's cost study are derived by dividing the annual sum of Staff's SBC-like tier and the incremental tier by the annual MWh forecast. Note that Staff refers to incremental targets in Table 4D-1, but these targets only achieve the 25% goal assuming no load growth. Staff's actual additions follow the schedule presented above and achieve the goal of 25% of sales in 2013 with 9.2% coming from new renewables.

RETEC have two potential advantages over those used by Staff. First, by starting a year earlier, it spreads the requirements over a longer period of time reducing the costs incurred in any given year. As noted above, RETEC urges that the earliest possible start date be used. Secondly, by growing more gradually in the early years, the RETEC requirements allow the market to develop in a more orderly way. In particular, the RETEC requirements have a lower requirement for 2009, which might have the effect of reducing the bill impacts for that year.

c) Target Adjustment Mechanism

The schedule of requirements should be adjusted periodically to account for changes in load growth and dramatic shifts in the operations and sales of the existing hydro resources in New York. These adjustments should be bounded by several criteria: 1) they should be announced at least two years in advance of when they go into effect; 2) they should never lead to a decrease in the number of MWhs of renewables required; and 3) they should only account for significant (e.g. >1% of total sales) reductions, resulting from plant closures or long-term shifts to out-of-state sales from the existing hydro base. The first criterion is essential to allow advance development of projects. Potential fluctuations in the size of the market on a shorter-term basis will add risk and therefore cost. Similarly, the second criterion is essential to assure that projects can be financed. Unless financiers know a market will exist and will remain at or above a certain size, they are likely to see the market as too risky. Even then a significant portion of the projects are likely to require long-term contracts of one sort or another. The final criterion is also important to assure predictability in the market. If the adjustments had to account for annual fluctuations in the hydro output or the ebb and flow of operations at the many

smaller renewable facilities within New York, it would be extremely difficult to anticipate the size of the RPS requirements in any given year.

d) RPS Requirements Beyond 2013

In addition to setting required annual requirements, the Commission should also establish that the 2013 RPS requirement extends indefinitely thereafter, and incorporate a process to periodically establish new incremental requirements. Maintaining the level of renewables achieved in 2013 is essential both to lock in the benefits that these resources will provide and to minimize the cost of acquiring these resources. It is no coincidence that both the Staff cost study and the Joint Utilities cost study used a 20-year capital recovery period; renewables are capital-intensive resources. If the RPS requirement sunsets in 2014, all or most of the capital recovery will have to occur before then. This will greatly increase the net present cost of compliance with the RPS.

Furthermore the benefits that make the RPS a good investment today will still be accruing after 2013. By maintaining the 2013 requirement, New York will lock in the benefits already achieved. By periodically evaluating and establishing new requirements, New York has the potential to garner more benefits as the cost of renewables continues to come down. The RPS can be allowed to “self-sunset” when the cost of the renewables is no greater than conventional generation.

C. Target Resource Eligibility

RETEC proposes that the general categories of resources that should be considered eligible for the RPS are those relying on biomass, fuel cells, hydropower, solar power, tidal, and wind power. However, because a central goal of this proceeding is to improve New York’s environment (Revised Working Objective One) and because

no energy resource is entirely without environmental impacts, specific eligibility criteria for each of these resources are necessary. Proper siting is the most effective mitigating technique for avoiding negative environmental impacts.

The following section outlines RETEC's proposed general and technology-specific standards for RPS eligibility. We also discuss our reasons for opposing eligibility for certain technologies.

1. General Requirements

There are two general requirements that should apply to all eligible resources. First, only new renewables (defined as those installed and put into operation on or after January 1, 2000) should be considered eligible. The stated goal of the Commission in its Instituting Order was to increase the amount of renewable energy in New York. Instituting Order at 2 (increase in renewables from 17% to 25% of total electricity "would be in the public interest"). Including all existing renewables by giving them credit (through a premium payment) toward meeting the requirements is illogical and inconsistent with this goal. Existing renewable energy resources in New York (chiefly hydro) are not evenly distributed contractually within New York and their inclusion within the eligible resources could result in windfall profits. Existing renewables were developed based on business decisions made without anticipation of an additional premium payment through the RPS. The focus on new resources will help minimize the cost of implementing the RPS by avoiding paying a premium for projects that were constructed and financed without expectation of any renewable credit market. Finally, many existing renewables (including some existing hydro resources) have adverse

environmental impacts, which are inconsistent with this proceeding's first goal of improving New York's environment (Working Objective One).

Second, once a resource is eligible, it should be eligible wherever it is connected to the grid including behind a customer's meter or a wholesale meter. In other words, RPS eligibility should be neutral as to the point of interconnection.

2. Hydropower

The impacts of hydropower can range from significant (habitat destruction and harming endangered species) to relatively benign. Plant size is often suggested as a practical and effective method for distinguishing those with benign effects from those with significant adverse environmental impacts. The size criterion, however, is a poor indicator of environmental impacts, particularly when it is used alone. Small facilities that de-water river reaches and block fish passage may be more environmentally destructive than larger facilities designed and operated to reduce environmental impacts.

The Low Impact Hydropower Institute (LIHI) is a not-for-profit organization dedicated to identifying hydropower plants in the U.S. that effectively protect fishery, water, land and recreation resources. LIHI focuses on identifying low-impact hydro plants based on sophisticated criteria that go far beyond a simplistic comparison based on installed capacity. The LIHI certification criteria and certification process are open to public scrutiny, and public participation in the certification process is encouraged.⁵

The New York State government cannot delegate its decision-making to a not-for-profit organization such as LIHI. Furthermore, LIHI's certification process is not ideally

⁵ Information on the LIHI program and evaluation criteria is available on its web site: www.lowimpacthydro.org.

suited to an RPS, and its certification criteria do not allow consideration of projects involving construction of new dams, or projects located outside the U.S. Thus it is necessary to establish objective criteria that can be applied by the PSC or another state agency.

It has been suggested by some parties that any hydro project with a valid license should be deemed eligible for the RPS. However, the usefulness of a license in determining the environmental acceptability of a hydro project depends on the regulatory regime under which it was issued. Licensing criteria for hydro projects have changed greatly over time and still vary widely between the U.S. and Canada. To better understand these differences and their significance with respect to the development of eligibility criteria, RETEC asked the Canada-based Helios Centre and the U.S.-based Low Impact Hydropower Institute to prepare a report that would explore these issues and propose eligibility criteria for the New York RPS.

The Helios-LIHI joint report is attached in Appendix C. While the report proposes criteria that could be used for both existing and new hydropower facilities, for the reasons stated above, RETEC only supports the eligibility of new renewable resources.

In the context of hydropower, “new” resources can refer to building a new dam, adding turbines to an existing dam that does not now produce electricity, or adding capacity to an existing hydropower facility. In the case of expansion or repowering of an existing facility, only the increase in output should be counted as RPS-eligible. This would be calculated as a fraction of the annual output in proportion to the increase in rated capacity of the facility.

As noted in the attached report, the ideal eligibility criteria for hydro would look at the specifics of each project and make a case-specific determination. However, establishing the factors that would be considered and the precise indicators and weightings that should be applied will require significant time and effort. Recognizing this constraint, the Helios-LIHI report also proposes interim standards, based primarily on existing licensing processes. At the same time, it encourages the Commission to set in place a process to establish permanent criteria, based on the physical and biological attributes of each facility, as quickly as possible.

RETEC recommends the adoption of the interim standards proposed in the Helios-LIHI report and summarized below. As with the recommendations of the biomass working group, these recommendations will need to be translated into practical rules, which RETEC proposes take place in the next phase of this proceeding after the recommended decision. RETEC also recommends the establishment of a process to develop permanent criteria, along the lines proposed in the Helios-LIHI report.

The attached Helios-LIHI report recommends transitional criteria for each of the following categories of hydropower: a) FERC-licensed projects, b) U.S. projects which do not require a FERC license, and c) Canadian projects. For FERC-licensed projects, it is useful to distinguish between those licensed (or relicensed), before or after the implementation of the Electric Consumers Protection Act of 1986, as this act significantly strengthened the licensing regime.

Projects with post-ECPA FERC licenses should be considered eligible as long as they meet specific compliance and environmental criteria including additional environmental criteria not currently captured by the regulatory process. (The specific

criteria are described under Criteria A on pages 5-6 of the Helios-LIHI report.) For example, these criteria would exclude projects which:

- Have frequently been found to be out of compliance with their license conditions,
- Block fish migration,
- Contributed to extirpation of fish or other species,
- Contribute to non-attainment of water quality standards,
- Provide flows which are insufficient for the protection of aquatic and terrestrial resources, or attainment of resource agency management goals,
- Have unresolved issues involving aboriginal people, or
- Fail to provide adequate public access or recreational facilities.

As the Low Impact Hydropower Institute certification process addresses these and other issues, LIHI-certified projects should be deemed in conformity with these compliance and environmental criteria. The Helios-LIHI report also proposes additional criteria for projects that require construction of a new dam.

Projects that for one reason or another do not require a FERC license would also require evidence of either an all-party settlement agreement or having made a good-faith effort to solicit the participation of interested parties in negotiating such an agreement. (The criteria for such evidence are detailed in Criteria B on page 6 of the attached Helios-LIHI report.)

In the event that the project's owner is legally enjoined from entering into settlement agreements, as is the case for some projects owned by the United States government, then decisions regarding the continued operations of the project must be

based on an all-party consultation process. (The criteria for this process are detailed in Criteria C on page 7 of the Helios-LIHI report.)

As for projects outside the U.S., they should be deemed eligible if they meet the specific compliance and environmental criteria referred to above (and found in Criteria A) and they were approved under a system similar to that created by ECPA, which:

- Requires that approval to build or continue to operate be reached in a transparent and inclusive public process,
- Gives equal consideration to power and non-power uses,
- Requires that conditions recommended by provincial resource agencies be accepted and implemented unless it can be demonstrated that they are inconsistent with the purposes of the applicable laws and that the license conditions adequately protect fish and wildlife, and
- Provides procedural safeguards and incorporates a public scoping process.

If the legal and regulatory framework does not provide these assurances, then the standard applied to projects not required to get FERC licenses (Criteria B) should apply.

Finally, in the event that the owner of a Canadian project is legally enjoined from signing a settlement agreement, then the requirements for an all-party consultation process (Criteria C) should apply.

While these standards may seem complicated, certifying projects to them should be a relatively straightforward process. In each case, certification could be based on the submission of an affidavit from the project owner, with supporting documentation as appropriate, attesting to the project's conformity with the applicable standard.

