Appendix C

RESPONSE TO COMMENTS ON THE DRAFT GEIS

Introduction

This document summarizes comments submitted on the Draft GEIS, issued April 8, 2004. A Notice of Completion of the Draft GEIS was published in the Environmental Notice Bulletin on April 14, 2004, and comments were requested to be provided through May 14, 2004. Written comments were received from approximately a dozen active parties to the proceeding and several individual citizens and groups. A response has been provided to each substantive comment raised by these entities and are presented below. Because of the voluminous nature of individual comment letters, they have not been attached this document. Full copies are on file for review in the Commission's Central Files.

In addition, over 1600 letters were received via e-mail, mostly in standardized comment letter form. These letters expressed support for development of an RPS and highlighted the potential benefits of increasing renewable energy sources in the State. These letters also expressed objections to including municipal solid waste (MSW) incineration as an eligible resource in the RPS program. These numerous public statements in support of an RPS did not require responses since the statements were directed more to policy issues rather than Draft GEIS issues and have not been presented in this document. Similarly, objections to MSW incineration required no response. These letters, however, are on file in the Commission's Central Files.

Joint Utilities

Comment: On page 2, the Draft GEIS states: “[P]reparation of the Draft GEIS and the environmental evaluation of the RPS is based, in large part, on information used by, and the results from, the RPS Cost Study.” The Draft GEIS also addresses the use of the Cost Study cost estimates for the Draft GEIS in the “RPS Program Costs” Section 10.1 on page 116. This represents a significant shortcoming of the Draft GEIS because the

Cost Study (i) failed to analyze fundamental factors impacting the cost of an RPS program and (ii) used cost suppressing assumptions which impact the conclusions found in the Draft GEIS (*e.g.,* impacts associated with displaced and retired generation, reliability costs, etc.).

Response: The RPS Cost Study acknowledges that there may be "Other Effects" [NY RPS Cost Study Report II, Volume A – Revised: February 27, 2004, at p. 9] not quantified including the fact that the introduction of large wind resources could cause some increase in the amount of regulation service required by the NYISO and (in the long term) the State's capacity reserve requirement. The extent of these costs, if any, cannot be estimated with certainty at this time as they are largely site-specific. The Phase I Reliability Study did not settle the issue, but also did not demonstrate that the likely level of wind development would exceed thresholds of major concern. The RD Cost Analysis used in the Final GEIS considered comments on, and refinements to, the RPS Cost Study.

Comment: The Cost Study overstated the environmental benefits of an RPS because it did not accurately reflect which facilities would be displaced by new renewable generation. Therefore, the actual results may be significantly different than what is anticipated by the Draft GEIS and the Cost Study. For Example, the Cost Study incorrectly assumed that new renewable generation would displace only existing fossil resources. In actuality, the new renewable resources could cause existing renewable sources (*e.g.*, hydro) to be backed down because wind generation produces most of its energy during off-peak hours (hydro and nuclear operate all the time). In other words, in order to balance load and generation during off peak hours in some load zones, New York Independent System Operator (NYISO) systems operations may have to re-dispatch other generator resources such as hydro generation because, for example, nuclear generation is limited in its ability to follow load. This makes the benefits identified for the RPS questionable.

Response: The RPS Cost Study provides a reasonable estimate of environmental benefits. The modeling assumptions are the best estimates and the outputs, although based on reasonable assumptions, are not meant to guarantee actual results. The electric industry and the future of existing and prospective generators are dynamic. The study period is long enough that many factors such as load growth, economic growth and technological development cannot be predicted with certainty, only reasonableness. That said, the MAPS model was used in the RPS Cost Study to simulate the re-dispatch of other generation units as a result of the introduction of new renewable sources of electricity generation. According to the results of modeling, sufficient fossil fuel resources were available, even at off-peak times, to be backed down without affecting the dispatch of existing hydropower and nuclear power electric generation resources. The MAPS modeling results did not show any negative energy (generation output greater than the load) during any hour of the analysis, indicating that the new renewable generation did not displace existing renewable generation.

Comment: Almost all generation is privately constructed and dispatched based on market conditions. An RPS policy could be viewed by merchant generation negatively, thus inhibiting the development of new, clean, fossil generation. The Draft GEIS failed to address this important consideration.

Response: An RPS policy could just as well provide an incentive for other technologies to improve and reduce costs in order to maintain competitiveness. Merchant generators desiring to develop new renewable resources would be expected to view an RPS policy as favorable, thus encouraging the development of new, clean, renewable generation. Existing policies have encouraged the development of only a single type of electric generation resource, namely, natural gas-fired plants. At this time, there appears to be little incremental activity underway in the merchant generation market. The Cost Study modeling described in the GEIS includes the modeling of new natural gas-fired generation plants expected within the timeframe studied, both with and without the adoption of an RPS policy.

Comment: The Draft GEIS executive summary states that emission decreases will be greater in New York City and Long Island than the statewide reductions. This statement is not supported by the input data in the Cost Study. The Cost Study report locates only 2/10 of a percent of new renewable resources in the New York City and Long Island load areas (NY Zone 3). That relatively small amount of renewable generation makes it difficult to conclude that any significant environmental benefits will occur in the New York City and Long Island load areas. Moreover, the transmission interface between upstate and downstate is currently congested for a significant numbers of hours during the year, thus making it unlikely that any incremental benefits can be derived from interactions between upstate and downstate New York. It is not logical to anticipate that significant additional renewable generation located upstate would displace downstate generation and thus create the decreased emissions anticipated in the Draft GEIS.

Response: The MAPS model was used in the RPS Cost Study to simulate the re-dispatch of other generation units as a result of the introduction of new renewable sources of electricity generation. According to the results of the modeling, transmission congestion does little to impede the impact of renewable resources built upstate on downstate markets. That is primarily because most renewable resources are available at off-peak times when there is little congestion on the transmission system. The definition of generating plants contributing to the New York City and Long Island emission levels in the GE MAPS model includes several plants in the lower-to mid-Hudson Valley. Output from these plants is reduced as a result of the added new renewable generation and, therefore, contributes to the reduction of New York City and Long Island emission level changes. When the larger region used in the model and the off-peak nature of renewable resources are considered, the results reported are not at all illogical.

Comment: The Draft GEIS (pages 2- 3) concludes that there will be emission decreases of NOx, SO_2 and CO_2 and that emission decreases are greater in New York City and the Long Island load areas. Those conclusions derive from the flawed assumptions in the Cost Study that the RPS will cause fossil-fuel facilities to be

operated less than they would without an RPS policy (this is addressed more fully in Sections 2.3, 6.4 and 6.5 of the Draft GEIS). The Cost Study, however, overstated the emission reduction benefits. The Draft GEIS conclusions regarding emission decreases are also unsound because displaced generation facilities may need to continue to provide energy, reserves, and voltage support required by the NYISO to meet reliability requirements. Although the Draft GEIS concludes that the RPS is expected to displace existing generation supplies, including those that rely on oil and natural gas as fuel (Section 2.3.2, pages 13-14), this conclusion is suspect.

Response: Many of the new renewable sources of electricity generation are also capable of providing such ancillary services. The MAPs modeling includes minimum generation and must-run requirements for many of the existing generators. In addition, any changes to emission levels, as a result of incremental reliability requirements that are determined to be needed in the future, are expected to be small compared to the emission changes (reductions) directly related to the added renewable MWhs.

Comment: The Draft GEIS notes the state of competitive markets in New York State and cites extensively from the 2002 New York State Energy Plan (SEP). However, as explained below, the Draft GEIS and the conclusions contained therein may be inconsistent with the goal to continue the development of competitive markets in New York. On page 8, the Draft GEIS notes that: "The (SEP) also provides, in part, a framework to help foster energy policies and long-range planning strategies to ensure that New York's citizens are provided with competitively priced, clean, and efficient energy resources." (emphasis added). The Draft GEIS also cites (page 8) the SEP's recommendation that the New York State Energy Research and Development Authority (NYSERDA) investigate the feasibility of establishing a statewide RPS, including an RPS' compatibility with competitive markets and New York's goal to promote renewable energy development. NYSERDA's preliminary report suggested that: "[A]n RPS could be implemented in a manner that is consistent with and supports the State's wholesale and retail market place" (emphasis added). Later in Section 2.4.3 (page 16) the Draft GEIS reports that: "The SEP supports increased energy diversity, with greater

emphasis on renewable energy development and improved energy efficiency, and innovations in regulatory policies that encourage and support development of competitive energy markets" (emphasis added). The Joint Utilities agree that any RPS adopted in New York should be compatible with the ongoing development of a competitive marketplace in the state. However, the Cost Study, which the Draft GEIS relies upon, models RPS costs based on the unfounded assumption that load serving entities (LSEs) will be required to enter into long term contracts to meet their RPS goals. Such a mandate would be inconsistent with the development of competitive markets and must be avoided.

Response: Long term contracts acquired in a competitive procurement process are not *per se* inconsistent with the development of competitive markets. This comment appears to be a policy argument for consideration in the Commission's deliberations regarding an RPS policy. It does not appear to identify a shortcoming in the Draft GEIS.

Comment: In Section 4.13, the Draft GEIS states that the New York socio-economic setting may be impacted by an RPS in several respects, namely, employment levels, property tax and electric rates. "Higher or lower electric rates could have indirect environmental effects…." The Draft GEIS, however, failed to consider the impacts of higher electric rates as a result of an RPS on the socio-economic setting in New York (*e.g.*, loss of jobs and tax revenues from businesses leaving the state, etc.).

Response: The higher electric rates predicted as a result of the RPS are small and are not expected to have a significant socio-economic impact. Recent fuel price swings in New York due to reliance on fossil-fuels are comparatively many times more significant.

Comment: The Draft GEIS states (page 48) that: "[W]ind energy projects are land intensive, spreading over large tracks of land in order to maximize wind exposure." The Draft GEIS estimates that a 50 MW wind farm could encompass 2500 acres of land plus 1-2 acres of land to support the turbines (access roads, substation, maintenance/office

buildings). The turbines of a 50 MW wind farm will physically occupy up to 125 acres of land (5% of 2500 acres). The Draft GEIS, however, failed to use the projections of the amount of wind energy that is anticipated to be installed in New York as a result of an RPS and thus failed to further quantify the impacts of the RPS/wind energy on New York's land resources. The Cost Study predicted that approximately 2000 MW of wind farm generation will be installed in NY by 2013 as a result of an RPS. Based on these projections, over 100,000 acres of land will be used for wind farm generation. That means up to 5% of that land or over 5000 acres will be physically occupied by wind farm facilities in New York State and the use of the remaining land (over 95,000 acres) located at or near the turbines will be forever limited to be used as open area or farm land since it will not be possible to develop land located among the wind turbines and related facilities. Also, the visual impact of all these turbines could be dramatic and the source of local opposition. The Draft GEIS fails to address these significant and adverse impacts (this comment also applies to the discussion on unavoidable adverse impacts in Section 8.0, page 115 of the Draft GEIS).

Response: Please see revisions to Land Use and Visual Impacts in Section 6.2.1 in the Final GEIS. Revised language acknowledge that a significant amount of land could be occupied by wind energy facilities in order to meet the modeled RPS demand.

Comment: Section 6.3 of the Draft GEIS entitled "Impacts of Electric System Reliability and Reserve Margin and Operation" only briefly addresses the potential reliability impacts of an RPS due to the significant development of intermittent wind generation. While the Draft GEIS notes the fact that the NYISO is conducting a study, the Draft GEIS gives no discussion as to the importance of maintaining the reliability of New York's bulk power system and fails to address the potential cost impacts of the NYISO reliability determinations that will not be known until the end of this year. The Commission should require a supplemental EIS to address the findings of the NYISO Phase II Reliability Report yet to be completed.

Response: The resulting changes to emission levels as a result of recommendations in the NYISO Phase II Reliability Report are expected to be small compared to the emission changes directly related to the added renewable MWhs. No need for a supplemental EIS has yet been demonstrated.

Energy Enterprises, Inc.

Comment: The Draft GEIS appears to be based on the position taken by the DPS Staff during the collaborative and also on the Cost Study Report II prepared by DPS Staff.

Response: The RPS Cost Study analyzed all major positions proposed by the parties, not just the DPS Staff position. The sensitivities and scenarios, which analyze major positions, are attached to Appendix A of the Final GEIS and are reported in the Final GEIS.

