STATE OF NEW YORK
PUBLIC SERVICE COMMISSION

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

SUMMARY OF OPTIONS AND RECOMMENDATIONS

The Recommended Decision, released June 3, 2004, explores several options for the design of the RPS. The first option (Option A) is an amalgam of proposals offered in part by the Joint Utilities, in part by MI, and in part by other individual parties. Generally, this option develops an RPS which extends the period to reach 25 percent renewables, includes the widest range of eligibility that can be argued is consistent with the program's objectives, and is designed to result in the lowest gross cost to consumers in the short run.

The second option (Option B) generally represents the positions of the RETEC coalition and other environmental parties, including the American Wind Energy Association. Generally, this option starts the earliest, has the most aggressive targets, assigns the largest proportion of resources to development of solar and fuel cell generation, and has the most stringent eligibility criteria.

The third option, Option C, balances the objectives, should provide sufficient incentives to encourage early renewable generation development in New York, strikes a middle ground on eligibility consistent with public expectations of what benefits are worth subsidizing, and is expected to have a cumulative impact on

customers' bills of less than three percent over current bills.[1]

A. Target and Objectives

The baseline, targets, and milestones reflected in the Cost Study II, Prime Case, as modified in Appendix B to this Recommended Decision, are recommended. These recommendations implement the Commission's mandate in the Instituting Order to achieve at least 25 percent renewables. Moreover, based upon forecasts of load growth, fossil fuel prices, and the State's potential to attract developers of renewable generation, this target should be achievable by 2013. However, in recognition of the vicissitudes of project development, site selection, fuel prices, and the economy, the recommendation is that the Commission review the 2013 schedule in 2008 (the 2008 Review). With modifications to reflect parties' comments, the working objectives are also recommended for adoption as Commission objectives.[2]

The recommended targets to be reached from 2006 to 2013 are as follows:

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[1] These three options are detailed in the Recommended Decision Cost Analysis, Appendix B. However, each issue is analyzed on its own merits.

[2] The six objectives detailed below cover environmental concerns; generation diversity for energy security; economic benefits; equity, efficiency, and cost constraint; competitive neutrality; and administrative fairness and efficiency.

Table 1

Incremental RPS Targets

Year	RPS Percentages
2006	0.94%
2007	1.92%
2008	2.87%
2009	3.81%
2010	4.74%
2011	5.67%
2012	6.58%
2013	7.50%

Table 2
Calculation of RPS Targets (MWh's)

Year	SEP Forecast	Baseline	Executive Order 111	Green Marketing	Increment Target	Total Renewables	Renewables Percentage	Incremental Percentage
2003	160,480,000	31,159,134	0	0	0	31,159,134	19.42%	0
2004	162,844,000	31,405,565	0	0	0	31,405,565	19.29%	0
2005	165,280,000	31,411,462	251,065	274,953	0	31,937,479	19.32%	0
2006	167,490,000	31,417,358	283,192	274,953	1,577,518	33,553,020	20.03%	0.94%
2007	169,977,000	31,411,491	315,338	274,953	3,255,600	35,257,382	20.74%	1.92%
2008	172,404,000	31,405,624	347,505	274,953	4,956,086	36,984,168	21.45%	2.87%
2009	174,658,000	31,399,758	379,691	274,953	6,652,656	38,707,057	22.16%	3.81%
2010	176,910,000	31,393,891	411,897	274,953	8,380,737	40,461,478	22.87%	4.74%
2011	179,031,000	31,388,024	394,132	274,953	10,159,859	42,216,968	23.58%	5.67%
2012	180,907,000	31,382,158	376,366	274,953	11,909,571	43,943,047	24.29%	6.58%
2013	182,866,999	31,376,291	358,601	274,953	13,706,906	45,716,750	25.00%	7.50%

B. Eligibility

Consideration was given to several approaches to eligibility, a critical issue because of the imperative to include sufficient resources to achieve the target, given problems for siting sufficient renewable generation in New York, the importance of encouraging new technologies, and the constraint of rate impacts.

This issue generated far more public concern and opinion than any other, from individuals, town and city governments, environmentalists and industry. One option considered was eligibility for the widest possible range of resources: accepting, for example, any resource approved for eligibility in another state consistent with New York law. Another was to restrict eligibility to the most environmentally beneficial resources available. On balance, the recommendation is to commence the RPS including specified resources and to develop procedures for inclusion of additional resources as they develop or

improve. Eligible resources recommended[3] are contained in the following table:

Table 3
RPS Main Tier Eligible Electric Generation Sources
Categorization of Source Generation Type

General Requirements:

(1) To be eligible, the generation facility must have been developed after January 1, 2003, except for certain existing very small hydroelectric facilities that qualify for inclusion on a maintenance of renewable resource basis; and

(2) Eligibility is limited to the electricity sold in a retail sale made by a load serving entity to a customer – self-generation is not eligible in the main tier.