Certification could be carried out either by the PSC or by another agency or third party

designed by it. In order to ensure transparency, we recommend that these applications be posted for public comment.

3. Solid Waste

The affidavits of Sam Swanson (Pace Energy Project) Allen Hershkowitz (NRDC) and Timothy Logan (New York City Environmental Justice Alliance) submitted with these comments explain in detail the reasons why municipal solid waste (“MSW”) incineration (“Waste to Energy” or “WTE”) should not be designated as eligible for inclusion in the RPS. We will briefly summarize these arguments here and present a fuller discussion of them in Appendix D. We have chosen to present the bulk of our comments on solid waste in an appendix simply because of their length.

Despite the sometimes-heated exchange of comments and statements on the issue of MSW in this proceeding, the basic facts that RETEC believes should be dispositive are clear from the record of this proceeding.

First, while MSW contains biomass-based material, it also contains substantial amounts of non-biomass material such as plastics, glass and metal. Even the Integrated Waste Service Association (“IWSA”) estimates that 25% of MSW on a Btu basis is non-biomass material. Moreover, even the biomass-based portions of the MSW waste stream cannot be characterized as renewable because they are not sustainably harvested and are often heavily processed and treated. Thus, MSW is not renewable nor should it be eligible for the New York RPS.

Second, New York’s existing WTE plants, on average, have higher emissions rates per unit of electricity produced than New York’s coal-burning power plants for two critical air pollutants with profound environmental and public health impacts: mercury

and nitrogen oxides (NOx). In contrast, renewables such as solar, wind and low-impact hydro produce no mercury or NOx emissions (or any other air pollution emissions) and the criteria established by the biomass working group ensure that RPS eligible biomass facilities will have far lower emissions rates. Thus, inclusion of MSW in the New York RPS would not be consistent with the Working Objectives in this proceeding or the Commission's environmental objectives.

Third, there is no real dispute that if any new WTE facilities are built in New York, New York City is a likely location. Economic and political realities indicate that any WTE facilities sited in New York City will be placed in low-income communities of color. Principles of environmental justice – recently adopted as state policy by the New York Department of Environmental Conservation – also dictate against inclusion of WTE in the New York RPS.

Finally, in Appendix D, RETEC addresses the most recent and relevant guidance on the definition of renewable energy resources in New York State. Although the issue of how other states and the federal government address MSW is not binding or even particularly relevant to this New York law and policy-based proceeding, Appendix D also briefly addresses IWSA's misleading legal discussion of the role of MSW in other states' renewable portfolio standards and at the Federal level.

4. Biomass

Biomass is a term that includes a large variety of sources of biomass (also known as feedstocks) and a number of different ways of turning these feedstocks into electricity. At their best, biomass feedstocks can be totally sustainable and entirely carbon neutral (meaning they absorb as much carbon as is emitted when they are turned into electricity).

Likewise, the conversion technologies that turn biomass into electricity can emit fewer pollutants than the cleanest natural gas power plant. At worst, however, cultivation and collection of biomass feedstocks can lead to clear-cutting, loss of habitat, soil erosion, and water pollution. Similarly, poorly controlled biomass conversion technologies can release more carbon dioxide, nitrogen oxides, carbon monoxide, and particulate matter than a coal power plant at any given level of output. This range of potential performance requires detailed standards to ensure that inclusion of biomass in the RPS will improve New York's environment (Revised Working Objective One). The term biomass does not include MSW. As the Biomass Working Group Final Agreement in this proceeding simply and correctly concluded, "Municipal Solid Waste is not biomass." Final Agreement on the Eligibility of Biomass for the NYS Renewable Portfolio Standard, Prepared for the Working Group by Edward Gray, Antares Group, Friday, August 8, 2003 at 2. Although the mixed stream of garbage in MSW contains some biomass, it is not RPS eligible biomass. See Appendix D (MSW Eligibility Comments).

Fortunately, the Biomass Working Group, under the very thoughtful guidance of Edward Gray from the Antares Group, has begun the process of developing a set of practical standards for eligibility of biomass in the New York RPS. The report of this working group can be found at:

<http://www.antaresgroupinc.com/pdfs/Biomass%20Eligibility%20Agreement%20V3.pdf>

RETEC participated in the working group and supports many of the principles and criteria for standards developed by the working group as the foundation from which final standards should be developed. With the changes and additions noted below, the

report should be adopted, and the working group should be encouraged to continue the follow-up work envisioned in its report.

The working group divides standards for biomass into four categories: 1) sustainably harvested wood; 2) use of process or treated biomass resources; 3) emissions standards for biomass facilities participating in the RPS; and 4) limitations for livestock operations using manure as an energy resource. For the most part the language of the working group report speaks for itself, but there are a few areas where RETEC has more detailed positions. In particular it should be noted that while the working group standards could be applied to both existing and new biomass resources, as has been noted above, RETEC supports eligibility for new resources only.

On sustainably harvested wood, the Forest Stewardship Council (FSC) certification represents the only existing rigorous and independent certification standard and should be required for any resources taken out of a forest and used at a biomass power plant. By contrast the American Forest and Paper Association's (AF&PA) Sustainable Forest Initiative (SFI), developed in response to the significant demand for FSC certified wood, should not be utilized for purposes of RPS eligibility. While SFI is a step in the right direction, it fails to address many destructive forestry practices and lacks independence in its auditing and reporting requirements. Two reports detailing some of the differences between these two standards are attached as Appendices E and F. It has been argued that forest products are inherently sustainable by virtue of the fact that the amount of forested land in New York is increasing. However simply looking at acreage misses the significant impacts on biodiversity, ecosystem health and soil erosion that wood harvesting can have. A rigorous and independent certification process, such as that

entailed in the FSC process, is essential. RETEC supports the Biomass Working Group plan to develop for New York such a process administered by a government authority or other third party to certify fuel supplies from sustainably harvested sources.

The cultivation of willows and other agricultural crops used as biomass fuels has the potential to cause both positive and negative impacts to surface and ground waters, to wildlife and to neighboring properties. Cultivation of some of these crops can involve multiple application of broad spectrum herbicides (See SUNY ESF publication “Willow Biomass Producers Handbook” www.esf.edu/willow/PUBLICATIONS/handbook.htm.) If improperly handled there is the potential for herbicides, pesticides, fertilizers and sediments from tilled fields to contaminate surface waters as runoff, or be carried by winds onto adjoining properties, or contaminate aquifers. On the other hand, when these crops are replacing traditional row crops such as corn, they can dramatically reduce environmental impacts and increase wildlife habitat. Given that the first working objective is to improve New York’s environment and public health, RETEC suggests that these fuels only be considered eligible for the renewable portfolio standard if they are produced in such a way as to minimize potential adverse environmental impacts. One way to accomplish this would be to require that any agricultural crop used as fuel come from farms operated under an Agricultural Environmental Management Plan, incorporating integrated pest management and developed under the aegis of New York State Department of Agriculture and Markets Agricultural Environmental Management Program.

On the use of treated biomass resources, the potential for the combustion of treated material to result in toxic air emissions and toxic ash is a major concern for many

of the member organizations of RETEC. While testing of materials, combustion emissions, and ash are essential steps, the tests are generally done infrequently and under less than ideal conditions. For a general test process to be acceptable there must be regular and random sampling done in proportion to the amount of material accepted and under the supervision of an independent monitor. Emissions must also be regularly tested during both upset and normal operations. Ash residues should be managed in a manner that is consistent with New York State's waste management laws (NYCRR 6 Part 360).

The working group report suggests that New York State Department of Environmental Conservation Alternative Fuels Policy (known as DAR-3) may provide a viable framework for a process for determining acceptable treated materials.⁶ We have not had a chance to review the policy in detail, but it is our understanding that DAR-3 would need significant augmentation to serve as an acceptable testing protocol. In the absence of such a testing protocol, we suggest simply prohibiting the combustion of painted, treated or pressurized wood or woods contaminated with plastic or metals. However, we look forward to working with the working group to develop a testing method, a list of prohibited materials, or a combination of the two approaches. RETEC remains unconvinced that the direct combustion of treated wood is ever appropriate in heavily populated areas.

RETEC's proposed emissions standards for biomass facilities participating in the RPS are based on the principle that eligible resources should be as clean as they can possibly be and should be subject to progressively stricter standards that will eventually assure that they are cleaner than the best available fossil-fuel alternative. The fact that the

⁶ The Division of Air Resources Alternative Fuels policy guidance can be found at: <ftp://www.dec.state.ny.us/dar/library/dars/dar3.pdf>.

standards become stricter over time will force adoption of better combustion methods and more effective tailpipe controls. RETEC commends the Biomass Working Group and the biomass industry advocates for agreeing to stringent NO_x limits for marginal or moderate non-attainment regions. The only issue related to emissions standards where consensus was not reached within the working group process was on the standards for severe non-attainment areas. RETEC recognizes that the standards that it has proposed (summarized in the Biomass Working Group Final Report) are currently financially prohibitive to most combustion-based biomass resources. However given the extreme sensitivity of severe non-attainment areas to new sources, RPS eligible resources located in these areas simply have to be held to a higher standard. Furthermore, gasification-based processes should become viable options before 2013 with the incentive provided by the RPS.

The working group's requirements for the use of gas from anaerobic digestion of manure produced on Concentrated Animal Feeding Operations (CAFOs) are essentially that they be in compliance with New York law. CAFOs operate under a general permit in New York State. This general permit satisfies the requirements of New York's SPDES program. The most critical component of this permit is an Agricultural Waste Management plan, which in New York must be prepared by a certified planner pursuant to guidelines set forth in New York State regulation. The plan is certified by the DEC, but is not kept in DEC possession. So, unlike any other SPDES permit in the state, these plans are not subject to public review. Management of animal wastes at CAFOs has the potential to contaminate aquifers and surface waters. In addition CAFOs can be a substantial source of nuisance odors. Well designed anaerobic digestion systems have the potential to reduce the risk of water pollution and odors, but under the current permit

process it is impossible for the public to know if new systems are an improvement. For these reasons RETEC recommends that an affidavit attesting to compliance with a DEC approved waste management plan and a copy of the plan itself be kept on record at the PSC and available to the public for all animal waste being used to generate electricity for the RPS.⁷

5. Fuel Cells

While RETEC strongly prefers that only technologies that rely on renewable resources be included, we also recognize that some resources must go through a development phase before they can reach full sustainability. To this end, we support the inclusion of non-combustion resources that currently use fossil fuels but are expected to rely predominantly on renewable fuels as the technology develops. Fuel cells are the only technology that we are aware of today that meets these criteria. Fuel cells intend to be an essential part of a sustainable energy future in which they will be run by renewably derived hydrogen. Unfortunately, this transition is going to take until well beyond 2013. Therefore, RETEC supports the eligibility of fuel cells powered by of natural gas products and, of course, any renewably derived gas, through 2013.