Comment: Staff, in determining its incremental RPS targets, "assumed a 'baseline' level of renewable resources developed collaboratively with the parties to Case 03-E-0188." (Cost Study at 11.) The Draft GEIS clearly relied on the Cost Study. (Draft GEIS at 8-9.) Therefore, the statement in the Cost Study, and relied upon in the Draft GEIS, would indicate that the parties in the proceeding have agreed to the baseline discussed in the working groups. EEI is not aware that the baseline proposed by Staff, its "black box", has been agreed to by all of the parties. Again, there is a chance that the Commission will conclude from Staff's statement that the proceeding has concluded that the use of a baseline, and its makeup, are no longer being contested.

Response: This comment incorrectly characterizes the Draft GEIS as a staff document; it is a Commission document and the Commission is aware of the various parties' positions regarding the Baseline as explained in their respective comments during the proceeding.

Comment: The Draft GEIS, while examining the list of possible renewable resources advocated for inclusion in the RPS by DPS Staff, appears to favor, to the exclusion of other resources, wind farms. Indeed, it appears that some resources have been excluded or limited in order to make room for more wind power. Staff's apparent disregard for renewable resources other than large-scale, merchant plant-like, wind farms provides the impression that wind, and only wind, will be the answer to New York's desire to diversify its energy portfolio.

Response: The Draft GEIS examines a host of potential resources other than wind.

Comment: The Draft GEIS concludes that the RPS "will result in environmental benefits in the form of emission reductions from fossil-fuel facilities that are expected to operate less than they would without an RPS policy." (Draft GEIS at 3.) This conclusion is suspect since the reliability study clearly shows that even large-scale wind farms will operate intermittently and it is not clear that New York's load following demand will allow for backing off fossil fueled plants in favor of renewables in order to meet the load.

Response: The MAPs modeling includes minimum generation and must-run requirements for many of the existing generators. The resulting changes to emission levels as a result of incremental requirements that are determined to be needed in the future, due to reliability concerns, are expected to be small compared to the changes in emissions directly related to the added renewable MWhs. The MAPS model was used in the RPS Cost Study and RD Cost Analysis to simulate the re-dispatch of other generation units as a result of the introduction of new renewable sources of electricity generation. According to the results of the modeling, sufficient fossil fuel resources were available, even at off-peak times, to be backed down without affecting the dispatch of existing hydropower and nuclear power electric generation resources. The MAPS modeling results did not show any negative energy (generation output greater than the load) during any hour of the analysis, indicating that the new renewable generation did not displace existing renewable generation.

Comment: The Draft GEIS examines various possible renewable resources noting that generally they are small facilities. The only large amount of generation noted in the Draft GEIS is that of potentially large-scale wind farms. To then draw the conclusion that all of these new resources will significantly reduce reliance on fossil-fueled generating stations and "result in the displacement of some existing and planned electric generation resources" seems speculative. (Draft GEIS at 9.)

Response: The MAPS model was used in the RPS Cost Study and RD Cost Analysis to simulate the re-dispatch of other generation units as a result of the introduction of new renewable sources of electricity generation.

Comment: The Draft GEIS notes that a "50 MW wind farm could encompass 2,500 acres of land" and that "there have been no studies, to date, to determine the cumulative impacts of constructing approximately 2,400 MW of land based wind projects, which a New York RPS could potentially stimulate." (Draft GEIS at 48 and 50.) If one were to do the simple math on wind farm land usage, 2,400 MW of wind would require approximately 120,000 acres of land. To conclude that wind is the answer to New York's air quality issues and fossil fuel dependence is inconceivable.

Response: The comment does not appear to identify a shortcoming in the Draft GEIS, however, it is not the intention of the GEIS to conclude that wind energy is the answer to New York's air quality improvements and fossil fuel dependence. Rather, the Final GEIS shows, through the results of the RPS Cost Study and RD Cost Analysis, that wind energy is a cost effective renewable generation option, among a portfolio of renewable energy alternatives, that can assist in achieving the goals of reducing emissions and reliance on fossil fuel electricity generation. Also, the comment does not address wind imports from sites outside New York and off-shore wind projects that are also anticipated to contribute to New York's RPS.

Comment: The Commission needs to reevaluate the conclusions drawn in the Draft GEIS based on the results of the RPS Proceeding rather than relying solely on one party's position, *i.e.*, DPS Staff.

Response: The Draft GEIS analyzed major positions and alternatives proposed by the parties, not just the DPS Staff position.

Multiple Intervenors

Comment: The Draft GEIS needs to be revised because it relies on the flawed Staff RPS Cost Study. The RPS Cost Study systematically underestimates the cost of a RPS. The Final GEIS needs to properly analyze the cost of a RPS.

Response: The RPS Cost Study acknowledges that there may be "Other Effects" [NY RPS Cost Study Report II, Volume A – Revised: February 27, 2004, at p. 9] not quantified including the fact that the introduction of large wind resources could cause some increase in the amount of regulation service required by the NYISO and (in the long term) the State's capacity reserve requirement. The extent of these costs, if any, cannot be estimated with certainty at this time as they are largely site-specific. The Phase I Reliability Study does not settle the issue, but also does not demonstrate that the likely level of wind development will exceed thresholds of major concern. In addition, the Final GEIS includes results from the RD Cost Analysis, which refined certain assumptions as a result of parties' comments.

Comment: The Draft GEIS does not properly examine the economic impacts of the proposed Action. It does not include any analysis of the economic impacts of an RPS. In order for the Final GEIS to give appropriate weight to economic factors, it must include an analysis of the economic impacts of an RPS. And, those impacts must be compared to the economic impacts of the No Action alternative.

Response: The Final GEIS addresses economic impacts in two primary ways. First, as noted throughout the Final GEIS, the RD Cost Analysis provides the basis for evaluating the changes in the wholesale cost of electricity and the customer bill impacts, which is discussed in Section 10.1. Second, the Final GEIS, in Section 10.2 addresses issues related to secondary economic impacts. Appropriately, the Final GEIS addresses economic impacts in general terms and acknowledges the importance of further evaluation of specific renewable project impacts as individual projects are proposed and undergo further site-specific analysis.

Comment: A supplement to the GEIS should be issued for comment if the policy adopted by the Commission varies from the proposed Action. If the Commission policy is based on different quantities or types of renewable resources, the cost and the impacts on the reliability of the bulk power system will differ from those considered in the Draft GEIS. They must be addressed in a supplement to the GEIS. In addition, a supplemental GEIS will be necessary to address the impacts identified in the Phase 2 reliability study.

Response: This Final GEIS analyzes not only the quantities of renewable resources reached through 2013, but also analyzes the maximum potential of developable quantities of renewable resources. Therefore, any change in the actual implementation period or the level of the RPS targets as modeled for the Final GEIS, so long as the change keeps the level of resources likely to be developed between the level of the No Action alternative and the level of maximum potential (see Table 6.1-2), would not require a supplemental EIS because the impacts of such a change have already been addressed and analyzed. Similarly, it is anticipated by the Final GEIS that because of the broad range of scenarios addressed, for any other RPS program changes that might occur there would be a very high threshold of change, resulting in impacts clearly beyond the broad range of impacts that have been addressed and analyzed in the Final GEIS, before a supplemental EIS might become necessary**.**

Comment: The Draft GEIS states that the additional new RPS renewable electricity generation will displace existing generation supplies, including those that rely on oil and natural gas as fuel, resulting in approximately a 9 percent decrease in energy derived from oil and gas resources by the year 2013. (Draft GEIS at 13.) The Draft GEIS concludes that the displacement will create greater diversity in the state's electric energy supply portfolio, "thereby increasing the security of the State's electric energy supply." (*Id*.) This conclusion is incorrect and should be deleted from the Final GEIS.

Displacing existing fossil fuel generation with renewable resources will not increase the security of New York's existing energy supply. To the contrary, as stated in the Phase I: Preliminary Overall Reliability Assessment, "if existing, marginally operating, thermal generation is retired, or if expected new generation is deferred or cancelled as a result of wind additions then system reliability will be negatively impacted." (Phase I Report at 2.7.) And, although the implementation of a RPS could cause the retirement of existing generation, there has not been any study to determine whether existing generating facilities will be retired as a result of implementing a RPS. (Tr. at 596, 598-599.)

Response: The comment mixes two concepts, namely, energy security and system reliability. Energy security concerns arise due to reliance on foreign sources of fuel that may be subject to interruption and price fluctuations. The displacement of oil and gas reliance with renewable resource reliance will directly reduce energy security concerns. Overall system reliability will be maintained regardless by the imposition of adequate reserve margins.

Comment: The RPS will not increase the security of the state's electricity supply because it will not result in generation being available when and where it is needed. As demonstrated in Multiple Intervenors' March 19, 2004 Comments, a RPS will not improve the security of New York's energy supply because wind generation will not be available where it is needed (in southeastern New York) or when it is needed (summer afternoons).

Response: The RPS is intended to reduce overall energy reliance throughout the year. The comment addresses capacity reliance, which is a different concept.

Comment: An RPS could create a disincentive for investors to develop non-RPS base load generation. *Prima facie*, providing subsidies for some generators, *i.e.,* renewable resources, but not others is not compatible with the development of competitive electricity markets. By providing financial incentives to a limited class of generators, competition in the wholesale electric market will be affected negatively. Non-renewable generators will not receive RPS subsidies and must recover all of their costs by participating in the wholesale markets. However, RPS renewable resources would not be required to recover their capital costs in the markets. Thus, there would not be a "level playing field." Because a RPS will have a negative impact on the development of fully competitive electricity markets, it will have a negative impact on energy security. There is no basis for stating that a RPS will increase the security of New York's energy supply and this discussion should be deleted from the Final GEIS.

Response: Merchant generators desiring to develop new renewable resources would be expected to view an RPS policy as favorable, thus encouraging the development of new, clean, renewable generation. Existing policies have encouraged the development of only a single type of electric generation resource, natural gas-fired plants. At this time, there appears to be little incremental activity underway in the merchant generation market. The RPS Cost Study modeling described in the Draft GEIS includes the modeling of new natural gas-fired generation plants expected within the timeframe studied, both with and without the adoption of an RPS policy.

Comment: There is no support for the statement in the Draft GEIS that "a secondary benefit of the RPS could be a reduction of natural gas prices in the State." (Draft GEIS at 14.) The Draft GEIS acknowledges that there has not been any analysis of potential natural gas price reductions in the State. (*See*, *id*. at note 7.) Because there has not been any analysis of the impact of a RPS on natural gas prices in the State, the

discussion of the reduction of natural gas prices in the state should be deleted from the Final GEIS.

Response: Less reliance on natural gas (lower demand) would likely have a downward effect on natural gas prices. The effect has not been quantified in the Draft GEIS. The comment does not appear to identify a shortcoming in the Draft GEIS.

Comment: The "Economic Development Benefits" section of the Final GEIS should indicate that there has been no analysis of the economic development impacts of a RPS. And, a Supplemental GEIS should be prepared that examines the economic development impacts of both the proposed Action and the No Action alternative.

Response: The generic discussion of economic development impacts of a RPS is a reasonable approach to an assessment given the unknown nature of specific technologies and specific sites which preclude an analysis of detailed impacts. Wholesale price changes and customer bill impacts are among the issues to be balanced by the Commission.

Comment: Although the Draft GEIS states that the proposed Action would increase customer choice, the statement is incorrect. (*See* Draft GEIS at 14-15.) To the contrary, adoption of a mandatory RPS is the antithesis of increased customer choice. With a RPS, customers have no choice. Only a voluntary market-based approach to the acquisition of renewable resources is consistent with increasing customer choice. If a section on customer choice is included in the Final GEIS, it should be part of the discussion in Section 3.2, "The Present Electric System – Overview," of the Final GEIS. It should focus on the success of the numerous initiatives that already have been implemented in New York State to promote the voluntary purchase of electricity generated by renewable resources.

Response: The deployment of new renewable resources is expected to stimulate the development market and to complement green marketing (*e.g.*, Green Power Program) in New York leading to greater choices in the long term for consumers.