Category	Source	Other Requirements
Biogas	Landfill Gas (Methane) Reciprocating/Internal Combustion Engine; Simple Combustion Turbine; Boiler Steam Turbine Cycle; Microturbine	
	Sewage Gas (Methane) Reciprocating/Internal Combustion Engine; Simple Combustion Turbine; Boiler Steam Turbine Cycle; Microturbine	
	Manure Digestion (Methane) Reciprocating/Internal Combustion Engine; Simple Combustion Turbine; Boiler Steam Turbine Cycle; Microturbine	If required to have a SPDES permit by NYSDEC regulations, a Concentrated Animal Feeding Operation (CAFO) providing the manure must have and be in compliance with its current Agricultural Waste Management Plan (AWMP) developed by a duly qualified Agricultural Environmental Management (AEM) Planner and must be operating in compliance with a SPDES permit. If not required to have a SPDES permit, the CAFO must be operating in compliance with the best management practices for a facility of its size set forth in the *Principles and Water Quality Protection Standards* specified in the *Agricultural Environmental*

[3] The DGEIS includes comprehensive definitions and analyses of these resources. Unless otherwise specified, those definitions (contained in §6.2) are incorporated by reference.

		Management (AEM) Framework & Resource Guide developed by the NYS Department of Agriculture and Markets and the NYS Soil and Water Conservation Committee.
Biomass (from eligible sources of unadulterated biomass)*	Biomass Direct Combustion – Boiler Steam Turbine Cycle	
	Biomass Combined Heat & Power Boiler Steam Turbine Cycle	
	Biomass Co-fired with existing Coal Combustion – Boiler Steam Turbine Cycle	Only the electricity generated from the biomass portion of the fuel is eligible.
***See definition in Table 2.**	Biomass Gasification – Combined Cycle Combustion Turbine	
	Biomass Powered Pumped Storage for Hydropower	
Fuel Cells	Solid Oxide Fuel Cells (SOFC)	
	Molten Carbonate Fuel Cells (MCFC)	
	Proton Exchange Membrane Cells (PEM)	
	Phosphoric Acid Fuel Cells (PAFC)	
Hydroelectric	Hydroelectric Upgrades	No new storage impoundment, eligibility limited to the incremental production associated with the upgrade.
	New Low-Impact Run-of-River Hydro	Facility capacity limited to 30MWs or less with no new storage impoundment.
	Existing Very Small Hydroelectric	On a maintenance of renewable resource basis, limited to in-State facilities with facility capacity limited to 10 MWs or less with expiring above-market energy contracts consistent with the assumptions for such contracts made in the NYRPS Cost Study Report II dated February 27, 2004.
	Pumped Storage Hydro Powered by Eligible Hydro (listed above)	
Solar	Photovoltaics	
Tidal	Tidal Turbine	
	Pneumatic Turbine	
	Ocean Wave Turbine	
	Pumped Storage Hydro Powered by Tidal	
Wind	Wind Turbines	
	Pumped Storage Hydro Powered by Wind	

Table 4
Definition of Eligible Sources of Unadulterated Biomass

Eligible Sources of Unadulterated Biomass:

Agricultural Residue (woody or herbaceous)
Woody or herbaceous matter remaining after the harvesting of crops or the thinning or pruning of orchard trees on agricultural lands.

Harvested Wood
Wood harvested during commercial harvesting. The supplier must have and be in compliance with a current Forest Management Plan prepared by a professional forester that includes (a) standards and guidelines for sustainable forest management that require adherence to management practices which conserve biological diversity, maintain productive capacity of forest ecosystems, maintain forest ecosystem health and vitality, and conserve and maintain soil and water resources; (b) a harvest plan following production and harvest standards based on best management practices set forth in guides developed, tested and peer reviewed for USDA and USDOE; (c) the monitoring of harvest operations by a professional forester; (d) the reporting of harvest operations by a professional forester; and (e) periodic inspections of harvesting operations by state authorities or approved non-governmental forest certification bodies to assure that harvest operations conform to the standards.

Mill Residue Wood
Hogged bark, trim slabs, planer shavings, sawdust, sander dust and pulverized scraps from sawmills, millworks and secondary wood products industries.

Pallet Waste
Uncontaminated wood collected from portable platforms used for storing or moving cargo or freight.