A fuel cell is an electrochemical device that combines hydrogen and oxygen to create electricity, heat and water. Because the conversion of hydrogen occurs without combustion, fuel cells do not produce the emissions normally associated with combustion, such as oxides of nitrogen, carbon monoxide, and particulates. In the long

⁷ Please note that the Sierra Club is submitting independent comments on the issue of CAFO waste eligibility.

term, fuel cells offer the promise of being a pollution-free method of converting hydrogen into electricity and heat in a wide range of applications both stationary and mobile.

Hydrogen is not readily available in most locations. For this reason, fuel cells at this time must convert hydrocarbons into hydrogen through a reformation process. Any greenhouse gas emissions produced by a fuel cell are associated with the conversion of hydrocarbons into hydrogen, which is a function of the fuel reformation process and not a function of the fuel cell itself. Small fuel cells require a pre-reformation process. Larger fuel cells operating at high temperatures may be able reform hydrocarbons within the fuel cell itself. Because the reformation process is relatively expensive and technically complex, the use of hydrocarbons is seen as a temporary expedient in the long-term development of fuel cells.

The U.S. Dept of Energy's report entitled "A National Vision of America's Transition to a Hydrogen Economy" (February 2002 http://www.eere.energy.gov/hydrogenandfuelcells/pdfs/vision_doc.pdf) identifies a "chicken-and-egg" problem (page iii) involving the need to develop hydrogen conversion technologies – such as fuel cells – and a hydrogen delivery system simultaneously, when each relies on the other for its commercial viability. Developing conversion technologies such as fuel cells will build demand for hydrogen production and delivery systems. Because fuel cells will play an integral role in a future hydrogen economy, it is imperative to develop the conversion technology in order to break through the "chicken-and-egg" dilemma. For additional analysis of efforts to establish a bridge to a hydrogen energy economy, refer to "Fuel Cells and Hydrogen: The Path Forward" (February 2003 www.fuelcellpath.org).

Recognizing that fuel cells represent a bridge toward a hydrogen-driven energy system, Governor Pataki in his Executive Order No. 111 included fuel cells within the list of “renewable sources.” Other states, including Connecticut, New Jersey, Maine, and New Mexico, have included fuel cells (using all fuels) as eligible technologies within their Renewable Portfolio Standard requirements.

For these reasons, RETEC supports the inclusion of fuel cells in the RPS, including fuel cells using natural gas and similar products as a “bridge” technology toward a future in which fuel cells will have access to pure hydrogen.

If as RETEC has proposed, new and higher requirements are periodically considered after 2013, the Commission should evaluate the availability of renewably derived hydrogen and consider implementing a renewable gas requirement for fuel cells.

6. Solar

RETEC supports the inclusion of solar power in the RPS. To our knowledge, there is consensus among all parties on this issue.

7. Tidal

RETEC supports the inclusion of tidal power in the RPS. To our knowledge, there is consensus among all parties on this issue.

8. Wind

RETEC supports the inclusion of wind power in the RPS. To our knowledge, there is consensus among all parties on this issue.

9. Other

Other parties have suggested a wide range of additional energy resources should be eligible for inclusion in the RPS. Some of these suggestions, such as coal power and nuclear plants, simply make no sense because of their obvious environmental impacts.⁸ Other suggestions are for energy resources such as energy efficiency and combined heat and power (“CHP”) that have many positive environmental attributes but should not be included in the RPS because they simply are not renewable energy resources. Those based on fossil fuel combustion are simply not sustainable. They hold no promise of a transition to a renewable feedstock and most of them need no public subsidy to operate. While Combined Heat and Power (“CHP”) can greatly increase the efficiency of fossil fuel use, it is still inherently a fossil fuel technology. CHP is certainly deserving of policy measures to encourage its greater use, but the RPS is not the right policy vehicle. Inclusion of CHP in the RPS would dilute the impact of the RPS on truly sustainable renewable resources and would greatly undermine the public’s acceptance of the policy.

Likewise, although energy efficiency is deserving of policy support and is funded through New York’s System Benefits Charge, the RPS is simply not the right policy tool for further support. Energy efficiency is a prerequisite for sustainability and by avoiding

⁸ Nuclear power cannot be characterized as renewable because it utilizes uranium, which is nonrenewable, and has a series of adverse environmental impacts. See e.g. <http://www.epa.gov/cleanenergy/nuc.htm> (stating that “[u]ranium is a nonrenewable resource that cannot be replenished on a human time scale” and listing water, air and land contamination impacts of nuclear power). Both the Better Business Bureau and the Federal Trade Commission have found that advertising claims that nuclear power is “clean” and “green” are unsubstantiated. See Better Business National Advertising Division, NAD Case Reports #3508 PCM, Vol. 28 No. 8 (November 1998); Better Business Bureau National Advertising Division, Referral to Government Agency (May 13, 1999); F.T.C. Decides Not to Ban Nuclear Ads But Finds Claims Are Unsubstantiated, N.Y. Times (Dec. 12, 1999). While coal gasification technology has potential for environmental benefits as compared to coal combustion, the extraction of coal will continue to have adverse environmental impacts.

the need for power plants—renewable or otherwise—efficiency can be even better for the environment. Indeed Staff’s cost study mistakenly concludes that efficiency done outside of the context of the RPS is not a cost-effective way to reduce the costs of the RPS. Staff argues that when efficiency measures are taken outside of the RPS, each kWh avoided through efficiency would only avoid 0.25 kWh of an RPS requirement. However, there are many energy efficiency measures that are cost effective in the absence of an RPS. The fact that there is a reduction in the RPS requirement, even if less than a one-to-one ratio, simply makes efficiency a bit more effective. Efficiency is not, however, a renewable resource and should not be eligible for RPS credit.

All of RETEC’s members support policies to promote energy efficiency. That said, New York needs all of the new renewables that the RPS will drive. Including them both in the RPS will simply pit these two essential resources against each other for a small sliver of the pie.

10. Customer-Sited

As discussed above, RETEC believes that once a resource is eligible, it should be eligible wherever it is connected to the grid including behind a customer’s meter or a wholesale meter. In other words, RPS eligibility should be neutral as to the point of interconnection.

It is very important that the renewable attributes of distributed generation be accounted for in the RPS. The goal of the RPS is to increase the percentage of renewable energy produced and consumed in New York. From this standpoint, the fact that energy is generated and consumed behind the meter, instead of being transported from generator to customer, is irrelevant. In either event, the amount of renewable energy is increased

and conventional generation sources are displaced. Moreover, on-site renewable generation offers the added benefit of avoiding line losses due to transporting electricity over long distances on the power grid. Avoided line loss – up to 15% - translates into even greater amounts of displaced conventional, polluting generation and more renewable power generation directly available for customer use.

Recent revelations as to the vulnerability of the bulk transmission network make it all the more imperative for the State to develop distributed generation resources. Customer-sited generation will reduce pressure on existing transmission systems and reduce the need for ratepayer investments in new transmission facilities. A decentralized system makes electric generation and distribution less vulnerable to catastrophic events, and provides added security and reliability to customers with premium, uninterruptible power needs.

Obtaining a reliable measurement of the output of DG units is not an obstacle to including them in the RPS. Larger units can be equipped with output meters to provide any information that is needed. For smaller units, individual metering may not be economical in most cases. However, it is not difficult to estimate the output of smaller units, and any inverter-based system is equipped with output monitoring that can be used to verify the assumptions that have been made. A representative group of small units can be regularly sampled to confirm the estimated output of all small units.

The RECs associated with onsite power generation can easily be managed in the same manner as other power produced under the RPS. Data Acquisition Systems (DAS) installed to measure on-site system output can collect and report electric generation electronically and continuously to the same entity that gathers data regarding wholesale

power production. The Commission can simply require that this generation output data be provided to the ISO or other entity on a timely basis in compliance with the any REC trading system. For small systems, output can be reliably estimated and the output of individual units need not be measured, other than possibly through sampling. In the case of PV, the National Renewable Energy Laboratory (NREL) has developed well-documented and conservative software for accomplishing this. In the case of small fuel cells, output can easily be estimated based on the preset output levels of the units, as explained further in the separately filed comments of Plug Power.

Other states have included behind-the-meter production within the structure of an RPS. Massachusetts for example, in Section 14.05 (1)(d) and (4) of its RPS rules (225 CMR 14.00), specifically provides for the inclusion of customer-sited units. Massachusetts provides that a unit may participate if it “can verify its electrical energy output in a manner satisfactory to the Division.” New Jersey states that behind-the-meter resources are available, “provided that the generators or customer-generators or their agents document the level of generation, as recorded by appropriate metering and power sales, on an annual basis;” in its RPS sections 14:4-8.4 (e) 1 and 2. The Texas PUC ruling states “A facility is not ineligible by virtue of the fact that the facility is a generation-offset, off-grid, or on-site distributed renewable facility if it otherwise meets the requirements of this section...[PUC 25.173].” Nevada’s PUC docket states that eligible RPS power includes that which is “(5) Fed back to the provider from net metering systems used by customer-generators...[PUC Docket 01-7029]”, while Arizona goes a step further, allowing that “Eligible customer premises locations will include both grid-connected and remote, non-grid-connected locations.”

D. Tiers

1. No Tiers

RETEC opposes the use of tiers within a renewable portfolio standard for New York, but in order to comply with the outline provided by the Administrative Law Judge, we have included our proposed incentives in this section. We advocate special incentives for emerging technologies and otherwise eligible technologies located in high-value locations. We do not consider these “tiers” because we are not differentiating between technologies based on how they contribute to the working objectives of the RPS proceeding. In other words, RETEC does not support policies based on “shades of green.” Resources are either eligible or they are not. The emerging technology incentive provides the additional support needed to make certain of the eligible resources competitive over time with other RPS-eligible renewable resources. The high-value location incentive is a means of improving air quality and relieving transmission congestion.

2. Emerging Technologies

a) The RPS should contain an incentive for emerging technologies

The goal of the RPS is to encourage the development of a clean, diverse and secure electricity supply for New York. In order to achieve this goal, the RPS may need to provide financial incentives to renewable generation providers.