Comment: The quantities of renewables in Table 6.1-1 are based on the Prime Case in the RPS Cost Study. This table needs to be revised because it does not reflect the appropriate RPS Cost Study case. The Base Case quantities assume that the production tax credit (PTC) is available to offset some of the costs of a RPS. (RPS Cost Study, Appendix A at 13.) However, there is no PTC currently available and, thus, the Draft GEIS should not rely on an analysis that includes the PTC. Part 8 of Volume B of the RPS Cost Study sets forth an analysis of a RPS if no PTC is available, assuming a RPS incremental target of 4.66 percent. The no PTC scenario demonstrates that without a PTC there will be less wind generation developed and a greater quantity of other types of renewable resources developed than in the Prime Case. (*Id.* at Vol. B, Table 5A-1.) Thus, Table 6.1-1 needs to be revised in the Final GEIS.

Response: Both a PTC and a no-PTC analysis are included in the RPS Cost Study.

Comment: Status of Wind Energy Development in New York: The section of the Draft GEIS that discusses the status of wind energy development in New York State understates the amount of wind energy currently under development is incomplete. According to NYSERDA, there is 500 to 700 megawatts of wind generation in development in New York State. (Tr. at 154.) This section should be revised in the Final GEIS to accurately represent the status of wind energy development in New York.

Response: The section Status of Wind Energy Development in New York is intended to identify wind energy projects already in commercial operation. However, NYSERDA reports that it has three executed SBC contracts supporting the development of 425 MW of wind power in various stages of the permitting process. The New York State Department of Environmental Conservation (DEC) has identified six wind development

projects, totaling approximately 700 MW, that have come before it (although not all are in the formal permitting stage).

Comment: The discussion of the potential development of wind projects cites the "relative proximity to load centers" as a reason for "renewed interest and development where good wind resources have been identified." (Draft GEIS at 46.) However, neither the Phase I: Preliminary Overall Reliability Assessment nor the RPS Cost Study indicates that the potential wind sites are in "relative proximity to load centers." To the contrary, the potential wind sites identified in the Phase 1 Report and the RPS Cost Study are not located in the area of the state where additional generating capacity is required. Eighty-five percent of the potential wind sites for wind generation are located west of the Central East Interface. (Phase 1 Report at 2.6 – 2.7.) And, none of the sites are located in the New York Control Areas of Zones H, I or J. (*Id*. at 2.2.) Thus, the reference to the "relative proximity to load centers" should be deleted from the Final GEIS.

Response: The Final GEIS deletes the reference to "relative proximity to load centers."

Comment: This section of the Draft GEIS needs to be revised to indicate that the impacts of a RPS on the reserve margin and system operation have not been studied. The Phase 1 Report, which is not a detailed system performance evaluation, but only a preliminary analysis, did not address these issues. The Phase 1 Study was not an operational analysis. The Final GEIS should identify the many significant issues relating to the impact of a RPS on the reliability of the New York bulk power system that were not addressed in the Phase 1 Report.

Response: The changes to emission levels or other environmental impacts as a result of incremental requirements that are determined to be needed in the future due to reliability concerns are expected to be small compared to the environmental benefits directly related to the added renewable MWhs.

Comment: The Final GEIS should include a discussion of the potential for a RPS to impact negatively the reliability of the electric system in New York State. In addition, a Supplemental GEIS should be issued after the Phase 2 reliability assessment is completed in order to address the findings of that study.

Response: The resulting changes to emission levels as a result of incremental requirements that are determined to be needed in the future due to reliability concerns are expected to be small compared to the changes directly related to the added renewable MWhs. No need for a supplemental GEIS has yet been demonstrated.

Comment: This section indicates that the MAPS modeling results in the RPS Cost Study show which type of generation and underlying fuel usage would be displaced by the implementation of a RPS in New York State. (Draft GEIS at 105.) However, the findings of the Phase 1: Preliminary Overall Reliability Assessment indicate that some generation that would be displaced by a RPS is hydroelectric generation which is not reflected in the RPS Cost Study. The Phase 1 Report indicates that significant quantities of St. Lawrence Project and Niagara Project hydroelectric power would be displaced by wind generation. (See MI Mar. 19 Comments at 15-17.) Even though the Phase 1 Report includes a fatal flaw power flow analysis of 3,300 megawatts of new wind generation, and the RPS Cost Study does not include 3,300 megawatts of wind power, the RPS Cost Study does include more than 3,300 megawatts of renewable resources. And, most of the renewable resources will be located in Megazone 1, which is where the St. Lawrence and Niagara Projects are located. Thus, based on the Phase 1 Report, Table 6.4-1 should be revised and should include hydro as a fuel type that will be displaced. Moreover, the Draft GEIS does not recognize that some of fossil fuel generation that is displaced in the RPS Cost Study may be required to operate in order to ensure system reliability. Table 6.4-1 also needs to be revised to reflect the fuel usage of the generating units that will be required to run to maintain system reliability.

Response: The MAPS model was used in the RPS Cost Study to simulate the re-dispatch of other generation units as a result of the introduction of new renewable sources of electricity generation. According to the results of the model, sufficient fossil fuel resources were available, even at off-peak times, to be backed down without affecting the dispatch of existing hydropower and nuclear power electric generation resources. The MAPS modeling results did not show any negative energy (generation output greater than the load) during any hour of the analysis, indicating that the new renewable generation did not displace existing renewable generation.

Comment: The Draft GEIS states that an RPS will result in benefits, and, therefore mitigation of its impacts is not necessary. (Draft GEIS at 112.) However, there will be adverse economic impacts from the implementation of a RPS that should be mitigated. The RPS Cost Study and the Phase 1: Preliminary Overall Reliability Assessment, although it is preliminary, demonstrate that implementing a RPS will increase the price of electricity in New York State. This will be an adverse economic impact of a RPS and should be mitigated to the maximum extent possible if the Commission implements a RPS. The cost to consumers of a RPS can be mitigated by: (1) not including a SBC-like tier; (2) using a cost of service, not a market clearing, approach to the acquisition of renewable resources; and (3) ensuring that renewable resources that do not require a subsidy to be developed are included in the baseline and do not receive a subsidy.

Response: The three issues discussed in the context of mitigation are basic issues addressed in the RD and subsequent briefing and will be evaluated and balanced among other factors in the final policy considered by the Commission.

Comment: The Final GEIS should include the following measures to mitigate the adverse economic impacts of an RPS and minimize the cost to consumers of an RPS: (1) There should not be any SBC-like tier; (2) The amount of any RPS subsidy should be based on the developer's cost and not on a market clearing price; (3) The baseline should include all renewable resources that do not require a RPS subsidy; and (4) The

RPS surcharge should not be imposed on customers that participate in New York State economic development programs.

Response: The issues discussed in the context of mitigation are basic issues addressed in the RD and subsequent briefing and will be evaluated and balanced among other factors in the final policy considered by the Commission.

Independent Power Producers of New York

Comment: The Draft GEIS states that its preparation and environmental evaluation of the RPS was based, in large part, on the RPS Cost Study. However, the conclusions reached in the Draft GEIS regarding economic benefits, emissions reductions and reliability impacts may not be accurate or reliable for purposes of complying with SEQRA because the RPS Cost Study is based on flawed assumptions.

Response: The RPS Cost Study acknowledges that there may be "Other Effects" [NY RPS Cost Study Report II, Volume A – Revised: February 27, 2004, at p. 9] not quantified, including the fact that the introduction of large wind resources could cause some increase in the amount of regulation service required by the NYISO and (in the long term) the State's capacity reserve requirement. The extent of these costs, if any, cannot be estimated with certainty at this time as they are largely site-specific. The Phase I Reliability Study does not settle the issue, but also does not demonstrate that the likely level of wind development will exceed thresholds of major concern. Lastly, the RD Cost Analysis and its results are included in the Final GEIS. This analysis refines the baseline assumptions as a result of comments received throughout the process.

Comment: The costs and reliability impacts of installing a significant amount of wind generation cannot reasonably be ascertained until Phase 2 of “The Effects of Integrating Wind Power on Transmission System Planning, Reliability and Operations” (Reliability Study) is completed in November 2004.

Response: The RPS Cost Study acknowledges that there may be "Other Effects" [NY RPS Cost Study Report II, Volume A – Revised: February 27, 2004, at p. 9] not quantified including the fact that the introduction of large wind resources could cause some increase in the amount of regulation service required by the NYISO and (in the long term) the State's capacity reserve requirement. The extent of these costs, if any, cannot be estimated with certainty at this time as they are largely site-specific. The Phase I Reliability Study did not settle the issue, but also did not demonstrate that the likely level of wind development will exceed thresholds of major concern.

Comment: The major flaws that need to be corrected and addressed in a revised Cost Study Report and carried forward into the GEIS are as follows: (1) The MAPS modeling assumes that far more renewable energy can be delivered from Hydro Quebec (HQ) and Ontario Hydro (OH) than the current interface capability can accommodate, greatly exaggerating the likely cost savings from the HQ and OH imports; (2) The MAPS modeling incorrectly assumes the wind resource is perfectly predictable by treating the wind resource as a load modifier, as if the load is always reduced by the wind resource's capacity. Thus, it overstates potential cost savings by exaggerating the ability of wind energy to eliminate operation of non-renewable resources. It also overstates the air emission benefits because non-renewable resources that will be required to run at minimum levels emit pollution at higher rates when averaged against the smaller amount of energy that they will be called upon to produce; (3) The analysis overstates the amount of capacity that needs to be added in New York City (NYC) to meet the NYC reserve margin in 2013 by 1,000 MW, thus understating the cost impact of the RPS because the addition of 1,000 MW of lower priced capacity in NYC will not occur, (4) The Cost Study Report estimates that the addition of renewable resources will displace approximately 9% of existing oil and natural gas generation, yet completely ignores that some of this generation will need to continue operations to be available at minimum generation levels to provide needed operating reserves and regulation. The Phase 2 Reliability Study is expected to quantify the level of operating reserves and regulation that will be needed to accommodate the intermittent nature of wind facilities. The Cost Study Report fails to

consider the cost and emissions impacts associated with the need for this generation to operate at minimum generation.

Response: The RPS Cost Study acknowledges that there may be "Other Effects" [NY RPS Cost Study Report II, Volume A – Revised: February 27, 2004, at p. 9] not quantified including the fact that the introduction of large wind resources could cause some increase in the amount of regulation service required by the NYISO and (in the long term) the State's capacity reserve requirement. The extent of these costs, if any, cannot be estimated with certainty at this time as they are largely site-specific. The Phase I Reliability Study did not settle the issue, but also did not demonstrate that the likely level of wind development will exceed thresholds of major concern. Also, resulting changes to emission levels due to incremental requirements that are determined to be needed in the future due to reliability concerns are expected to be small compared to the changes directly related to the added renewable MWhs. Lastly, the Final GEIS incorporates the RD Cost Analysis, which largely addresses changes to the assumptions recommended in the comment. No need for a supplemental EIS has yet been demonstrated.

Comment: The Commission should not begin the “implementation phase” of the RPS by setting policy on required output levels of renewable resources until a final supplemental GEIS is completed that addresses the Phase 2 Reliability Study and the revised Cost Study Report.

Response: The resulting changes to emission levels as a result of incremental generation requirements that are determined to be needed in the future due to reliability concerns are expected to be small compared to the changes directly related to the added renewable MWhs. No need for a supplemental EIS has yet been demonstrated.

Comment: The Final GEIS should correct the mischaracterizations in the Draft GEIS concerning potential environmental impacts of Waste-to-Energy facilities (WTE). The discussion of WTE air emissions and accompanying chart on pages 99-100 describe

the “Primary hazardous constituents of WTE Stack Emissions” while failing to acknowledge that other renewable resources such as biomass or landfill gas emit equal, or greater, quantities of many of these pollutants. The Draft GEIS leaves the false impression that biomass and landfill gas do not emit hazardous pollutants and that, therefore, WTE is more harmful to the environment. Since WTE admittedly emits these pollutants in “trace quantities” and there is no similar discussion for biomass and landfill gas, the discussion of hazardous pollutants should be stricken from the Final GEIS or a comparable discussion should be added to biomass and landfill gas. In addition, the Draft GEIS incorrectly states that fly ash from WTE facilities must be managed as a hazardous waste. New York’s WTE facilities do no manage their fly ash separately, and no WTE fly ash in the country has ever been characterized as hazardous waste.