Refuse Derived Fuel
The source-separated, combustible, untreated and uncontaminated wood portion of municipal solid waste or construction and demolition debris generally prepared by a densification process that results in a uniformly sized, easy to handle fuel pellet, briquette, or fluff material.

Site Conversion Waste Wood
Wood harvested when forestland is cleared for the development of buildings, roads or other improvements.

Silvicultural Waste Wood
Wood harvested during timber stand improvement and other forest management activities conducted to improve the health and productivity of the forest. The supplier must have and be in compliance with a current Forest Management Plan prepared by a professional forester that includes (a) standards and guidelines for sustainable forest management that require adherence to management practices which conserve biological diversity, maintain productive capacity of forest ecosystems, maintain forest ecosystem health and vitality, and conserve and maintain soil and water resources; (b) a harvest plan following production and harvest standards based on best management practices set forth in guides developed, tested and peer reviewed for USDA and USDOE; (c) the monitoring of harvest operations by a professional forester; (d) the reporting of harvest operations by a professional forester; and (e) periodic inspections of harvesting operations by state authorities or approved non-governmental forest certification bodies to assure that harvest operations conform to the standards.

Sustainable Yield Wood (woody or herbaceous)
Woody or herbaceous crops grown specifically for the purpose of being consumed as an energy feedstock.

Urban Wood Waste
The source-separated, combustible, untreated and uncontaminated wood portion of municipal solid waste or construction and demolition debris.

This recommendation excludes coal gasification (proposed by New York Power Authority), nuclear power (proposed by Niagara Mohawk Power Corporation), and combined heat and power units to the extent powered by

natural gas, as outside any applicable legal or common usage meaning of the word "renewable."

It excludes high-impact hydropower projects (run-of-river greater than 30 MWs per facility or new impoundments). It also excludes municipal solid waste incineration-based generation, except insofar as that resource meets the criteria for biomass, as inconsistent with the public expectation of what a renewables premium should buy and incompatible today with the environmental objectives of the RPS.

Generally, all eligible resources should be in one tier, expected to provide the bulk of the incremental megawatt hours needed to reach 25 percent.

There should be two exceptions: a commercialization or new technologies SBC-like tier, for solar, small wind (up to 300 kW but expected to be generally approximately 10 kW in size), and fuel cells, would receive incentive grants on a capacity, not energy, basis, similar to current NYSERDA programs disbursing the System Benefits Charge but in addition to existing programs. The new technologies tier should be targeted to provide two percent of the incremental renewable load. These resources are typically sited by customers, rather than developers, are "behind the meter," and are not susceptible to administrative tracking as large-scale wholesale transactions are. In addition, the high capital costs of these cutting edge resources make up-front grants a more effective procurement method than per kWh premium payments realized over many years.

The other exception is a maintenance adjustment to the baseline and incremental targets to protect very small hydropower projects. This adjustment would add

22,006 MWh per year to the incremental RPS target to offset the attrition of very small hydropower (no more than 10 MWs per facility) that would likely otherwise be retired due to expiring above-market priced contracts. Because this adjustment is intended to offset attrition of the baseline, it does not add incrementally to the satisfaction of the 25 percent target.

Finally, the recommendation is to continue refining criteria, to provide a mechanism for new technologies to apply, and to consider the complementary role of future demand side management initiatives to reduce overall load, thereby increasing the proportion of renewables.

The adoption of these recommendations will result in an incremental percentage of 7.5 percent renewable resources by the year 2013, representing an addition of 13.7 million MWhs of renewable resource generation.[4] The quantity of renewable resources reached through 2013, from each main tier eligible technology and from an SBC-like tier, are illustrated in Tables 3 and 4.[5] The cumulative cost of premium payments for renewables, to achieve the recommended RPS design, will reach between $1.14 and $1.35 billion by 2013, depending upon the pricing approach chosen. However, these premiums will be offset by reductions in wholesale energy costs, as New York reduces

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[4] *See* Table 1, Incremental RPS Targets, and Table 2, Calculation of RPS Targets (MWhs), Recommended Decision Cost Analysis, Appendix B.

[5] *See* Tables 3 and 4, Quantity of Renewable Resources Reached Through 2013, and Quantity of SBC-Like Tier Renewable Resources Through 2013, Recommended Decision Cost Analysis, Appendix B.

its reliance upon fossil fuels, reaching an annual reduction of $137 million by 2013.[6] The net present value estimate (in 2003 dollars) of the program ranges from $158 to $328 million.