For the same reasons, the RPS should provide additional financial incentives to customer-sited renewable technologies that are rapidly developing toward commercial competitiveness, but require a sustained State commitment to ensure they play a

meaningful role in the New York RPS. These emerging technologies – photovoltaics, fuel cells, and small wind – offer the immediate benefit of reduced customer demand and associated grid relief, and the long-range prospect of greater electric generation diversity and security.

Photovoltaics and fuel cells offer diversity in energy sources and in times of availability. Both technologies provide maximum output during peak times. Availability at peak increases the environmental value of the technologies because it reduces the need for high-emission peaking units and emergency generators. Peak availability also reduces ratepayer costs for more expensive utility-generated peak electricity. Fuel cells, although temporarily fueled by natural gas, in the long term will provide fuel diversity by using hydrogen derived from renewable sources such as wind and hydro during off-peak times. Depending on the fuel cell technology and the type of customer, they may be configured to run baseload or to follow customer load. Photovoltaics rely on light from the sun and are therefore naturally peaking in that they provide maximum power generation during peak demand periods. Because photovoltaic generation is a zero-emission, on-peak power producer, and fuel cells may use fuel produced during off-peak hours, these generation types are the ideal complement to intermittent technologies such as large-scale wind and run-of-the-river hydro.

- b) The emerging technologies incentive should be weighted toward the earlier years of the RPS

Photovoltaics, fuel cells and small wind are technologies that can be installed quickly, without substantial lead times. Because their size is relatively small and they do not require additional transmission or distribution line upgrades, the project development

period from order to delivery is measured in weeks or months, not years. Also, PV and fuel cells tend to experience no siting delays and are subject to few if any permitting requirements.

Technologies that can be installed without lead times are at a premium during the early years of the RPS for two reasons. First, these on-site technologies will perform an important role in meeting the RPS requirement in the early years during which larger projects with longer lead times will not yet be fully installed and permitted. Second, they will provide immediate assistance in reducing pressure on transmission systems in New York and the Northeast region. Distributed technologies do not rely on existing or new transmission lines. To the contrary, they will help to reduce pressure on the existing transmission system by reducing customer demand and ensuring a secure, regional power supply at the point of demand.

For these reasons, RETEC suggests that the incentives for emerging technologies should be designed to result in generation capacity additions during the first five years of the RPS, beginning in 2005.

- c) Emerging technologies should be funded at levels that will fulfill the purposes of the emerging technologies incentive

The incentives proposed by Staff are inadequate to achieve the purposes of an emerging technologies incentive. The assumption in Staff's Cost Study is that emerging technologies will contribute only one percent of the RPS increment in 2013, equivalent to less than one tenth of one percent of statewide electric generation. In order to obtain the diversity benefits of emerging technologies, a portion of the RPS much larger than one percent must be reserved for PV, fuel cells and small wind. Moreover, the staff proposal

will not provide the needed market incentives to attract new corporate investment that will help stabilize the State of New York's energy system through diverse renewable power generation.

RETEC proposes that a sum of \$70 million be allocated each year, from 2005 through 2009, to the emerging technology account. \$60 million would be allocated evenly between PV and fuel cells, with \$10 million allocated to small wind; provided that in any year in which the allocation for one technology is undersubscribed, all or part of the balance may be reallocated to another technology if that fund is oversubscribed in the same year.

d) Structure of the Incentive During Years 2005-2010

The incentive would be delivered through a capacity-based buydown program. For PV up to 2 MW and for wind projects of 250 kW or less, the buydown would be administered on a dollars-per-watt basis, available on an annual basis until fully subscribed. The buydown incentive would be fixed at a level below the capital costs estimated by Staff, as detailed below. In this manner, although the price of the buydown is fixed, the process remains competitive. Because the buydown does not represent the entire cost of the equipment, developers will still need to compete for customers and will have a strong incentive to reduce costs. The buydown price may be adjusted annually to reflect steady reduction in global cost trends.

For PV, funds should be offered as a direct customer rebate on a *dollars per watt* basis. To reflect increasing economies of scale, customer rebates should be tiered to offer lower rebate amounts as PV system size increases. Specifically, we recommend the New York RPS initially offer: \$5.50/watt for individual systems of up to 10 kW; \$4.00/watt

for 10 kW to 100 kW; and \$3.75/watt for 100 kW to 2 MW. Moreover, the dollar per watt rebate amount should decline by 5% per year, beginning in 2005, to reflect declining PV costs over time. Sustained overall funding will result in increased total installed MWs over time.

For small wind, funds should also be offered as a direct customer rebate on a *dollars per watt* basis. To reflect increasing economies of scale, customer rebates should be tiered to offer lower rebates as small wind system size increases. Specifically, we recommend the New York RPS offer: \$3.00/watt for wind turbines of up to 10 kW; \$2.00/watt for those from 11-50kW; \$1.50/watt for 51-80kW; and \$1.25/watt for 81-250 kW. By ending the dollars-per-watt buydown program at 250kW systems, we are assuming that under a Central Procurement option, the State Agency would conduct an RFP for wind systems of 251 – 1000 kW or otherwise ensure their ability to participate in the RPS (since these turbine sizes are not likely to be competitive with wind farms of larger, utility-scale turbines). In the absence of an explicit commitment to including such wind systems in the Central Procurement process, RETEC advocates support for these turbines through a buydown with rates set through an auction process. Reasonable caps on bid prices would be established.

For fuel cells, costs are more difficult to estimate. For this reason, the fuel cell buydown price would be established through an auction process, rather than a standard offer, for all projects larger than 50 kW. Reasonable caps on bid prices would be established, which would reflect size differentiations. It is estimated that a premium of \$3/watt would be required in 2006, declining each year by a factor of 5-10%.

Within each technology category, there would be a target of at least 20% for units installed on premises of small (non-demand-billed) customers. For these fuel cell customers, rather than an auction process a standard offer would be established.

The emerging technologies incentive would be designed to promote the commercialization of generation equipment that has already been proven in the field. It will not be used as a research and development program. For this reason, eligibility criteria would be established, restricting participation to equipment that has operated successfully for twelve months. As an alternative, strict performance milestones could be put into place, such as New Jersey's rule that units must be fully installed within 6-12 months of being awarded.

In order to ensure that the incentive is not applied to obsolete equipment, only new construction would be eligible to participate. "New construction" would be defined as projects that are not installed prior to the award date and that have been fully manufactured less than two years prior to the award date.

It is estimated that the energy contribution of the emerging technologies would be approximately 3% of the RPS increment in the first year of the program, increasing proportionately each year as the per-watt incentive declines and more capacity per-dollar is purchased. This figure assumes a capacity factor of 70% for fuel cells, reflecting a blend of baseload and load-following units. These energy numbers do not reflect reductions in line losses, reliability values of peak generation, and other benefits of distributed resources.

The precise structure of the emerging technologies incentive will depend on which procurement model the Commission selects. The structure described above would

fit within a central procurement or a hybrid central procurement model. If a straightforward individual procurement model is adopted, then the emerging technologies incentive would take the form of a set-aside requirement—as described in the next section below—that would begin during the first year of the program rather than in 2010.

e) Structure of the Incentive During Years 2010 and Following

Beginning in 2010, the capacity buydown program would be replaced by a set-aside requirement within the RPS. For each technology, a separate ACM price cap would be established, reflecting prevailing market prices for the technology. The price cap would be adjusted each year to reflect changes in technology costs.

Folding emerging technologies into the overall fabric of the RPS would of course require that their output be measured and verified, as mentioned above. Since doing so is critical to the stability of the emerging technologies market in the years after 2013 and monitoring and verification technologies are expected to become even simpler and more reliable over the next several years, we recommend that the PSC begin to contemplate and develop this system immediately.

3. High Value Locations

The RPS should include incentives to locate renewable resources in areas where they will produce maximum benefits. Of the benefits of the RPS, the one that is most location-specific is the air quality benefit. Non-polluting renewable generation should be located, to the maximum extent possible, within non-attainment areas. On-site renewable generation also offers key benefits in grid-constrained areas, or areas experiencing measurable peak supply shortages.

RETEC favors the development of a REC trading system. The use of unbundled energy and renewable attributes ensures that renewable generation can be built where most feasible and economic. This reduces costs to the ratepayer, which can therefore be shared via competitive procurement for renewable attributes. The amount of power that can be imported into the downstate area is limited. However, achieving localized air quality benefits will require locating renewable resources within the downstate area in order to displace local generation from heavily-polluting, non-renewable sources. For this reason, RETEC proposes that REC trading be complemented by an incentive to encourage location of clean resources within areas that are in non-attainment for ozone, particulates, and/or carbon monoxide.

Another location-specific benefit of the RPS is the development of renewable distributed generation resources within load pockets and within areas where distribution investments are needed. For larger units, Location-Based Marginal Pricing may provide this incentive independent of the RPS. For small DG units that do not yet have access to wholesale markets, however, there is presently no way to account for the system benefits provided by DG units that relieve pressure on transmission and distribution systems. A standard REC multiplier for distributed generation resources could be used to capture the distributed benefits of on-site generation and provide the needed financial incentives to spur this market sector.

Finally, a high-value location incentive will also serve environmental justice values by ensuring that renewable resources will be placed in urban locations, including New York City, with high concentrations of low-income people of color, helping to

offset the need to locate the fossil-fuel generation facilities that are often located in these neighborhoods.

Please see Appendices A and B for details of our proposed High Value Location Incentives.

4. Resource Criteria Tier

RETEC does not support policies based on “shades of green.” Resources are either eligible or they are not. We do not support a tier system founded on desirability of resources based on scales of emissions or other such criteria. Expanding the RPS to include every technology that is environmentally preferable to traditional electric generation will undermine the policies fundamental goal of driving a sustained orderly development of a renewable energy market. Furthermore it will undermine public acceptance of the program, risking all of the benefits the policy has to offer. Only new renewable, sustainable resources should be eligible.

5. Maintenance Tier

As discussed above under C.1.General Requirements, including all existing renewables by giving them credit (through a premium payment) toward meeting the RPS’s 25% target is illogical and inconsistent with the goals of the RPS. The focus on new resources will help minimize the cost of implementing the RPS by avoiding paying a premium for projects that were constructed and financed without expectation of any renewable credit market.

6. Other

RETEC does not support any other tier proposal.

VI. Overall RPS Structure

A. Preferred Structure—Central or Individual Procurement

RETEC has offered two models for an RPS: an Individual Procurement Model and a Central Procurement Model (named Hybrid Procurement Model as it includes an option for LSEs to choose individual procurement). RETEC prefers an Individual Compliance Model for reasons discussed below. However, if the Commission determines a centralized procurement process is in the best interests of New York at this time, RETEC would support this decision in so far as the chosen mechanisms for implementation follow those identified in our Hybrid Procurement Model, also discussed below.