Response: Table 6.2.8-2 has been deleted from the Final GEIS. The discussion of ash management and disposal has been revised in the Final GEIS.

Ridgewood Renewable Power

Comment: The Draft GEIS overestimates the environmental benefits of the RPS, by not accounting for the loss of small hydroelectric facilities that are ineligible to participate in the RPS and will likely be replaced by other, ineligible (*e.g.*, fossil-fueled) generation facilitates.

Response: The RPS Cost Study provides for a maintenance adjustment to the Baseline and incremental targets to protect small hydropower projects. The 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 energy contracts.

Renewable Energy Technology and Environmental Coalition (RETEC)

Comment: The description of the proposed action, Draft GEIS at 3, should specifically reference that the goal of this proceeding is to develop and implement an RPS that will ensure that 25% of electricity sold in New York comes from renewable resources by 2013. As indicated elsewhere, Draft GEIS at 1, the 25% goal is specifically referenced in the Commission's Order Instituting Proceeding, Case 03-E-0188, as "being in the public interest," Order Instituting Proceeding, Case 03-E-0188 at 2 (February 19, 2003). An RPS to achieve the 25% RPS standard by 2013 is the target for the working objectives of this proceeding.

Response: The description of the Action has been modified to take into account the goal stated in the Commission's Order Instituting the Proceeding.

Comment: The Draft GEIS makes a passing reference to the benefits of on-site generation but does not attempt to quantify savings from avoided line losses, nor to quantitatively examine the view shed and habitat fragmentation benefits of avoided siting of transmission capabilities.

Response: Section 2.3.4 in the Final GEIS has been revised to reflect additional benefits from on-site generation.

Comment: The Final GEIS should acknowledge that the New York State Greenhouse Gas Task Force Report discussed in the Draft GEIS specifically recommended that New York State adopt an RPS in order to assist in achieving New York State's greenhouse gas reduction goals.

Response: Section 2.4.5 has been revised to clarify the recommendations of the Greenhouse Gas Task Force with respect to reducing greenhouse gas emissions from the electricity generation sector.

Comment: The description of New York State air quality and its public health consequences should be amplified in the Final GEIS. The Draft GEIS only discusses ozone pollution and does not address particle pollution at all.

Response: The Final GEIS has been modified to include further discussion of particulate pollution.

Comment: The Draft GEIS should discuss the issue that the U.S. Environmental Protection Agency has recently designated areas as non-attainment or unclassifiable under the 1997 new "8-hour" national health standard for ozone. Counties designated as in basic non-attainment are Chautauqua; those in the Buffalo-Niagara Region (Erie, Niagara); the Rochester region (Genessee, Livingston, Monroe, Ontario, Orleans, Wayne); Essex (Whiteface Mountain), and the Albany-Schenectady-Troy region (Albany, Greene, Montgomery, Rensselaer, Saratoga, Schenectady, and Schoharie.) Counties that are currently unclassifiable are Cayuga, Madison, Onondaga, and Oswego. Counties in moderate non-attainment are Jefferson, Dutchess, Putnam, and Orange, as well as all of the New York City and Long Island counties. U.S. EPA has also identified a required attainment date for each of these regions in 2009 or 2010 (depending on the region). Significant new policy actions will be necessary to achieve the new ozone standards in New York. The RPS is, in fact, an important mechanism in an overall plan to achieve these clean air requirements. This benefit should be identified and discussed in the Final GEIS.

Response: Please see revisions to Section 4.4 Air Quality in the Final GEIS.

Comment: The Final GEIS should acknowledge that WTE facilities generate significant amounts of solid waste through burning garbage, including fly ash and bottom ash with heavy levels of toxic contamination.

Response: According to DEC, in 2003, the 10 WTE facilities in New York State combusted approximately 3,608, 856 tons of non-hazardous solid waste and produced

approximately 1,013,651 tons of non-hazardous combined ash (fly ash and bottom ash), based on the annual reports submitted by each WTE facility. DEC notes that this represents a reduction of the processed solid waste of 72% by weight and of approximately 80 to 85% by volume. The reference to ash production has been noted in Section 4.5 in the Final GEIS.

Comment: The Final GEIS should acknowledge that withdrawal of cooling water by fossil fuel and nuclear power plants has substantial impacts on fish, particularly fish eggs and larvae, and that re-release of cooling water causes harmful thermal impacts to New York waters. These harmful impacts of existing fossil-fuel and nuclear power plants should also be noted in Section 4.6 of the Draft GEIS, Fish and Wildlife, Draft GEIS at 35.

Response: Section 4.6 of the Final GEIS incorporates language to address this comment.

Comment: RETEC notes its disagreement with the inclusion of green marketing and Executive Order 111 resources in the Base Case in Staff's Cost Study. It asserts that if the lower base case figures that it believes are more reasonable were used, the RPS emissions and other benefits would be even higher than stated in the Draft GEIS.

Response: Future renewable energy projects contributing to the 25% target will be comprised of existing as well a new renewable projects induced by several initiatives such as Executive Order 111, Green Power programs (green marketing) and the RPS. A precise amount that is attributable to each is speculative, but the Commission will balance all factors and consider an RPS that represents reasonable assumptions about other renewable programs.

Comment: The Draft GEIS should note that wind energy, in contrast to fossil fuel generation, poses no public health threats.

Response: It appears that this comment is intended to indicate that wind energy poses no public health threat with respect to air pollution. This issue as well as other impacts are discusses in Section 6.2.1 under Environmental Impacts of Wind Energy.

Comment: The Draft GEIS states that in some cases lengthy transmission lines will be needed to connect wind energy projects to the power grid. (Draft GEIS at 44.) This will be an unlikely scenario. Wind project developers see access to existing transmission lines as a key factor – second only to available wind resources – in determining the viability of a project site. Sites where large investments in lengthy new transmission lines are needed are unlikely to be the sites chosen for development in the near future.

Response: The reference to "lengthy" transmissions lines was removed from the relevant section in the Final GEIS. Proximity to adequate transmission will be among other siting factors in site selection; the significance of that factor cannot be determined at this time.

Comment: The potential impacts of wind energy cited by the Draft GEIS, such as soil erosion and compaction, are generally minimal and can be addressed and minimized through discussions on turbine siting between land owners and project developers and by sound construction management practices, including storm water management (required under State environmental law) and other such practices and requirements. (Draft GEIS at 53-54.)

Response: The phrase "in consultation with the landowner and the appropriate resource protection agency" was added under Mitigation in Section 6.2.1 in the Final GEIS.

Comment: The first line in the description of land use for wind energy is misleading and mistakenly emphasized by its placement as an introductory comment. The Draft GEIS states that “[i]n comparison to other forms of electricity generation, wind energy

projects are land intensive." (Draft GEIS at 48.) However, two sentences later, the report more accurately states that, "[t]he foot print for each turbine is relatively small." As the Draft GEIS acknowledges, the impact on land use of most wind energy facilities will be minimal given that normal activities can be resumed upon project completion and in most cases the land may be used almost up to the turbine's base.

Response: The discussion under Land Use in Section 6.2.1 is intended to convey the distinction that while the footprint of a single turbine is small, the wind energy project as a whole requires large tracts of land to be sited. Because the physical space required for each turbine is small, however, most of the area between turbines can be used for other compatible purposes.

Comment: The GEIS correctly notes that "the threat of avian collision and death is relatively low compared to avian mortality from vehicles, cell towers, buildings, and windows." (Draft GEIS at 50.) As for the cumulative impact of more than 2,400 MWs of wind energy, RETEC agrees that any potential adverse impact would depend on size and location relative to habitat. However, RETEC points out that population-level impact of other energy sources are significant. For example, air emissions of greenhouse gases from combustion technologies are expected to have increasingly significant adverse impacts on birds. These impacts include habitat destruction and induced changes in migration patterns leading to a mismatch between the times of migration and nesting versus available food supplies. See USEPA at http://yosemite.epa.gov/oar/globalwarming.nsf/content/ImpactsBirds.html, and The Birdwatcher's Guide to Global Warming, National Wildlife Federation and American Bird Conservancy, 2002. The Draft GEIS should acknowledge the avian impacts of fossil fuel generation.

Response: The comments regarding avian impacts of fossil fuel generation are more appropriate for inclusion in Section 4.9 Fish and Wildlife of the Final GEIS and are referenced in that section.

Comment: The Draft GEIS acknowledges that visual impacts can be subjective and states that "[m]any . . . viewers may have positive connotations regarding wind power and believe turbines add interest to a view." (Draft GEIS at 51.) The Draft GEIS then suggests, however, that the public's increasing acceptance of wind turbines may not continue as additional projects come on-line. (Draft GEIS at 51-52.) RETEC believes the opposite is just as likely. As the public becomes more familiar with and used to seeing wind turbines and as the environmental and economic benefits are more clearly understood, the public may very well grow even more accustomed to the presence of the turbines. There is increasing acceptance of the need for communication towers if we are going to rely on cell phones and related technologies although there may always be a minority of residents opposed to both.

Response: In general, the public may or may not accept the visual presence of wind turbines. Specific site characteristics and the context and surroundings of the site will, in large measure, determine public acceptability or opposition to specific projects. Individual and community response to existing wind projects, as well as comments on the Draft GEIS, confirm a wide range of public opinions about wind energy facilities.

Comment: While at one point the Draft GEIS states that wind turbines "may have long term effects on . . . ambient noise levels," Draft GEIS at 48, the Draft GEIS later more accurately characterizes the noise impact of modern wind turbines as "minimal." (Draft GEIS at 53.) The earlier statement should be corrected.

Response: The statement about long term effects on ambient noise levels is accurate since ambient noise levels will change, regardless of how minimal, due to wind projects.

Comment: The eligibility provisions for hydro set forth in the Draft GEIS do not sufficiently address the site-specific nature of hydroelectric impacts. The Public Service Commission should develop a set of regulations whereby the site-specific impacts of each hydro project could be separately examined to determine whether specific projects could be certified as "low impact."

Response: Site-specific impacts of the desired renewable energy facilities are not known at this time because the location and details of the facilities are not known. When sites are proposed, appropriate federal, state and local approval processes will evaluate the potential environmental impacts.

Comment: The Draft GEIS does not present adequate justification for the presumption that all run-of-river projects under 30 MW are environmentally benign.

Response: The Draft GEIS did not intend to imply that all run-of-river hydroelectric facilities, or any other type of energy facility for that matter, are totally environmentally benign. The criteria for eligible new hydroelectric facilities was developed, in part, from a collaborative discussions by the parties in this proceeding, definitions used in existing RPS programs and by other entities supporting green market initiatives.

Comment: There is no environmental justification for the inclusion of existing hydro projects (apparently of any type) under 10 MW when their contracts expire.

Response: The justification is that New York State is at risk of losing existing electric generation from established renewable resources, which may be abandoned, once their contracts for energy expire.

Comment: The four categories of upgrades to existing hydropower facilities that the Draft GEIS suggests are eligible for the RPS are unclear and lacking in environmental justification. The last category of upgrade (New Capacity at New Dams) should be eliminated, as it does not apparently refer to upgrades but to new facilities. There is also no evident difference between category 2 (Expanded Capacity at Existing Dams) and category 3 (New Capacity at New Dams). With respect to these categories (expanded or new capacity at existing dams), the exclusion of projects where new impoundments are created is a necessary but not sufficient limitation.

Response: The Final GEIS identifies four classes of incremental hydro production that may contribute to New York's RPS, given the eligibility criteria described in Section 2. The first three categories are considered "upgrades" while the fourth category is considered "new" (see Section A.6.3 Hydorelectric of Appendix A Renewable Resources Cost and Characterists). The four classification of eligible hydroelectric facilities are as follows:

- *Repowering at existing hydroelectric site:* In general, this technology type would be expected to have the least environmental impact, since it involves upgrading existing equipment already installed and operating.

- *Installation of additional capacity at existing hydropower stations:* Many hydroelectric stations may have been built to serve particular loads and were thus not built to maximize potential output. There is potential to supplement existing capacity with additional machinery.

- *Installation of hydroelectric capacity at existing dams used for other purposes:* There are more dams in New York State than there are hydroelectric stations. Many dams may have previously been used for power and were retired. In addition, many dams exist for other purposes, including flood control, water supply, recreation, and irrigation. There may be opportunities for adding hydroelectric capacity to existing dams, which precludes the need of dam construction and likely avoids the substantial environmental and social impact that may result from the construction of new dams and impoundments.