Because of the persistently high price of natural gas, in particular, the bill impacts for the RPS are modest if not minimal. For residential customers, for the life of the program, cumulative bill impacts will range from a reduction of 1.2 percent to an increase of 1.8 percent; for commercial customers, the same years will see a range of a one percent reduction to a 2% increase; and for industrial consumers, reductions of two percent to increases of 2.4 percent.[7]

This RPS will result in substantial changes in New York's fuel use for electric generation. The RPS should reduce, in 2013, New York's generation using coal by 600,000 MWh; using oil by 730,000 MWh, and using natural

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[6] The most recent forecast of the U.S. Department of Energy, Energy Information Administration (DOE-EIA), of average wellhead prices for natural gas shows a long-term upward shift in natural gas prices from prior forecasts through 2025. *See* Annual Energy Outlook 2004, dated January 2004, at http://www.eia.doe.gov/oiaf/aeo/.

[7] *See* Tables 5-13, Recommended Decision Cost Analysis, Appendix B. On May 11, 2004, the U.S. Senate passed a renewal of the federal Production Tax Credit incentives for wind developers and others until January 1, 2007 as part of the Jumpstart Our Business Strength Act; passage in the House of Representatives is still required. To ensure the success of the New York RPS before passage of the Production Tax Credit, the recommendation is to institute the program so as to provide that incentive, until the Production Tax Credit is reauthorized, a recommendation resulting in a minimal cost increase. RPS costs with and without the federal Production Tax Credit were modeled.

gas by 6,155,000 MWh. These reductions will have the effect of reducing air emissions statewide by 2013 of NOx (6.9 percent); SO2 (5.9 percent); and CO_2 (7.7 percent), with greater emission reductions in New York City and Long Island.[8]

C. Timing

The Instituting Order can best be read to assume that today's existing or baseline renewable resources need not, generally, be offered further ratepayer price support to succeed. An RPS is necessary, in fact, to promote the development of ***additional*** renewable resources for New York's retail energy portfolio. Accordingly, the recommendation is that only new resources developed after January 1, 2003, will be eligible for the RPS. The exceptions to this general rule are for (1)wind: to ensure the viability of the few existing wind projects, wind projects will be RPS-eligible regardless of when operations commenced; and (2)certain very small hydropower facilities, 10 MWs per facility or less, with above-market costs and expiring above-market energy price contracts. RPS eligibility appears necessary to ensure these facilities continue to operate and preserve these renewable resources for New York's use.

As to the start date for the RPS, the recommendation is that the program compliance provisions commence with the calendar year 2006.

D. Overall Structure

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[8] *See* Tables 15-16, Recommended Decision Cost Analysis, Appendix B.

The recommendation is that the RPS structure be a hybrid of the proposals; that an optional or voluntary central procurement capability be developed by a State agency to offer renewable procurement via long-term contracts if necessary, but that load-serving entities should also be free to opt to procure the requisite renewable load or certificates individually. A load serving entity failing to acquire target renewables should comply in the alternative by a payment of 150 percent of the past year's certificate cost.

Procurement may be by long-term (eight or more years) contracts for differences acquired in annual incremental slices.

In addition, the recommendation is that while, generally, all New York customers will benefit from the RPS and should anticipate it, an RPS design that exempts NYPA customers and municipals is recommended.

E. Imports and the Delivery Requirement

Imports of all types of otherwise eligible resources should be eligible for renewable credits or certificates as long as an associated amount of energy is delivered to the New York Control Area in the same calendar month. This type of delivery requirement has the advantage of maximizing benefits to New York in the form of reductions in local air emissions, energy diversity and security and wholesale price reductions resulting from increased supply. Moreover, requiring actual delivery of energy into New York appears to be required by the terms of the Instituting Order, which establishes "a renewable portfolio standard for *electric energy retailed in New York*

State."[9] Sale of generation attributes certificates should be tied to delivery of the applicable volume of electricity on a monthly or other periodic basis consistent with intermittent generation characteristics.

However, in recognition of the rapidly evolving regional, national, and international regimes concerning trading in renewables certificates or credits,[10] the recommendation is that the delivery requirement should be reconsidered as part of the 2008 Review, after two years' experience with the program. Another recommendation is to explore splitting the renewable energy certificate between a greenhouse gas reduction component (CO_2 emissions) and the balance of the renewable attributes, and to provide for trading of CO_2 credits without a delivery requirement in conjunction with the regional greenhouse gas cap and trade program.

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[9] Case 03-E-0188, Instituting Order (issued February 19, 2003), p. 2, emphasis supplied.

[10] These regions include New England, Pennsylvania, New Jersey, and Maryland (PJM), Ontario and Quebec.