The RETEC Individual Procurement Model was previously distributed to the active party list and is included with these comments as Appendix A. Individual Procurement is preferred because it is administratively less burdensome on the State, is truly a market-based policy with multiple buyers and sellers, allows for the greatest flexibility in implementation for both renewable generators and load serving entities required to comply with the policy, and it has an established track record. Central Procurement, on the other hand, is a new concept whereby New York would essentially be developing a model from scratch, it requires the establishment of an entirely new role for a State Agency, and it limits the ability of participants to respond in innovative and flexible ways to market forces rather than artificially constraining them.

Individual Procurement allows for greater flexibility and increased competition among buyers and sellers, specifically via bilateral contracts. Under the Central Procurement Model, generators will be forced to sell their energy into the spot market

and, in the absence of LSEs using the individual option, may not have bilateral contracts for their energy production. Evidence of the benefits of wind energy as a hedge against natural gas prices is increasing.⁹ Under an Individual Procurement Model, LSEs as well as large industrial consumers could enter into bilateral contracts for renewable energy, which can provide a stable fuel price as a hedge against the uncertainty of volatile fossil fuel prices. Currently, more than 30 of the largest businesses in Austin, TX subscribe to a green energy choice program allowing them to reap the benefits of renewable energy including the fixed fuel prices provided by the 10-year contracts with renewable generators entered into by Austin Energy, the local utility.¹⁰ Individual procurement can also accommodate RECs generated by distributed generation sources, and RETEC's support of an individual procurement model is conditioned on the inclusion of RECs generated behind the meter.

B. Individual Procurement

Please see the model in Appendix A for details, and RETEC's original comment submission for supporting justifications. The comments below are confined to issues raised in Judge Stein's Summary of Working Group Discussions (sent to active parties on June 25, 2003 and hereafter referred to as Summary) upon which active parties were specifically requested to comment.

⁹ *Quantifying the Value that Wind Power Provides as a Hedge Against Volatile Natural Gas Prices*, M. Bolinger, R. Wisser, and W. Golove. June 2002. <http://eetd.lbl.gov/ea/EMS/reports/50484.pdf>.

Accounting for Fuel Price Risk: Using Forward Natural Gas Prices Instead of Gas price Forecasts to Compare Renewable to Natural Gas-Fired Generation, M. Bolinger, R. Wisser, and W. Golove. August 2003. <http://eetd.lbl.gov/ea/EMS/reports/53587.pdf>

¹⁰ http://www.eere.energy.gov/greenpower/gp_munipu.html#austin

1. Determination of Participating Entities

We concur with the Summary's depiction of a consensus on participating entities. In other words, we feel strongly that the costs and benefits of an RPS should be spread fairly across all regions and all customer classes. Therefore, all load serving entities (LSEs) should participate. ESCOs must now compete for market share by offering better or more stable rates and/or distinguishing themselves from competitors on another basis. A well-designed RPS would not impede this market process. On the contrary, how an ESCO chooses to comply with the RPS may well serve to provide another marketing tool. Compliance flexibility provided via an attribute tracking and trading system with realistic banking and true-up periods will allow ESCOs to participate directly in the market for renewable energy without adverse economic impacts (also, see Contracting Standards below).

2. Adjustment of Targets

RETEC believes it is essential for all retail loads to participate in the RPS and strongly encourages the voluntary participation of LIPA and NYPA. Acknowledging the PSC's lack of jurisdiction over LIPA and NYPA, however, RETEC concurs with the suggestion on adjustment of targets if these entities decline to participate.

3. Determination of Individual Entity Target Levels

RETEC agrees in principle with the consensus position cited in the Summary on page 6 but with the caveat that the word "target" should be replaced by the word "requirement" to clarify that the RPS percentage should be an enforceable requirement for the provision of new renewable generation. The *target* is the 25% goal for the State

overall, while the ramp-up in individual load serving entity obligation discussed in this section of the Summary should refer to the percentage *requirement* for new generation needed to meet that goal.

4. Alternative Compliance Mechanism

As put forth in our model, an alternative compliance mechanism is a fundamental component of an RPS. Alternative compliance options can be used for two purposes. They can serve as a cost cap for when renewable generation is not available in sufficient quantity at given prices. They also can serve as a penalty for not procuring renewable generation. We advocate an Alternative Compliance Mechanism (ACM) used primarily as a price cap. In other words, if no renewable generation is available at a given price, the LSE may pay the ACM instead of showing ownership and retirement of RECs. The amounts in the straw proposal and the Summary of Work Group Discussions, \$50/MWh or 150% of the REC price, appear appropriate but could be adjusted by the Commission. In particular they should be adjusted upward if it appears that LSEs are using the mechanism to simply avoid signing more long-term contracts.

The dollar amount must be set high enough to encourage compliance through procurement of renewable energy via least cost paths such as long term contracts. Furthermore, if specific targets are set for emerging technologies, then technology specific ACM prices must be established to make these targets meaningful. By definition these renewable technologies need additional incentives and unless appropriate ACM prices are set, the RPS will simply fail to promote these technologies.

However this mechanism does ensure a compliance option in the unlikely case of insufficient availability of RECs in the early years of the program. Any funds collected

must go directly toward encouraging renewable generation to support the full functioning of the REC market.

If no attempt has been made to procure renewables in a least cost way, including consideration of long-term contracts, use of the Alternative Compliance Mechanism by an LSE should not be considered prudent. Requiring long-term contracts for a portion of the RPS requirement would reduce the risk of LSEs paying a higher ACM price to simply avoid long-term contracts.

5. Enforcement Mechanism

If there is agreement that the Commission will use its inherent statutory penalty authority to enforce the RPS requirements against LSEs who fail to either meet their RPS requirement or pay the alternative compliance fees, and that agreement is reflected in the Commission's ultimate order, further penalty provisions need not be included.

6. Cost Recovery for Compliance by Delivery Utilities

RETEC agrees with the Summary's statement on cost recovery. As RETEC has stated previously, we support cost recovery by utilities subject to PSC prudence review where prudence is defined in terms of both least long-term cost and achieving the goals of the RPS including the construction of new renewable generation financed through long term contracts. These regulatory prudence determinations must be as contemporaneous as possible with the responsible entities entering into the contract.

C. Central Procurement

1. Preferred Central Procurement Entity

Please see Appendix B for RETEC's model for implementation of an RPS using Central Procurement. RETEC only supports Central Procurement if it is conducted by NYSERDA. We do not support Central Procurement by the NYISO or any other, as yet unspecified, State entity.

RETEC believes the NYISO is not the appropriate administrator of a state RPS because it is not directly within the State's jurisdiction. Central Procurement by the ISO would necessitate changes in ISO governance and tariffs requiring ISO board and FERC approvals. Implementation of the RPS is being done by the Commission and should not be subject to differing interpretations by outside parties.

RETEC believes NYSERDA is the most appropriate entity to engage in centralized procurement of new renewable generation. NYSERDA is a State Agency accustomed to working with State mandated policies and with the PSC. It has an excellent history and substantial experience in working with and supporting renewable energy. RETEC could support the Central Procurement model with NYSERDA as the procuring State Agency as outlined in the RETEC Hybrid Procurement Model. RETEC believes that even if the RPS is implemented initially via central procurement by a State Agency, the option of individual procurement by load-serving entities should be preserved and the Commission should revisit the procurement option (individual versus centralized) question again in 2009.

In addition, our Hybrid model includes an alternative proposal whereby 50% of the RPS requirement for any given year would be contracted for by a Central

Procurement process with long-term contracts and 50% would be an obligation for individual procurement by load-serving entities without any specific contracting requirement. This would relax the burden of procurement for the LSEs while encouraging innovative market-based solutions to fulfillment of the RPS requirement.

2. The ISO Procurement Model

RETEC opposes the ISO Procurement Model for the reasons stated above.

3. The State Agency Procurement Model

RETEC could support a State Agency Procurement model where the implementing State Agency is NYSERDA and where such a model follows the provisions outlined in our Hybrid Model in Appendix B. RETEC supports environmental disclosure and labeling for electric power. However, RETEC does not agree that State Agency implementation of centralized procurement must be compatible with conversion transactions since there are renewable attribute/certificate trading and tracking systems available that could be used for both an RPS and environmental disclosure. That said, there is no apparent reason why centralized procurement by a State Agency would not be compatible with the current system used for disclosure; we are simply arguing that compatibility with conversion transactions should not be a requirement or constraining feature when deciding upon RPS implementation provisions.

VII. Credit Trading

A. Consensus Issues

RETEC believes a certificates-based accounting and verification system for tracking and verification of renewable generation and the associated renewable energy

credits (RECs) is needed. RECs are created simultaneously with the energy produced by an eligible generator (based on actual output, not capacity). The energy and renewable attributes of an eligible generator may be unbundled, and the energy and the renewable attribute may be sold, traded, or transferred separately. This encourages flexibility in contracting in the renewable generation industry, and encourages least-cost compliance. A certificate trading system also will allow for the future possibility of a regionally integrated system and prevents double counting of renewable generation attributes. Double counting undermines the program and undermines consumer confidence in the RPS and the green market. The system can also effectively support environmental disclosure and labeling.

1. Establishment of a New York-based Credit Trading System

RETEC agrees with the Work Group consensus that development of such a system for New York need not wait until a regional system is in place nor should implementation of an RPS wait until these issues are resolved. It is, however, essential to the smooth development of the renewable energy market to address these issues in as timely a manner as possible.

In addition, RETEC strongly urges New York to take this opportunity to acknowledge the growing importance of a regional approach to environmental and energy issues. The system put into place to support the RPS should be developed in such a manner so as to facilitate future integration with neighboring States and Provinces. There is a clear trend towards certificate tracking and trading systems similar to the system used in New England and being contemplated by PJM and Ontario. New York's

energy market is inextricably bound to those of our neighboring ISOs as is the quality of our air and water resources.

2. Establishment of an implementation track

RETEC cannot entirely agree to the supposed-consensus expressed in the Summary of Work Group Discussions. RETEC does agree, as stated above, that implementation of an RPS should proceed without waiting for resolution of the attribute tracking and trading system issues, but we do not agree that the current system of conversion transactions should necessarily remain (after resolution of the ultimate trading system), as implied by the text of the Summary. Second, it is unreasonable to state that New York should move ahead and design a system compatible with neighboring systems when what constitutes compatibility is central to the debate. There are those who argue that New York's current system of conversion transactions is compatible as is, while others declare that not to be the case. Achieving compatibility will require dialogue among jurisdictions.