- *Construction of new dams for hydroelectric purposes:* Constructing new dams will likely have the greatest potential environmental impact. Eligible facilities in this category would be limited to a capacity of 30 MW or less with no new storage impoundments (operating as run-of-river).

Comment: In Canada (and the vast majority of expected upgrades are in Canada), turbine additions or repowerings are relatively rare, but many projects have been proposed and/or constructed which increase a hydro facility's annual generation by diverting additional waterways into its reservoir system. It is not entirely clear if the language is meant to include such upgrades. If so, it should be modified to exclude them.

Response: Canadian hydroelectric generation imported into New York would be required to meet the eligibility criteria as described above in order to participate in the RPS program.

Comment: RETEC recommends the development of a certification framework to determine which such projects (if any) should be eligible to be characterized as low-impact and made eligible for the RPS. In the absence of such a certification framework, diversion projects should be definitively excluded from the RPS.

Response: This comment raises a policy issue that the Commission will consider to the degree parties advanced it in their comments and briefs. We note, however, that the required site-specific review of proposed projects should address the impacts of any new water diversions. The existing numerous laws that govern the development of hydroelectric projects, the rigorous permitting processes described in Section 6.2.2 of the Final GEIS and the eligibility requirements for hydroelectric generation is designed to help ensure the minimization of environmental impacts associated with the development of hydroelectric facilities eligible for inclusion in the RPS program.

Comment: The Draft GEIS is silent on the environmental impacts in Canada or New York of including Canadian hydroprojects as eligible for the RPS. The varying degrees of environmental control and licensing requirements between different provinces in Canada and in the United States supports the need for an RPS reciprocity requirement.

Response: As with any future renewable, whether in New York, other states, or Canada, site-specific impacts cannot be determined at this time because specific technologies and sites have not been proposed. Section 6.2 illustrates general impacts expected from each renewable technology regardless of location. Additionally, appropriate regulatory agencies, whether in the US or Canada, will evaluate impacts where specific projects are proposed.

Comment: The Final GEIS should include a more complete discussion of the potential adverse environmental impacts of uncontrolled biomass energy.

Response: The Final GEIS appropriately identifies the general potential impacts of biomass production and procurement under Wood Energy Crops and Forest Resources in Section 6.2.3. Specifically the Final GEIS discusses that poorly sited and managed plantations (including harvesting methods) can increase the risk of soil erosion, result in pesticide runoff, and deplete the soil of nutrients. Likewise, under Forest Resources, the Final GEIS states that poorly managed timber harvesting operations can result in significant impact to forest ecostystems (*i.e*., destruction of significant habitats, uncontrolled soil loss stream sedimentation and visual blight on the landscape).

Comment: Given the range of potential adverse impacts from biomass energy, it is odd that the Draft GEIS section on biomass energy contains no discussion of possible mitigation measures, although the Draft GEIS sections on wind and hydro do. Given the Draft GEIS's acknowledgement that "[t]he use of biomass in combustion technology will produce atmospheric emissions that will vary across biomass technologies, and will depend, in part, upon the properties of the fuel combusted," Draft GEIS at 76, the key form of mitigation that the Final GEIS should recommend is a sufficiently stringent definition of eligible biomass feedstocks and technologies. A more rigorous definition is needed, and RETEC urges that the Final GEIS include biomass eligibility definitions based on the agreement of the biomass working group and RETEC's additional comments set forth in RETEC's September Comments in the RPS proceeding.

Response: Mitigation measures for biomass eligibility are folded into the discussion of Environmental Impacts in Section 6.2.3. Specifically, the Final GEIS identifies that biomass feedstock used for direct combustion technologies be clean, unadulterated wood as identified in Table 6.2.3-1 and Tables 2-1 and 2-1A. In addition, eligibility of a biomass feedstock consisting of harvested wood or silvicultural waste wood is conditioned on that use not adversely affecting long-term forest health or compromising the sustainability of the biomass resource. Also, any tree harvesting operations must be performed in a manner that protects or improves forest productivity and conserves and protects biological diversity, soil and water resources and rare and endangered species. Harvesting operations would also be subject to monitoring, reporting and periodic inspections. These eligibility requirements are based on the agreement of the Biomass Working Group.

Comment: In the introduction to the WTE section, the Draft GEIS states that "WTE plants are unique in power production as they provide a means for municipal solid waste reduction and disposal in addition to power production." (Draft GEIS at 94.) The Final GEIS should also note that EPA's solid waste hierarchy designates both incineration and landfilling as "least preferred" solid waste disposal options.

Response: EPA has ranked the most environmentally sound strategies for Municipal Solid Waste. Source reduction (including reuse) is the most preferred method, followed by recycling and composing, and, lastly, disposal in combustion facilities and landfills. This solid waste hierarchy has been added in the Final GEIS.

Comment: The Draft GEIS also states that "[t]he combustion of MSW also offsets generation of GHG emissions from waste that would otherwise be decaying in landfills." (Draft GEIS at 94.) But the assumption that the biomass portion of MSW is carbon neutral is flawed. The Final GEIS should acknowledge that reuse and recycling produces far greater GHG emission benefits than incineration.

Response: Although EPA calculates that the net life cycle carbon dioxide emission reduction benefits from recycling and source reduction are uniformly higher than those from incineration for a broad range of types of wastes (see 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), it also recognizes that most of the carbon dioxide released from WTE facilities is considered to be part of the Earth's natural carbon cycle.

Comment: The Draft GEIS understates the degree of significance of WTE air emissions in several ways that should be corrected in the Final GEIS.

Response: The discussion under Environmental Impacts in Section 6.2.8 states that WTE facilities emit important emissions, including hazardous air pollutants.

Comment: The Draft GEIS states that WTE plants produce “trace” amounts of mercury. (Draft GEIS at 99-100.) This is a severe understatement. DEC reports that in the year 2000, New York’s WTE were responsible for 26% of mercury emissions in New York. This is the second largest source of mercury in New York State, after coal-burning power plants.

Response: The term "trace" was used to distinguish between the amounts of major criteria pollutants that are emitted compared to heavy metals. The reference to the term has been deleted in the Final GEIS.

Comment: The Final GEIS should identify and discuss the public health risks of mercury, particularly to pregnant women and children.

Response: The discussion of mercury as a public health risk has been expanded in Section 2.3, Public Needs and Benefits.

Comment: Draft GEIS also state that "[m]any of the emissions can be minimized by using both advanced combustion and air pollution control technologies." (Draft GEIS at 100.) This statement ignores the fact that New York's WTE plants are currently required to use advanced combustion and air pollution control technologies and are still producing significant air pollution emissions, as the Draft GEIS acknowledges.

Response: The first sentence in the paragraph on Air Emission under Environmental Impacts in Section 6.2.8 reflects this fact.

Comment: The Final GEIS section on WTE should also address more fully the adverse potential public health and environmental justice impacts of WTE. The Draft GEIS alludes only briefly to "public concerns about emissions and possible health risks," Draft GEIS at 98.

Response: Site-specific public health and environmental justice impacts are appropriately addressed when a specific WTE facility is proposed. The proposed technology and location are essential in order to assess environmental impacts and the effects on the community.

Comment: The Final GEIS should identify and discuss The National Research Council Committee Report's, Waste Incineration and Public Health at 165-170 (National Academy of Sciences Press, 2000), findings as a measure of WTE potential public health risks.

Response: This report was prepared by the National Research Council's Committee on Health Effects of Waste Incineration. The committee was formed to assess relationships between waste incineration and human health and to consider specific issues related to the incineration of hazardous waste, municipal solid waste, and medical waste. The report has been identified in the discussion of WTE in the Final GEIS and is listed as a reference in Section 12.

Comment: The Final GEIS should acknowledge that the likely siting of new WTE facilities raises environmental justice concerns that can only be mitigated by exclusion of WTE from the RPS.

Response: Siting of WTE plants or other facilities will trigger an environmental justice (EJ) evaluation. DEC's EJ Policy prescribes the process and criteria and would be applicable to proposed facilities, including WTE, requiring any permit from DEC.

Comment: RETEC takes exception to the Draft GEIS's reference to the term "unique" with respect to wind energy's impacts on power system operations in this context. (Draft GEIS at 104.) Every type of generation could be considered unique. Where wind energy does not fit completely within the existing market and operating rules of the electric system that is because those rules were specifically written for fossil and nuclear fuel generation and their "unique" characteristics.

Response: The word "unique" has been removed from the sentence.

Comment: Any arguments that additional reserves will be needed when the RPS is adopted are hypothetical only. No electric system is static – changes and adaptations will occur over time and many cannot be predicted with certainty years in advance.

Response: The reference was made to characterize one of the potential impacts of wind energy facilities on the operations of the electric system.

Comment: The Draft GEIS does not appear to include any examination of the environmental impacts of the WTE alternative. As is discussed above, because mercury, nitrogen oxide and dioxin emission rates from WTE plants are orders of magnitude higher than emission rates for those pollutants from combined cycle natural gas plants, and even higher than those from coal-burning power plants, the WTE alternative could have potentially adverse environmental consequences compared to other alternatives.

Response: The assumptions that were made for the WTE alternative analysis in the RPS Cost Study included the addition of two 50 MW plants located in New York City and in the lower Hudson Valley based on the availability of a significant volume of solid waste in that region of NYS. With respect to statewide air emission changes, the substitution of 100 MWs of WTE facilities, if it were reached on the supply curve (the RPS Cost Study indicates that they would not be reached in the 2013 study period), might result in a difference in emissions reduction from conventional fossil-fueled facilities depending on what renewable resources are displaced by the WTE resources. Emission and impact differences, though difficult to quantify, are also possible in the area of non-criteria pollutants.

Comment: While the Draft GEIS states that "[t]here is a range of reductions among the scenarios, but all produce fewer emissions than the Base Case" and that "[t]he long term result of the RPS –under any scenario – is clearly beneficial because of the significant emission reductions," Draft GEIS at 107, the Draft GEIS does not attempt to identify which alternative maximizes environmental benefits. RETEC submits that the RPS Scenario with a 5% SBC-like tier will produce the greatest air emissions benefits, as well as other environmental, public health and economic development benefits, and should be identified as such in the Final GEIS selected by the Commission.

Response: The estimated emission reductions resulting from the RD Cost Analysis are discussed in the Final GEIS. While the RD Cost Analysis presents further refinements to the RPS Cost Study, those results can generally be compared to the results of the RPS Cost Study scenarios. While some scenarios result in greater emission reductions than other scenarios, they may not represent a desirable balance of other factors.

Comment: Although DEC's environmental justice policy may be dependent on geographic location and other site-specific factors, the Final GEIS must still review in greater details the environmental justice and socioeconomic community impacts of the

no-action alternative and the various RPS scenarios. This springs from SEQRA's requirement that EISs examine the impacts of a proposed action on "existing community or neighborhood character." N.Y. Envtl. Conserv. Law § 8-0105(6). Specifically, the RPS should identify the environmental justice and socioeconomic community impacts of the continuation of existing levels of fossil fuel generation, which disproportionately impact low-income communities of color, under the no-action scenario and the environmental justice and socioeconomic community impacts of the WTE scenario.

Response: The GEIS is not the appropriate means of evaluating environmental justice and socioeconomic community impacts of the continuation of fossil fuel generations. The permitting (or renewal) process for those facilities provide a more appropriate and enforceable forum for evaluating such impacts.

Comment: The Draft GEIS states that "there could very well be unavoidable adverse impacts resulting from renewable projects," Draft GEIS at 115. However, as is discussed in Section VI of the Draft GEIS, many of the RPS eligible technologies are not expected to have unavoidable adverse impacts (*e.g.*, solar, fuel cells), and the potential adverse impacts of wind are both de minimis and mitigable. Adverse impacts from RPS technologies such as biomass, biogas and hydro can be mitigated and avoided by defining RPS eligibility for these technologies in an appropriate way. Adverse impacts from WTE can be addressed and mitigated by excluding this technology from the RPS.

Response: The feasibility of avoiding or mitigating impacts is an important and essential step in evaluating specific projects at identified sites. Once impacts of the specific projects are identified, appropriate mitigation and avoidance strategies can be considered.

Comment: The Draft GEIS acknowledges that the no-action alternative would have the unavoidable impact of "continuation of impacts from conventional generation facilities," Draft GEIS at 115, but states that "those impacts have previously been

considered in approval and permitting actions for those facilities and, while the acceptability of some impacts may be challenged by some, for the most party, they have been supported by regulatory actions that have withstood these challenges." Draft GEIS at 115. But, regardless of the permitting status of conventional fossil fuel and nuclear generation, it is abundantly clear that the cumulative environmental impacts from these sources are both highly adverse and unavoidable. Indeed, the Draft GEIS itself acknowledges these impacts at 9-13. In sum, the unavoidable adverse impacts of the no action alternative are orders of magnitude more significant than those of adoption of the RPS.

Response: The GEIS evaluates the differences between the no-action alternative and adoption of the RPS both quantitatively (potential emission changes) and qualitatively (site and technology impacts).

Comment: While the Draft GEIS does a relatively good job of discussing the economic development benefits qualitatively, these benefits along with environmental, public health, and energy security and reliability benefits all have a significant financial value to New York that is not captured in the Draft GEIS.

Response: The GEIS acknowledges the various benefits and impacts of an RPS policy and appropriately acknowledges the important and essential site and project specific information to be considered at a later project specific stage of analysis. Quantifying site specific impacts and benefits before projects and sites are identified would be speculative. General and generic impacts of individual renewable technologies are extensively addressed in the GEIS.

NYS Department of Environmental Conservation

Comment: While the GEIS referenced potential impacts to forest and wetland areas from large wind projects, it did not note temporary and permanent impacts from stream crossings. The placement of turbines and associated construction of interconnections and access roads can potentially impact surface waters including DEC regulated streams.

Response: The Final GEIS incorporates language, as suggested, to note potential impacts on surface waters, including DEC-regulated streams.

Comment: Considering the acreage needed for small and large wind projects, the GEIS should indicate the potential to impact state and federal listed plant species. The document briefly mentioned habitat loss, but did not discuss either threatened or endangered plants.

Response: The Final GEIS notes potential impacts to federally-listed species and threatened and endangered plants.

Comment: The GEIS references potential impacts to wetlands, but should indicate that both freshwater and tidal wetlands could potentially be affected by wind projects.

Response: The Final GEIS incorporates language to note the potential impacts to both freshwater and tidal wetlands that could potentially be affected by wind projects.

Comment: The GEIS discussed the raptor kills at Altamont Pass in California and cites that researchers believe the number of deaths at the California facility are an anomaly given studies in the United States and Europe which show large numbers of birds have not been killed at other sites. Although the GEIS recognized that wind projects can still pose collision risks, DEC Staff cautions that it is premature to draw general conclusions about potential impacts to birds and bats in New York, particularly if

the only studies available were done in areas whose wildlife and geographical features contrast with conditions in New York.

Response: The Final GEIS has modified language to avoid general conclusory statements about impacts to birds and bats.

Comment: The first sentence under Avian Impacts should be revised to read: "Impacts on avian populations have historically received the most attention, ~~primarily due to~~ highlighted by the loss of large numbers . . ."

Response: The suggested language has been incorporated into the Final GEIS.

Comment: The GEIS' conclusion that a large kill of birds is an anomaly and that only large wind projects pose a collision risks should be revised. This conclusion presumes all populations of birds and bats can withstand "large" kills and that only large facilities have impacts. The GEIS mentions raptors, but raptors are not the only category of birds that may be impacted. DEC Staff recommends that state and federal listed endangered, threatened, and species of special concern, be mentioned in the GEIS along with resident and migrating passerines, regardless of the fact that some of these species may exist in greater numbers.

Response: The Final GEIS incorporates language to acknowledge potential impacts to state and federally-listed endangered, threatened, and species of special concern, as recommended.

Comment: DEC Staff recommends that DPS Staff amend the second conclusion made in the GEIS, which asserts that avian impacts from wind turbines are "relatively low" compared to the threat faced by vehicles, cell towers and other structures. This infers the State should not be concerned with the effects of wind turbine development on birds, based on numbers alone. From a resource management perspective, DEC Staff has two concerns with this conclusion. First, as indicated above, it presumes the

State should only be concerned with impacts involving “large” numbers, regardless of species. Second, the GEIS presumes the population of birds impacted by cell towers and vehicles are composed of the same species impacted by wind turbines, when in fact species distribution, habitat, and migration patterns put birds and bats in different paths of harm. As a result, potential impacts from any proposed project will need to be assessed on a site-specific basis and mitigated to the maximum extent practicable. Since the State should encourage impact mitigation wherever feasible, DEC Staff requests that the document be amended accordingly.

Response: Please see revisions to Avian Impacts in Section 6.2.1 in the Final GEIS, which addresses this comment.

Comment: As a basis for the argument that wind turbines pose little risk to avian species, the GEIS indicates that DPS Staff considered avian risk assessments conducted for proposed wind farms in New York State. While desktop risk assessments can be helpful, their success in predicting likely impact scenarios depends greatly on what assumptions are made about species abundance, weather, time of year, as well as a multitude of other factors. In addition, there has been no determination that the risk assessments relied on by DPS Staff have statewide applicability. As a result, such studies should be used cautiously, with appropriate caveats. Conditions in the eastern and western part of the state or inside and outside migratory flyways can be vastly different and there is no substitute for site-specific data.

Response: Please see revisions to Avian Impacts in Section 6.2.1 in the Final GEIS, which addresses this comment.

Comment: The GEIS should reference the potential to impact bat populations, particularly the Indiana Bat, listed as endangered in New York, and the Small-footed bat, a species of special concern.

Response: Please see revisions to Avian Impacts in Section 6.2.1 of the Final GEIS, which addresses this comment.

Comment: The GEIS acknowledged the need for pre- and post- construction studies to monitor impacts on wildlife. For both pre- and post- installation monitoring, it is important for developers to consult with the relevant resource agencies prior to implementation to ensure studies are properly designed.

Response: Consultation with relevant resource agencies was added under Mitigation in Section 6.2.1 in the Final GEIS.

Comment: DEC Staff recommends that the section on avian impacts be revised consistent with the descriptions of other renewable technologies in the GEIS, which identified potential impacts without drawing any conclusions. Since this document is a generic impact statement, and is not meant to be a comprehensive review of every study conducted to date on wind power and bird and bat impacts, Department staff recommend that the GEIS not accept or reject the findings of a small subset of documents created for specific projects.

Response: Please see the discussion under Avian Impacts in Section 6.2.1 in the Final GEIS.

Comment: The GEIS recognizes the potential for wind farms to have visual impacts on resources of statewide significance, an impact that serves as a basis for the Department's visual policy, *Assessing and Mitigating Visual Impacts* (Program Policy # DEP-00-2). The last paragraph regarding off shore wind proposals should also note the potential to impact significant state visual resources.

Response: The Final GEIS incorporates language to note potential impacts of significant state visual resources from off-shore wind energy facilities.

Comment: Under the Department of the Interior, please add to the list of statutes: The Bald and Golden Eagle Protection Act.

Response: This statute has been added to the list in Table 6.2.1-3 in the Final GEIS.

Comment: On page 56, the Department of Agriculture and Markets should be added to the list of permitting agencies. Also, stormwater construction permits should be included in the list of possible DEC permits.

Response: Although not a direct permitting agency, the Department of Agriculture and Markets requires that a Notice of Intent be filed for construction projects within County adopted, State Certified agricultural districts. Its role has been included in the Final GEIS. Also, stormwater construction permits have also been identified in the Final GEIS.

Comment: The table entitled, State Permit, Actions or Authorities, should include 6 NYCRR Part 663 Freshwater Wetlands Permit requirements and State Pollutant Discharge Elimination System permit requirements for stormwater discharges from construction activities. DPS Staff may also want to reference DEC's tidal wetlands regulations, as off-shore proposals may involve tidal wetlands.

Response: These permit requirements have been added to the appropriate table in the Final GEIS.

Comment: The table shows DEC as the involved agency for SEQRA. Since SEQRA applies to all state agencies, the table may be interpreted to mean that DEC is the only agency implementing SEQRA. Under the heading "Agency" next to SEQRA, please change "DEC" to "All Agencies."

Response: The table has been modified accordingly.

Comment: While the GEIS included New Source Performance Standards and National Emission Standards for landfill flares and other energy recovery devices, it should indicate that flares and energy recovery equipment is subject to New Source Review regulatory oversight (both attainment and non-attainment). At a minimum, the energy recovery equipment would be subject to 6 NYCRR Subpart 227-1 requirements and the 227-2 requirements if they qualify as a major source.

Response: The Final GEIS incorporates these requirements.

Comment: The GEIS indicates that a "project may utilize a low dam, or no impoundment at all" and that "the amount of electricity able to be produced at any one time is primarily determined by the amount of water naturally available." However, almost all hydroelectric facilities in New York operating in run-of-river mode are located on impoundments created by dams. Since in-flow instantaneously reflects out-flow from these impoundments, they are not impoundments in the sense that dams are used to create a head differential. The availability of natural water does, in part, determine the availability of electric generation but the project impoundment that creates head differential has a greater influence on the amount of electricity that can be produced. The height of the dam does not necessarily determine the mode of operation, as the discussion appears to indicate.

Response: Please see the discussion under Technology Overview in Section 6.2.2, which incorporates language suggested above to clarify mode of operation of hydroelectric facilities.

Comment: The first full paragraph on page 63 should be modified to read: "Dams may also result in stratified temperature and nutrient levels as a result of the lack of natural mixing during winter and summer. Dissolved oxygen (DO) levels may often drop below minimum standards in the lower portion of the water column, which can lead to hypoxic or anoxic conditions for aquatic organisms. When this water is released from the bottom of a reservoir, DO problems can result in the downstream riverine reaches,

affecting the aquatic biota. In addition, water ~~may sometimes~~ ~~pass~~ passed over a spillway~~,~~ rather than through the turbines, sometimes ~~causing~~ causes air to be trapped in the water column.~~, creating a~~ This condition may result in gas bubble disease that, in some fish species, could be ~~fosters~~ lethal ~~gas bubble disease~~."

Response: The suggested revisions have been incorporated into the Final GEIS.

Comment: DEC Staff's concerns about gas bubble disease have typically been addressed with properly designed spillways that avoid this impact. Gas bubble disease has not been documented to be an issue at any of the hydroelectric facilities in New York.

Response: This information has been noted in the Final GEIS.

Comment: On page 65, please change "eurasion watermilfoil" and "purple loostrife" to Eurasian watermilfoil and purple loosestrife.

Response: The corrections have been made in the Final GEIS.

Comment: The last paragraph on page 70 states that projects exempt from FERC review may be subject to New York's Power Law and SEQRA. It goes on to state that under SEQRA, projects would require scoping and consultation with other governmental, public and private interests. Under SEQRA, scoping and consultation would be required if the action was a Type 1 action. However, under Energy Law Section 21-106, small hydro facilities are unlisted actions under SEQRA, making coordination and scoping optional.

Response: Section 6.2.2, Permits and Approvals has been modified to reflect this comment in the Final GEIS.

Comment: In the second row of the table, under Regulatory Authority please change "Article 15.0503" to either "Section 15-0503" or "Article 15, Title 5" to be consistent with the more generic reference to Title 5 permits.

Response: The corrections have been made in the Final GEIS.

Comment: The table indicates that DEC is the agency with jurisdiction over floodplain management. In fact, local governments have the authority to take action to achieve and maintain participation in the national flood insurance program for any area within their jurisdiction. For state actions, ECL §36-0111 sets out the responsibilities of state agencies concerning state facilities, lands and programs. The reference to Section 500.3 should, therefore, be deleted.

Response: The reference has been deleted in the Final GEIS.

Comment: The GEIS did not reference the potential for tidal projects to impact aquatic resources. Although this technology is still being developed, the potential impacts to marine life and habitat will be an important siting consideration.

Response: Potential impacts on aquatic resources has been noted and incorporated in the Final GEIS.

Comment: On page 93, the GEIS refers to the Roosevelt Tidal Energy Project demonstration phase as if it were under construction. To avoid any confusion, please revise the last sentence of the page to read: "In the demonstration phase of the project, now ~~underway~~ under review, a small number of turbine generators ~~are being~~ would be installed and monitored.