Third, the Summary declares there was consensus on allowing imports into New York and that New York appears likely to be a net importer. The consensus on allowing imports only holds as a general statement. There continues to be disagreement on where such imports should be allowed to originate as well as under what conditions imports will be allowed. In addition, there is not consensus on whether or not New York will be a net importer of renewable generation. Whether or not New York is a net importer or exporter of renewable energy depends on future market conditions, which will be the result of the final RPS eligibility criteria and the final RPS rules (which will determine the extent to which New York's internal renewable resources are developed). Finally, "deliverability"

(or perhaps more accurately, delivery) may not always impose the same geographical limitations as it does today.

Finally, RETEC cautions the Commission that too much delay in resolving the tracking and trading issues may cause concern among renewable generators and their investment partners and thereby impede rapid development of new renewable generation. Clear market signals, including clear signals on how renewable attributes will be handled, are needed as soon as possible. We strongly urge the Commission to commit to implementing an attribute trading system in New York whereby renewable energy certificates and energy are completely unbundled and can be treated independently in spot market transactions and through bilateral contracting.

RETEC would be happy to participate in a separate Work Group Four procedural track to resolve these issues and develop recommendations for a New York trading system, building upon comments submitted during this proceeding and insights gained from NYSERDA's REACTS reports and other resources.

B. Deliverability Issue

The working objectives for this PSC proceeding include consideration of equity, achievability, economic and environmental benefits, and energy security. In recognition that air quality does not correspond to political boundaries, electricity does not flow directly from specific generators to specific end-users, and the costs of achieving benefits also plays a role in decision-making, a regional approach to implementation of an RPS may best meet these objectives.

RETEC believes renewable attribute certificates from otherwise eligible new renewable generation located in an adjoining ISO which provides environmental benefits

to New York (including PJM as it was configured on January 1, 2003) could be used for compliance with the New York RPS (unbundled as in New York, i.e. without an electricity delivery requirement), provided that the State (or province) in question has a similar and reciprocal system to New York's (as determined by the Commission). A similar system would require a State policy for encouraging renewable generation and a compatible and verifiable tracking system for renewable attributes with reciprocity including full market access for generators located in New York, as well as other market criteria deemed relevant and important. In the absence of a similar system with reciprocity, renewable generation outside New York will not be eligible for the NY RPS. Both Connecticut and New Jersey are considering this type of reciprocity arrangement. Connecticut, in fact, in the recent revisions to the CT RPS explicitly adopted language that would make such transactions possible providing New York or the PJM states have a compatible system in place (an RPS and a certificates-based tracking system).

Requiring deliverability of energy unnecessarily increases transaction costs and runs counter the purpose of unbundling energy and attributes. Deliverability requirements may be appropriate, however, for those States within the region that do not have reciprocal policies to encourage renewable energy generation. In these instances, no delivery of energy could result in an untenable imbalance between those reaping the benefits of renewable generation and those paying the costs, as well as pose problems for appropriate environmental disclosure.

Clearly, public education efforts to explain environmental disclosure labels and attribute trading are necessary. However, broad support has been building for this approach to encouraging renewable generation. Public interest organizations, including

environmental and consumer groups, support the use of tradable renewable energy credits to satisfy renewable energy policies and to support marketing of green energy products.

If a deliverability requirement is imposed on out-of-State generators, RETEC believes a relaxed wholesale matching regime is appropriate.¹¹ Strict hourly matching and scheduling poses an unnecessary burden on intermittent renewable resources.

C. Other Open Issues

1. Accounting Issues

RETEC concurs with the accounting issues listed in the Summary on pages 10-11.

2. Administrative Issues

RETEC concurs with the administrative issues listed in the Summary on page 11.

3. Financial issues

RETEC concurs with the financial issues listed in the Summary on page 11.

4. Credibility Issues

RETEC concurs with the credibility issues listed in the Summary on page 11, providing the statement on banking and borrowing does not preclude the provisions necessary for system tracking of such transactions.

¹¹ *Transacting Generation Attributes Across Market Boundaries: Compatible Information Systems and the Treatment of Imports and Exports*, R. Grace and R. Wisner, Nov. 2002; <http://eetd.lbl.gov/ea/EMS/reports/51703.pdf>.

5. Banking and Borrowing

The RPS should include limited banking of renewable energy credits and a “true-up” period. RETEC’s proposal, for example, is for credits to be eligible when generated within six months prior and six months after an annual compliance period.

6. Compatibility with other jurisdictions

Compatibility with other jurisdictions should be the goal of the New York system, as discussed above.

VIII. Contracting Standards

A. The Role of Long-term Contracts

1. Necessary Durations for Developers

RETEC supports a requirement for long-term contracting for at least a portion of the new renewable generation required by the RPS. Long-term contracts must be required under either an Individual or Central/Hybrid Procurement Model. Under either Central Procurement or Individual Procurement, all contracts should be long-term with the exact length possibly determined on the basis of technology. A 20-year contract is appropriate for renewable technologies such as solar and wind energy. As noted above and in our Hybrid Procurement Model, RETEC offers an alternative where 50% of the RPS requirement is not subject to a long-term contracting requirement and the other 50% is procured via long-term contracting by a Central Procurement agency. This would provide the flexibility called for by LSE’s while still ensuring the procurement of mix of

resources to take full advantage of New York's renewable resources and achieve the goal of fuel source diversity.

Short-term energy procurement has been an obstacle to financing of new generation of all types. The problem is compounded for many renewable resource generators, which often have higher capital costs and lower operating costs than traditional fossil fuel generators. Long-term commitments are needed to provide confidence to investors. Without such a requirement, the State may not see the needed generation come on line, and either consumers will see higher prices than necessary or utilities will face unnecessary financial burdens from costs considered imprudent (because load-serving entities will be forced to rely on the Alternative Compliance Mechanism -- see above).

Without a long-term contract requirement, New York may find itself in the position of having load serving entities pay under the alternative compliance mechanism rather than contract to ensure the construction of new renewable generation. Since alternative compliance mechanism rates are set higher than the expected price for renewable attributes, costs of compliance will be higher than need be to achieve the State goal.

2. Financial Risk Management for Load-Serving Entities

Specific contract provisions can be included to minimize risk of non-performance. These should be part of contract negotiations.

Although we believe it will be unnecessary, RETEC supports having the PSC investigate the potential for a system to support contracting by small ESCOs if the PSC determines that such ESCOs in general are in an untenable competitive disadvantage in

long-term contracting for renewable generation vis-à-vis the regulated distribution utilities.

3. Proposal for Pilot or Interim Requirement for Early Long-Term Contracts

RETEC does not believe pilot or interim contract requirements are needed.

B. Establishment of Contracts

The contracting standards required vary depending on whether or not the RPS is implemented via individual or centralized procurement.

C. Individual Procurement

With an Individual Procurement Model, RETEC believes no additional contracting requirements are needed beyond the requirement for long-term contracts (with 20 year contracts being an appropriate length for wind and solar energy). The parties to the contracts can decide for themselves on the best provisions to protect their interests. Such parties have routinely engaged in contracting and they are in the best position to determine their required legal protections. In addition, existing contracts can be used as a starting point for negotiations. Of particular interest is an upcoming model contract being developed on behalf of AWEA and EEI. In recognition of the fact that EEI's Master Power Purchase and Sales Agreement is widely used as a model but is not ideal for contracts involving wind energy, the two organizations have agreed in principle to develop an alternative, and the process to do so is underway.

D. Central Procurement

Under Central Procurement, with “purchases” accomplished via a request for proposal or auction arrangement, set contract criteria will be needed in advance of the offering. Acknowledging the stated reluctance of NYSERDA¹² (as the only State Agency RETEC supports in this role) to purchase energy, Central Procurement must be done on a contract for differences basis (as outlined in our Hybrid Model) to provide confidence to investors. Without confidence in the revenue stream and a determination that State contracts are credit worthy and enforceable over the term of the contract, new renewable generation will not be built in New York via a Central Procurement Model. A contract for differences will provide investors with the fixed price they need, while allowing the State to procure renewable generation at a fair cost to generators and consumers. Consumers will pay no more than the actual premium above actual energy prices required to develop the new renewable generation. The contract for differences should be for the difference between the market-clearing price of the RFP and the actual price received by the generator for the energy delivered to the spot market and any capacity payments (averaged over a specified period of time). We believe an attributes-only contract requirement may not spur the investment needed to procure sufficient renewables to meet the RPS targets.

The Central Procurement model will require energy transactions to occur in the spot market. For these reason and others, RETEC supports the option for individual LSEs

¹² RETEC acknowledges that NYSERDA has not agreed to function as the Central Purchaser under the RPS; however, we are specific about the State Agency in our comments because we believe NYSERDA is the most appropriate agency to undertake this responsibility.

to chose to procure eligible renewable generation individually rather than utilize the central procurement mechanism.

E. Features of Bilateral Contracts

Please see discussion above regarding contracting standards under the different procurement proposals.

IX. Cost and Benefit Considerations

This proceeding has allowed ample opportunity for parties to raise issues of costs and benefits. On behalf of RETEC, Synapse Energy Economics has prepared two reports. The first, submitted on July 28, addresses the benefits not explicitly included in PSC staff analyses. The second Synapse report is attached here as Appendix G. Taken together they provide RETEC's response to the cost studies completed by the Joint Utilities and Staff.

In addition, RETEC would like to call attention to a recent report released jointly by ACEEE and Energy and Environmental Analysis, Inc., (Elliot et al, *Impacts of Energy Efficiency and Renewables on Natural Gas Markets*, September 7, 2003.

<http://www.aceee.org/energy/natgassummaryreport.pdf>). This report and a companion white paper explaining the methodology are attached here as Appendices H and I.

The ACEEE report is the first to use a detailed natural gas markets model that includes local storage and capacity constraints to assess the impacts of energy efficiency and renewables on the price of natural gas. In addition to a nationwide analysis of a variety of different scenarios, the report includes an analysis of an increase in renewables in New York of 2.8% between 2004 and 2008. (This is just slightly more than the RETEC sample interim target for 2008 and less than either Staff or the Joint Utilities

forecast for that year.) As a first step, the analysis finds a 19 billion cubic foot (Bcf) reduction in natural gas consumption from the electric sector in 2008. This is less than half the impact that the Joint Utilities forecast for 2006 and 2009.¹³ However, unlike the ICF natural gas supply curve that the Joint Utilities rely on, which is lumpy and therefore cannot detect any change in price resulting from small changes, the Energy and Environmental Analysis model can predict prices changes. Not only can the model predict price changes, but unlike the ICF natural gas model, which was not even run for the Joint Utilities study, it can factor in local constraints and predict how the natural gas prices will change across the country.

The lower consumption in the power sector reduces prices for all sectors, which in turn leads to increased consumption. When the model reaches equilibrium, electric sector demand is down by 19 Bcf and residential, commercial and industrial consumption is up by 10 Bcf, resulting in a 9 Bcf reduction in national demand. The table below summarizes the price effect in 2008 at four different major hubs around the U.S.

Gas Prices (in 2002 \$/MMBtu)	Change From EEA Base Case in 2008	
	Dollars	Percent
Henry Hub	-0.02	-0.50%
New York City	-0.07	-1.80%
New England	-0.03	-0.70%
Southern California	-0.01	-0.40%

These changes may seem small when viewed this way, but multiplied out across the all consumption in the U.S. the result is a tremendous savings to natural gas

¹³ Specifically, the Joint Utilities forecast a reduction of between 48 and 49 Bcf in 2006 and 44 and 53 Bcf in 2009. See Response to Joint Utilities response to RETEC, September 16. TBtu converted to Bcf assuming 1 cf equals 1030 Btu.

consumers. In New York alone, a 2.8% increase in renewables could save consumers approximately \$144 million in 2008 depending on how much of the reduction in price to the electric power sector is passed on to electric customers. The chart below breaks down these savings by consumer sector from 2005 to 2008. The savings from lower natural gas prices are greatest in New York due to the primary reduction in demand and the larger change in prices at the New York City hub, while an increase in renewables in New York will actually produce a national savings of more than twice that which occurs in New York alone. Nationally, the lower prices driven by new renewables in New York will save \$390 million in 2008.

While the model was only run through 2008, it is reasonable to expect that these savings would persist and that larger amounts of renewables would bring greater price reduction and thus greater savings. Furthermore, reduced demand should also bring greater price stability with supplies and expansion schedules less pressured.

These cost savings should be counted against those found in the cost studies. The first four years of savings are worth \$385 million in New York alone. Assuming that the savings increase with an increasing level of renewables, New York stands to save well over \$1 billion from reduced natural gas prices alone. Coupled with the public health savings and the potential jobs benefits discussed in Synapse's July 28th report, it is highly likely that the RPS will save more than it costs even between its start and 2013. When the long-term benefits of cleaner air, reduced risk of climate change, development of new industries and jobs, reduced fuel price risk and greater energy security are factored in, it seems clear that even under the Joint Utilities' worst case analysis the RPS would still be a good investment and good policy for New York.

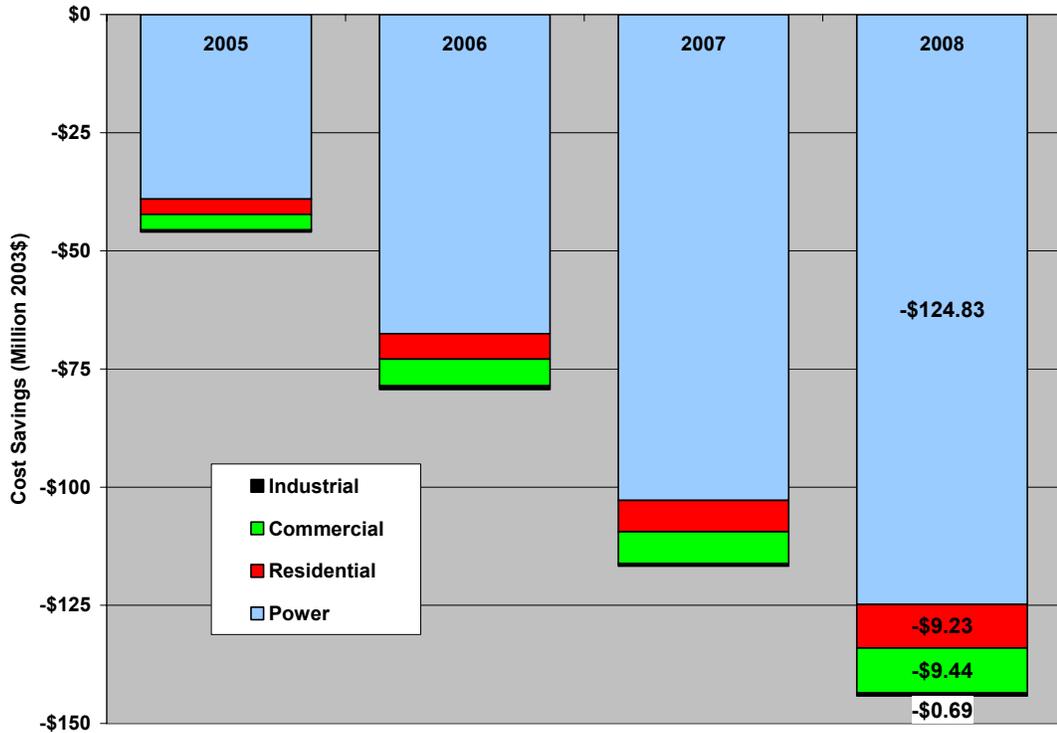


Figure 1. Natural Gas Savings from 2.8% New Renewables in New York.

X. Other Issues

A. **Achievability**

Questions about the achievability of the Governor’s 25% goal have been raised.

While both the Staff cost study and the Joint Utilities’ effort find enough renewables, we believe that both studies have made overly conservative assumptions about the availability of renewables within New York. The table below presents RETEC’s assessment of the amount of renewables that could be installed in New York State by 2013 at a reasonable price. This assessment is based on the extensive industry expertise of the RETEC members.

RETEC 2013 RPS Potential	
Source	MWh
Biomass	5,650,000
Fuel Cells	800,000
Hydro	1,890,000
LFG	300,000
PV/Solar	770,000
Wind	8,100,000
Total	17,510,000

This is more than enough to meet the 16,821,000 MWh of new renewables that both RETEC and Staff forecast will be necessary to achieve the 25% goal. It is significantly more than the 14,524,000 MWh of new renewables in the Joint Utilities model, however the Joint Utilities model does not achieve the 25% goal. Staff's cost study relies on imports for about 44% of the RPS and on wind power for 49%. The table below presents a breakdown of the new renewables under the Staff model:

MWh's Reached Type	Source		Grand Total
	Import	Local	
Biomass	1,208,371	1,606,397	2,814,768
Hydro	5,409,000		5,409,000
LFG		1,008,714	1,008,714
Wind	1,445,400	7,595,446	9,040,846
Grand Total	8,062,771	10,210,557	18,273,328

Interestingly, Staff's assessment of the in-state resource base is similar in scale though not composition to the economic potential found in the Optimal study for NYSERDA under high avoided costs. Setting aside hydropower, which in the Optimal study includes relicensing of existing facilities, and MWS incineration, which is not renewable for the reasons explained earlier, the Optimal study finds a total of 9,657,000 MWh would be cost-effective in 2012 under high avoided costs. The composition of this mix is presented in the table below.

Optimal Study – Economic Potential under High Avoided Cost Renewable Supply	
	GWh
Biomass	5,325
Landfill Gas	407
Solar Thermal	181
Windpower	3,744
Total Renewable	9,657

Both the Optimal Study and RETEC find significantly more economic potential in biomass. This in large part has to do with a greater potential for co-firing biomass. During the technical conference on August 13, the Joint Utilities basically stated they thought that the Optimal Study was overly optimistic about the potential for co-firing because it was not happening now. However, there is little incentive to co-fire at this point. With the development of a market value for RECs, RETEC believes that the challenges to co-firing will drop as experience mounts.

Both Staff and RETEC find substantially greater potential for wind than the Optimal Study does. This is in large part because the Optimal study assumes the most new turbines will be 1MW in size, but this is a dated assumption. Currently, offshore turbines are over 3 MW and onshore turbines are well-over 1 MW and increasing in size with new product development. This greatly increases the amount of power that can be generated without running into siting constraints. The wind industry fully expects to install between 500 and 1000 MW of wind on land in New York by 2006 with an additional 1000-2000 MW coming on line by 2008.¹⁴ This would lead to a number between 8 and 9 million MWh by 2013 at a 30% capacity factor. Even discounting this number significantly, the Optimal numbers seem unreasonably low.

¹⁴ Personal communications with Douglas Ward, Young and Sommer.

Beyond biomass and wind, the other large discrepancy is in the availability of sustainable hydropower in New York. RETEC's potential considers three types of hydro, repowering turbines at existing facilities, increasing the number of turbines at existing facilities, and new facilities at existing dams that currently have no dams. Our assessment is based on the resources identified by FERC.¹⁵

Finally, RETEC believes there is a lot more potential for fuel cells and solar power. These technologies are essentially only limited by their costs, and the emerging technology mechanisms described earlier have the potential to drive significant installations and to drive the price into a range where the market demand will drive the technologies further. The manufacturing and installation capacity for these technologies can easily be brought online as long as New York moves expeditiously to implement the RPS.

While both Staff and the Joint Utilities find enough new renewable resources to meet the goals of their studies, the RETEC potential is presented to show that even if only instate resources were used (which is not RETEC's position), the goals of the RPS could be met. Furthermore the mix of resources will be a diverse one, with wind playing an important role, but still making up less than half the total available. In other words, with a well designed RPS, achievability should not be a concern.

B. NYISO and System Reliability

A number of parties to this proceeding have argued that an RPS may adversely impact system reliability, and they have used the recent blackout to press for additional

¹⁵ *Hydroelectric Power Resources of the United States: Developed and Undeveloped*, FERC, Washington, D.C., January 1, 1990. *Low Head/Low Power Hydropower Resource Assessment of the Noth Atlantic and Middle Atlantic Hydrologic Regions*, U.S. Department of Energy, DOE/ID-11077, April 2003.

time to investigate reliability as it pertains to an RPS. The blackout does illustrate the need for clearly vested authority in state and regional control organizations such as the NYPSC and the ISO, governed by strong Federal directives to ensure a reliably coordinated grid with fair access for all generation sources. Within this context, renewable energy can play a key role in tomorrow's electric market without adverse reliability impacts. The RPS proceeding, however, is not the appropriate forum to determine system reliability needs.

RETEC believes the NYISO (along with the NYPSC and FERC) is the most appropriate institution to address reliability issues. The NYSERDA/NYISO study on integrating wind resources is underway and can be expected to address any relevant issues that arise. RETEC believes exploring reliability issues in detail within the RPS proceeding would be an unnecessary and duplicative administrative effort. Decisions on basic RPS design issues need not wait for completion of the NYSERDA/NYISO study, and doing so would needlessly delay implementation and potentially increase costs.