Response: The suggested revisions have been made in the Final GEIS.

Comment: The Department recommends that the term “trace” to characterize WTE emissions be deleted. Based on Staff’s experience with these facilities and stack test data, most of the pollutants listed in the GEIS are emitted in quantities not understood to be “trace” amounts by standard regulatory definitions. Stack test results are available and would indicate the actual emissions of WTE facilities. DEC Staff would be willing to provide and explain the stack test results to DPS Staff to support this revision.

Response: The term "trace" was used in this instance to help distinguish between the relative larger amounts of the predominant criteria pollutants that are emitted compared to heavy metals such as mercury. The term has been deleted in the Final GEIS.

Comment: The GEIS should be more precise in characterizing pollutants as hazardous. For instance, in Table 6.2.8-2, NOx and CO are criteria pollutants but the table heading indicates that they are “hazardous” constituents of WTE stack emissions. DEC advises that the heading remove the reference to hazardous and that O_2 be changed to $SO_{2.}$

Response: Table 6.2.8-2 has been deleted and replaced by a qualitative description of emissions from WTE facilities.

Comment: In Table 6.2.8-2, Staff also suggests that in the first column “dioxins and furans” be changed to read “Organics” and that “Organic Compounds” be changed to “Other HAPs,” to conform to more readily used references to those pollutants.

Response: Table 6.2.8-2 has been deleted in the Final Draft GEIS and replaced with a qualitative discussion of emissions from WTE facilities.

Comment: Under Siting and Permitting Requirements, the reference to “40 CFR 60 Subpart BBBBB” should be “40 CFR Subpart BBBB” and the GEIS should include DEC’s incinerator regulations at 6 NYCRR Part 219 in the list of applicable requirements.

Response: The Final GEIS includes these corrections and the applicable regulatory requirements noted above.

Comment: The GEIS correctly recited the regulatory provisions as they relate to minor sources, however, DEC Staff notes that every WTE facility in New York qualifies as a major source under Part 201.

Response: The Final GEIS incorporates the corrected regulatory provisions as cited above.

Comment: The following modifications should be made to the discussion on environmental justice:

- Page 113, third sentence: "Hence, the case by base review of specific projects may trigger applicability of the Environmental Justice Policy, which is dependent on geographic location, the community demographics of the project area and existing impacts on that community ~~is not known at this time~~. ~~Rather, it~~ Applicability will be evaluated . . ."
- In the quote on page 114, please remove the sentence beginning with, "Fair treatment means that no group. . ."
- In the next sentence, please revise to read: "The procedures described in the policy are to be incorporated into the DEC permit review process when DEC ~~serves as Lead Agency~~ receives an application for an applicable permit type, as specified in the policy." Please remove the remainder of the paragraph.
- Second sentence of next paragraph, please amend to read: "Depending on the outcome of the screening, DEC may provide guidance to the applicant, ~~and~~ may require that an enhanced public participation plan be developed and may require an analysis to ensure that impacts do not disproportionately affect potential environmental justice areas, among other requirements. The disproportionate impact analysis is currently under development by DEC."

Response: Refer to Section 7.2 of the Final GEIS for modified text regarding the Environmental Justice Policy. More details can be found on the NYSDEC website regarding DEC's EJ Policy.

Comment: The following edits should be made: page 99 last sentence, Table 6.2.7-2 should be 6.2.8-2 page 99 in footnote 33, MWS should be MSW page 103, fifth sentence under Siting and Permitting, small WTE have until 2005 to comply.

Response: The above changes have been reflected in the Final GEIS.

Integrated Waste Services Association (IWSA)

Comment: Page 95: Receiving, storage and feeding system: The statement, "[t]he transfer station is generally relied upon to provide waste that is free of materials prohibited from combustion by law" is misleading. It is true that waste-to-energy and all other disposal facilities expect transfer stations to comply with the laws regarding acceptable wastes. However, it is not true that waste-to-energy facilities "rely" upon transfer stations as the screener of unacceptable waste. All waste, including waste delivered by transfer trailer from transfer stations, is subject to the waste-to-energy facility's inspection program including radiation detection, visual screening, and random inspections. Much of the waste delivered to New York's waste-to-energy facilities does not come from transfer stations, but directly from route vehicles.

Response: The Final EIS incorporates the suggested revision in Section 6.2.8.

Comment: Page 96 – 97: Ash handling systems: This section implies that bottom ash is managed separately. It is not. All of New York's waste-to-energy plants combine bottom ash and fly ash within the walls of the plant. The combined ash is wetted to control dust, stored and transported off site. Ash residue is tested in accordance with state and federal law, regulation and guidance. The ash consistently tests non-

hazardous, and in fact 238,832 tons currently is beneficially reused as landfill cover and roadbed material. This represents 23 percent of the total waste-to-energy ash generated in the state.

Response: The Final GEIS incorporates revised language in the above-referenced paragraph in Section 6.2.8 to reflect the information provided in the comment.

Comment: Page 97: Refuse-derived fuel: This section is not relevant to New York waste-to-energy facilities. None of the state's ten waste-to-energy plants are refuse-derived fuel (RDF) facilities.

Response: The discussion on RDF was not intended to imply that any of the WTE facilities in New York use the RDF system. Rather, it was included because it is often cited as a well-developed technology in the industry.

Comment: Page 99: Air emissions: This entire section appears intended to demonstrate without use of quantifiable fact or analysis that waste-to-energy emissions severely impact the environment. The Section makes irrelevant the current, independently verified low emission rates that are readily available through both state and federal websites. The Section describes in detail various hazardous air pollutants that are emitted in trace quantities, often tested and non-detected in the stack, without any acknowledgement that many of these same pollutants are emitted in comparable or higher quantities by other combustion technologies using fuels such as wood or landfill gas. There is no discussion of the significant number of organic emissions emitted by landfill gas that are not emitted by waste-to-energy facilities. There is no equivalent discussion in the biomass or landfill gas sections of the Draft GEIS of volatile organic compounds (VOC), dioxin, carbon dioxide, nitrogen oxides, sulfur dioxide or metal emissions from biomass or landfill gas in the sections pertaining to those technologies. The Draft GEIS suggests but cannot document because it is false that emissions of the listed pollutants do not result from the combustion of any renewable fuel other than municipal solid waste.

Response: The intention of the discussion was to illustrate the emissions of concern from WTE facilities, despite improvements in control technologies and tightening of emissions standards. Discussion of air emissions for the other combustion technologies have been appropriately characterized and include discussion of the emissions, including mercury and other HAPS that may be emitted depending on the feedstock and conversion/control technologies utilized.

Comment: Table 6.8.2-2 is a prime example of this misleading description. Many pollutants are listed, and their adverse effects are listed, without providing any data or perspective whatsoever as to the actual emissions resulting from WTE energy plants. This table does not appear in the sections describing wood wastes and landfill gas technologies, despite the fact that those facilities emit the pollutants listed.

Response: Table 6.2.8-2 has been deleted. However, it is documented in data reported by the DEC that, on average, WTE facilities in New York emit greater amounts of heavy metals (*e.g.*, mercury, lead, cadmium) than either landfill gas or wood energy facilities on a lb/GWh basis.

Comment: <u>Page 101 -102: Solid and Liquid Waste:</u> The discussion regarding waste-to-energy ash is flatly false. Fly ash from New York's waste-to-energy plants has no special disposal requirements as described in the Draft GEIS. First, the fly ash and bottom ash from all of New York's plants are combined inside the waste-to-energy building. Ash streams are not managed separately. No waste-to-energy ash in the country has tested as hazardous, and none ever has required management as a hazardous waste. This includes the few plants in the country that test fly ash and bottom ash separately. While it is true that the concentration of heavy metals in ash is greater than in municipal solid waste on a volumetric basis, the important metric is whether those metals leach out under landfill conditions. Years of testing and landfill experience have shown that they do not.

Response: The discussion under Solid and Liquid Waste has been revised in the Final GEIS to address the comments regarding fly ash disposal requirements.

Comment: Page 102: Other operation impacts: This section of the Draft GEIS presents vague, unsubstantiated and factually incorrect statements as facts. It also creates a fantasy scenario of negative impacts that is difficult to respond to because of placement of caveats such as "may", or "are likely to". The PSC has created a vague impression of negativity without providing any data or substantiating information whatsoever. Hauling municipal solid waste to a waste-to-energy plant is no different than hauling municipal solid waste to a landfill, and yet no statement or analysis of hauling impacts is made in the Draft GEIS section pertaining to landfill gas-to-energy. The comment about traffic conveniently ignores the fact that regardless of where the garbage goes, it has to be transported somewhere. WTE can reduce long-haul transport of municipal solid waste by transfer trailer, thereby reducing transport emissions overall, yet no mention is made of that fact. The discussion of "WTE facilities in urban areas" is irrelevant, and again presupposes nothing but negative impacts from WTE.

Response: The section correctly identifies potential impacts that would be considered and evaluated for any new WTE facilities proposed for construction and operation, as was assumed in the RPS Cost Study WTE scenario.

Comment: The sentence "WTE facilities in urban communities are likely to experience greater adverse impact than facilities in less populated areas" is poorly written and unsubstantiated. If the intent of the sentence is a claim that an urban waste-to-energy facility *creates* a greater adverse impact than a rural one, then the statement is false as it stands. Individual locations may prove better than others, as is the case with every renewable technology such as wind, solar, biomass and landfill gas. For example, operation of a wind farm in an urban area or near an airport may create more impact than its location far from a city. A biomass facility located in congested traffic areas would have trucks sitting idle and emissions increasing awaiting entrance to the

plant. These are site specific considerations that apply to all technologies. WTE plants are no different. From a generic standpoint, which is the focus of the Draft GEIS, the operation and impact of a WTE facility will be the same regardless of an urban or rural location.

Response: The discussion is intended to acknowledge that a facility, such as WTE, that generates a significant amount of continuous traffic, as well as emissions, are more likely to generate impacts in high density areas where traffic issues already exist. Further, greater populations mean greater exposure and risk of emission impacts. The Final GEIS provides further clarification.

Comment: Page 102: Construction Impacts: While we have no disagreement with this section per se, we do question why waste-to-energy is the only technology where this impact is discussed. Construction impacts from waste-to-energy should be no different from similar impacts for other types of power plants.

Response: The Final GEIS addresses construction impacts of other technologies.

The Ripley Hawk Watch

Comment: The Draft GEIS takes as gospel that the Altamont Pass project is an anomaly because, to date, no other wind energy facility site has been found to affect large numbers of raptors or any other birds. But the data documenting the dire environmental affects of the Altamont Pass project are not anomalous at all but rather perfectly consistent with what should be expected if a turbine project is located on a major raptor flyway or in an area where endangered raptors are known to nest or where they are concentrated for other reasons.

Response: The footnote corresponding to that discussion in the Final GEIS addresses the reasons why the numbers were anomalously high compared to that observed at other wind energy facilities.

Comment: The Draft GEIS states, better siting considerations have minimized the number of avian casualties . . . There aren't any projects in major flyways in the northeast at this time. But the better siting considerations are under siege by the wind-power industry and consequently are in danger of becoming a thing of the past. If sensible siting procedures are successfully compromised by the industry we shall discover the extent to which the Altamont Pass data is not anomalous. Siting criteria are critical to New York State's renewable energy portfolio standard. At present the only criteria are those of the USFWS. New York State needs to adopt siting criteria and then discover a mechanism for seeing that the criteria are observed.

Response: DEC staff, in cooperation with the United State Fish and Wildlife Service, has been very involved in the siting of the wind projects proposed in New York State. The two agencies are working together to become more knowledgeable about proper siting considerations for wind energy facilities to be able to assist the wind energy industry in integrating wind facilities with New York's environment while continuing to protect the state's natural resources.

Comment: The Draft GEIS also omits the affects of turbine projects on endangered bat species. The USFWS criteria are designed to address this problem as well as avian issues. Although bat migration is not necessarily well-understood, the consensus is that bats in migration are influenced by many of the physical features of the landscape that influence raptors. The threat to raptors in the Great Lakes flyway also applies to endangered bat species.

Response: The Final GEIS includes a discussion of endangered bat species under Avian Impacts in Section 6.2.1.