Several places in the world have penetration levels of intermittent resources that exceed the levels that are predicted to occur in New York. Experiences from these areas are contributing to the development of sound models, grid codes and good utility practice based on real world experience that has yet to be transferred to New York. These developments will result in cheaper integration and interconnection of wind resources while maintaining reliability. (Please see: Parsons, B., et al, *Grid Impacts of Wind Power: A Summary of Recent Studies in the United States*. European Wind Energy Conference, Madrid, Spain; June 2003. <http://www.nrel.gov/docs/fy03osti/34318.pdf>)

RETEC also would like to call attention to the existing NYISO procedures for new generation under which each major project must undergo a System Reliability Impact Study (SRIS). During this process, any adverse impacts to reliability of the system are identified and must be mitigated, taking into consideration all other projects in the “pipeline.” No major projects are approved without this process. Several hundred megawatts of wind power have already passed this crucial milestone in the approval process and can be expected to contribute to the RPS in the early years without any adverse reliability impacts. The NYSERDA/NYISO study may make a determination that modifications to this process, or other ISO planning or market rules changes, may be necessary or advantageous over the long-term to integrate even larger amounts of renewable resources than can be expected from the first few years of an RPS. However, RETEC sees no reason to presume this is the case, and is confident that the ISO can and will do so as the need arises. The RPS targets are set to ramp up over time and will allow for advance planning and system reliability studies.

The question of reliability is really a question of cost and of planning. The need for ancillary services and the changes in market prices that occur as the mix of generation resources change are not unique to renewable resources. Fairly large amounts of wind can be integrated into a system without jeopardizing the reliability of the grid and it can be done at reasonable cost. System operators ably and consistently respond to fluctuations in load; they are simply less familiar with managing fluctuations in generation. Increased experience with wind energy, information from other systems with large amounts of renewable generation, and technological improvements, including forecasting, will help offset system operator concerns about integrating wind resources. Forecasting of wind

energy availability to provide more accurate estimates of the power that will be delivered to the energy market is becoming more widespread. In fact, several member companies of AWEA (a RETEC member) offer this service. While AWEA advocates exempting wind energy from imbalance payments (as the NYISO currently does for up to 500 MW), determining the effect on reliability of an expansion of this limit is, and should be, the province of the ISO.

The blackout should not be used to set back a policy initiative that can so clearly strengthen the State's energy security. While the exact causes of the blackout remain unknown at this time despite much speculation, we do know that it was not caused by renewable resources, nor by a lack of available generation within New York.

In addition, as discussed earlier in these comments, distributed generation resources can make a significant contribution to grid stability and help ease transmission constraints. The RPS will encourage needed investment in such resources, thereby enhancing rather than jeopardizing reliability. Further, while transmission failures such as a blackout *will* force wind farms and most other renewable generation to shut down, just as it does fossil fuel plants, these resources can come completely back online almost immediately once the transmission system is operating again, contributing to the rapid restoration of service. In contrast, nuclear and coal plants can require up to 48 hours to regain full capacity.

C. Green Markets

As RETEC discussed in our Initial Comments at 15-16 and in our Individual Procurement/Compliance Method Discussion Proposal (6/14/03) at 6, the emerging green power market in New York State will provide near-term and long-term benefits to the

State that will be synergistic with those of the RPS. However, the RPS should be designed to complement the green power market, not to overlap with it. Compliance with the RPS should be separate from any “green market” premium products sold by the load-serving entity. Each kilowatt-hour of renewable generation may be sold either to the renewable portfolio credit market or to the retail premium green electricity market – but not to both for the same kilowatt-hour of production. RETEC would, however, consider a scenario whereby RPS credit could be obtained for green market products sold or committed to in the early years of the RPS as an incentive for early compliance with the RPS requirements. In the absence of such a specific program or policy to the contrary, green market purchases may not be used to show compliance with the RPS.

If properly structured, the RPS compliance demand can be leveraged by the voluntary demand on parallel tracks to realize the full potential of New York’s renewable resources. The RPS together with the “green market” offers a potent combination of short and long-term marketing demand that builds near-term appetite for long-term purchase agreements, at a lower cost than either tool alone could produce. In other words, the voluntary premiums paid by customers absorb the higher cost of introducing new wind and other renewable energy in the short-term, as the RPS ramps up long-term demand necessary to attract credit-worthy long-term buyers. Therefore, it is important that the RPS efforts not distract from State’s efforts, including NYSERDA, to bolster the green markets.

Additionally, the green market in the early years allows key electric suppliers to gain confidence, experience and appetite and also educate the public, which should strengthen support for an RPS. Finally, the RPS should be viewed as a floor, and not a

ceiling because there will be a portion of electric consumers with demand for clean energy products going above and beyond what their LSE may offer through the RPS.

D. Administrative Notice of Document References

RETEC has no objection to Administrative Law Judge Stein's consultation of publicly available governmental reports and documents as background concerning issues in the RPS proceeding, as set forth in Judge Stein's letter of July 22, 2003.

RETEC requests that the following publicly available documents referred to in RETEC's comments and affidavits be placed in the record of this proceeding:

1. Elliot et al, *Impacts of Energy Efficiency and Renewables on Natural Gas Markets*, ACEEE and Energy and Environmental Analysis, Inc., September 7, 2003. <http://www.aceee.org/energy/natgassummaryreport.pdf>.
2. Elliot et al, *Natural Gas Price and Availability Effects of Aggressive Energy Efficiency and Renewable Energy Policies: A Methodology White Paper*, ACEEE, September 2003. <http://www.aceee.org/energy/natlgaswhite.pdf>.
3. U.S. Dept of Energy, *A National Vision of America's Transition to a Hydrogen Economy*, (February 2002) http://www.eere.energy.gov/hydrogenandfuelcells/pdfs/vision_doc.pdf
4. U.S. EPA, Solid Waste Management And Greenhouse Gases, A Life-Cycle Assessment of Emissions and Sinks, 2nd Edition, EPA530-R-02-006 (May 2002), [http://yosemite.epa.gov/oar/globalwarming.nsf/UniqueKeyLookup/SHSU5BUMHU/\\$File/greengas.pdf](http://yosemite.epa.gov/oar/globalwarming.nsf/UniqueKeyLookup/SHSU5BUMHU/$File/greengas.pdf).

RETEC is providing the Administrative Law Judge with a copy of each of these documents and emailing them electronically to all parties.

Finally, in a letter dated July 28, 2003 (dated March 28, 2003), IWSA asked that several documents be placed in the record of this proceeding. RETEC has no objection to Judge Stein's consideration of these documents. However, we note that IWSA has 1) incorrectly characterized the content and conclusions of these documents, see Appendix D and Hershkowitz Affidavit; and 2) incorrectly characterized these documents as

official agency positions. For instance, IWSA describes the technical paper The Impact of Municipal Solid Waste Management on GHG Emissions in the United States, Thornloe, Weitz, Nishtala, Yarkovsky, Zannes, Air and Waste Management Assoc. 52:1000-1011 (2002), as “a paper authored by the US EPA that explains the greenhouse gas benefits associated with the waste-to-energy industry.” IWSA Letter at 1. However, this technical paper was written by four co-authors, one of whom is on the staff of the U.S. EPA, and one of whom is the president of IWSA. It is not an EPA rule, guidance, policy document or official publication and should not be accorded additional weight as an official EPA document.¹⁶ Similarly, as is discussed in Appendix D (MSW eligibility section), the letters from EPA Staff (Feb. 14, 2003) and DOE Staff (April 23, 2003) are not agency rules, guidance or policy documents (nor do they address whether or not WTE should be included in the New York RPS) and should not be accorded additional weight.

E. RPS Proceeding – Next Steps

As is discussed in our cover letter, this proceeding should move forward on an expedited basis, as directed by the Commission’s Instituting Order. Instituting Order at 2. Ensuring that the RPS is designed and implemented in such a way to allow interim requirements to commence in 2005 will spur renewable investment in New York State and reduce the overall cost of the RPS. RETEC respectfully requests that every effort be made to ensure that a Recommended Decision in this proceeding be issued before the end of this year, allowing for a Commission decision in early 2004. This time schedule would allow the implementation of the RPS by 2005.

¹⁶ See Hershkowitz Affidavit and Appendix D to these Comments (MSW Eligibility Section) for further discussion of the scope and findings of this technical paper.

RETEC strongly disagrees with the approach outlined in the Joint Utilities' letter of September 15, 2003. The Joint Utilities suggest that the Recommended Decision should represent, at most, an "interim" decision subject to change on the basis of an endless loop of working groups. Joint Utilities letter at 5-6. After the submission of three rounds of comments (including factual submissions), extensive information requests and responses, and intensive working group sessions, the record of this decision will contain more than enough information to allow the issuance of a Recommended Decision that will thoroughly explore the policy issues underlying the RPS, answer the questions posed by the Commission's Instituting Order and make recommendations to the Commission about the central design issues for the New York RPS. In particular, the cost/benefits studies prepared by Staff, Joint Utilities and RETEC, which will have been subject to response and rebuttal by the end of the comment process, will provide more than enough information on the net economic impact of the RPS. There is no need for an ongoing working group on costs. We understand that the Recommended Decision will not address every detail of the RPS and that further implementation work will need to be done by the parties after the issuance of the Commission's ruling on the Recommended Decision. However, that is not a justification for viewing the Recommended Decision as provisional in any sense.

Neither do we agree with the Joint Utilities' assertion that the proceeding should not move forward prior to more work by the active parties on reliability issues. Please see Section X.B above for the RETEC position on the appropriate process and entities for exploration of any potential reliability concerns.

We do agree with the Joint Utilities that Working Group 4 might productively reconvene to try to reach further consensus on renewable energy credit trading issues, with the goal of getting a jumpstart on the more detailed decisions that will have to be made during the implementation phase of the proceeding. The Recommended Decision, however, should not await the outcome of any further Working Group 4 meetings.

XI. Conclusion

The renewable portfolio standard in New York has the potential produce huge environmental and economic benefits not just for the State but for the country as a whole. The Governor and the PSC have set ambitious but achievable goals for this policy. By moving expeditiously but with careful eligibility standards and market mechanisms that both control costs and drive installation and operation of new renewables, this process will bring national share of retail electric sales that are subject to renewable purchase requirements to nearly 40%.

RETEC looks forward to working with all of the parties to this proceeding in the next phase to implement the best RPS possible.

Submitted on behalf of
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