Chautauqua County - Citizens for Responsible Wind Power

Comment: Wind power is a renewable energy resource, but it is not benign. Wind power development without appropriate siting guidelines and regulatory controls can harm the environment, local economies and community character.

Response: The discussion under Environmental Impacts of Wind Energy in the Final GEIS recognizes this position.

Comment: The Generic Environmental Impact Statement does not fully recognize the significance of many of the potential negative environmental impacts of wind power projects, nor does it address the lack of regulatory control on these electrical generating facilities.

Response: The Final GEIS provides a general discussion of the impacts most commonly associated with wind energy. Appropriate federal, state and local approval processes will evaluate site-specific potential impacts when specific projects are proposed for construction.

Comment: Danger to migrating and resident birds and bats, including endangered and threatened species: Industrial wind power developments can have a devastating effect on birds and bats when they are not properly sited. The Ripley Hawk Watch is submitting detailed comments and recommendations regarding this issue, and the CCCRWP supports their position.

Response: A discussion of potential impacts to avian species, including bats, from wind energy facilities, is included under Avian Impact in Section 6.2.1 in the Final GEIS.

Comment: Incompatibility with Zoning, Comprehensive Plans and Community Character: The comprehensive plans of many rural communities place a high priority on maintaining rural and historic qualities. Industrial wind turbines, 400+ feet tall, with

spinning blades and flashing lights are generally incompatible in areas of scenic agricultural and historical significance. Wind-turbine projects constitute an industrial use in neighborhoods zoned residential-agricultural and are, in many cases, in conflict with the well thought out planning.

Response: Wind energy facilities that have the potential to affect zoning, comprehensive plans and the rural and historic qualities or character of a community would be required to be reviewed under SEQRA. If the lead agency determines that the proposed action has a potential to change a community in such a way as to cause major modification to the community character of an area, a determination of significant impact would be reasonable and the project sponsor would be required to prepare an environmental impacts statement.

Comment: Conflicts with Residential Areas: New York is more densely populated than the areas in the western U.S. that have previously hosted wind power developments. Rural areas of New York are often a mixture of residential and agricultural use. Large electrical generating turbines are incompatible with residential use.

Response: The Final GEIS discusses residential and agricultural land use impacts in Section 6.2.1.

Comment: Noise: Wind turbines create industrial noise. In rural areas, this noise can be a significant increase from the extremely low background noise. The noise will exist as long as the turbines stand, creating a potential for life-long hardship to unfortunate residential neighbors. Developers claim that the noise is barely perceptible. However, wind power developers in other areas have offered to buy nearby homes because they could not otherwise mitigate the complaints.

Response: The Final GEIS discusses Noise Impacts of wind energy facilities in Section 6.2.1.

Comment: Safety Concerns: Concerns about safety become heightened when industrial wind turbines are in residential areas. Ice throw from the spinning blades, stray voltage, lightning strikes, and fires are serious issues that have not been thoroughly addressed. Many towns do not have zoning or setback requirements that adequately address safety.

Response: The safety concerns expressed above are more appropriate for consideration during the review of site-specific projects that are proposed for construction.

Comment: Impacts on Groundwater and Private Water Supplies: The massive concrete turbine foundations (30' x 30' x 30') can affect the quantity and quality of drinking water supplies of nearby rural residents.

Response: A discussion of potential impacts on groundwater resources has been added to Section 6.2.1 in the Final GEIS.

Comment: Negative Impacts on Tourism: Wind power developers, and state agencies such as NYSERDA, tout the benefits of wind turbines to tourism, saying that tourists will be attracted to view them. While it may be true that curiosity seekers might get off the highway to take a look, it is doubtful that any will stay the weekend in a bed and breakfast to "enjoy" the spinning blades and noise. Tourists come to our rural communities to enjoy peace, quiet and the historic agricultural atmosphere. As wind turbines begin to proliferate in the rural New York landscape, the novelty will disappear, and even curiosity seekers will disappear.

Response: Viewer perception towards wind energy facilities is noted under the discussion of Visual Impacts in Section 6.2.1.

Comment: Microclimate Effects: The effects of lines of turbines on local agricultural microclimates have not been studied. This is a major concern to grape growing areas, such as Chautauqua County's Lake Erie shoreline, and the Finger Lakes region, where the site-specific microclimate is of utmost importance. Any change in the wind patterns that protect the grapes from frost can potentially have devastating consequences.

Response: A proposed wind farm that has a potential to adversely affect an agricultural resource, as described above, would be a basis for a lead agency determination that a project may have a significant impact on the environment and require the preparation of an environmental impact statement.

Comment: Decreased Property Values: Wind turbine projects are frequently proposed in mixed *residential* and agricultural areas. We have found no *unbiased* studies of the residential real estate values in areas within sight or sound distance from turbines. However, common sense dictates that a homebuyer will choose a home away from an industrial turbine over a home close to one.

Response: The Effect of Wind Development on Local Property Values, by the Renewable Energy Policy Project, May 2003, is a recent study that reviews data on property sales in the vicinity of wind projects and uses statistical analysis to determine whether and the extent that the presence of a wind energy project has had an influence on the sale prices of properties.

Comment: The GEIS suggests that current policies and regulatory controls are sufficient to prevent inappropriate wind power development. This is not the case. The Executive Summary of the GEIS states: "Site-specific impacts of desired renewable resources are not known at this time. However, appropriate federal, state and local approval processes will evaluate site-specific potential impacts." In the case of wind power, this is not correct. Wind power projects can slip through the cracks of the current regulatory system.

Response: It would appear unlikely that a wind power project could slip through the cracks of the current regulatory system. Even the need for a local building permit required to be issued by a municipality would trigger the SEQRA process. The Lead Agency, with the decision making responsibility for the action, would be required to perform a hard-look test to show that it identified relevant areas of environmental concern, thoroughly analyzed them for significant adverse impact and supported its determination with reasoned elaboration. If it fails to do so, then the approved action could be challenged and nullified.

Comment: The hands-off approach suggested in the GEIS is not acceptable. In has been our experience that local controls without siting guidelines and other regulatory oversight will not sufficiently protect the environment. The Renewable Portfolio Standard is driving private developers to construct wind power facilities. Therefore, the RPS must include provisions for wind power siting guidelines and regulatory controls to provide the necessary checks and balances. If no such controls are instituted, the system will be biased in favor of the quick profit for private developers and payoffs for cash-strapped rural communities, not for long-term environmental sustainability.

Response: Agencies charged with protecting the environment have taken an active role in the review and permitting of proposed wind power projects across New York State. DEC staff, in cooperation with the United States Fish and Wildlife Service, are becoming ever more knowledgeable about proper siting considerations for wind energy facilities to protect natural resources. Likewise, the Department of Agricultural and Markets has provided its expertise in the siting, construction and restoration of facilities affecting agricultural resources. Other state and local agencies are available for consultation to municipalities to assist in the review of projects.

Comment: Comprehensive wind power siting guidelines should be developed that (1) incorporate the U.S. Fish and Wildlife Service interim guidelines and (2) include restrictions on wind power development in historic areas, residential areas, areas that conflict with local comprehensive plans. Citizen groups should be among those

assisting in establishing the siting guidelines. Local town boards should play a significant role, but should not have the sole decision-making power in the cases where there are inter-municipal, interstate or international implications. There should be a limit on all state funding, tax incentives and state energy purchases to those wind power projects that comply with the above stated siting guidelines.

Response: DEC staff, in cooperation with the United State Fish and Wildlife Service, has been very involved in the siting of the wind projects proposed in New York State. The two agencies are working diligently to become more knowledgeable about proper siting considerations for wind energy facilities to be able to assist the wind energy industry in integrating wind facilities with New York's environment while continuing to protect the state's natural resources. In addition, NYSERDA is making funds available to help local governments prepare for the development of wind power generating facilities that are proposed for their communities.

Comment: There should be a requirement for wind power projects to guarantee opportunities for public involvement. Wind power projects must comply with the public involvement guarantee to obtain any state funding, tax incentives and state energy purchases.

Response: Public involvement opportunities currently exist in the regulatory processes for the review of wind power projects. In addition, many wind developers are currently conducting their own public involvement programs in an effort to provide outreach to the host communities.

NYS Attorney General

Comment: The AG has identified three shortcomings in the Draft GEIS with respect to demonstrating public need. First, the Draft GEIS does not sufficiently describe the public health problems that are exacerbated by power plant emissions. Second, the Draft GEIS does not describe how the RPS can reduce the disproportionate impact of

power plant pollution on low-income and minority communities. Lastly, the Draft GEIS does not describe the environmental and public health impact of mercury emissions from coal-fired power plants.

Response: Existing power plant emissions are controlled by individual permits applicable to each plant and have been evaluated by appropriate regulatory agencies. The potential benefits of an RPS could be reduction of use of existing plants but there are many factors involved in determining actual levels of operation, which plants are affected and which communities are impacted or benefit.

Comment: The Draft GEIS does not include a description of these two recent updates to the NAAQS. First, the Draft GEIS does not mention that EPA revised the NAAQS for ozone in 1997, after determining that the old standard (the standard that is referred to in the Draft GEIS) was not adequate to protect public health. The new ozone standard moves from a one-hour standard of 0.12 ppm, to an 8-hour standard of 0.08 ppm. While its designation decision is not yet final, the EPA has preliminarily designated 29 counties in New York State in non-attainment of the more stringent ozone standard.

Response: The discussion under Air Quality in Section 4.4 has been updated in the Final GEIS.

Comment: The Draft GEIS also fails to mention EPA's 1997 revisions to the NAAQS for PM. This standard was updated in response to a growing number of studies identifying the adverse health effects of PM and a recognition that the old standard that applied only to PM10 (particulate matter equal to or less than 10 microns in size) was not adequately protective of public health.

Response: The Final GEIS provides an updated discussion under Air Quality in Section 4.4.

Comment: The Final GEIS should recognize the role the RPS can play in helping the State to meet the updated health-based standards for PM and ozone.

Response: Please see Section 4.4 in the Final GEIS.

Comment: The Final GEIS should describe in greater detail the public health need for these emission reductions.

Response: Please see Section 2.3 in the Final GEIS.

Comment: The Draft GEIS does not describe the need to reduce the disproportionate impact of polluting facilities in minority and low-income communities. Due to transmission constraints and reliability requirements, much of New York City's electricity generation must be sited within the City. These power plants, including fossil-fueled "peaker plants" that are activated, *inter alia*, on hot, summer days when electricity demand is greatest, are often located in low-income communities, and, as such, may contribute to disproportionate health impacts in these communities.

Response: The Final GEIS recognized the importance of appropriate regulatory agencies in evaluating regional and community impacts. An RPS is one factor that may determine how much existing plants run, but it is the existing plant permits that control emissions and it is the environmental regulatory agencies that enforce those permit limits.

Comment: The Draft GEIS does not include a description of the environmental and public health impacts of mercury emissions from coal-fired power plants. The Final GEIS should describe the need to reduce mercury emissions from the electricity generation sector, and the role an RPS can play in reducing these hazards.

Response: Please see revisions to Section 2.3 in the Final GEIS.

Comment: The Draft GEIS does not adequately describe mitigation measures that could minimize the environmental impact of the proposed action. The Draft GEIS concludes that since the RPS will result in emission reductions in varying degrees, depending on the details of the ultimate RPS strategy, "mitigation of impacts is not applicable to an action that results in benefits." This conclusion ignores specific adverse environmental impacts that could occur depending on what resources are included in the RPS, in particular the impacts from biomass and WTE, and ignores reasonable measures that could be taken to minimize these impacts. Potential measures include imposing strict eligibility standards on biomass, and excluding WTE as an RPS-eligible resource.

Response: Specific mitigation measures are most appropriately defined when a technology and a site are proposed. Eligibility standards are among the factors that the PSC will balance in determining the RPS policy.

Comment: The GEIS should include a description of biomass eligibility standards that could minimize or avoid the adverse environmental and public health impacts that could arise from the inclusion of biomass in RPS eligibility.

Response: The discussion of eligibility standards for Biomass is included in Tables 2-1 and 2-1A in the Final GEIS. Only clean, unadulterated biomass fuel sources are currently proposed for inclusion in the RPS as defined in Table 2-1A. Also, a supplier of harvested wood or silvicultural waste wood is required to 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. Additionally, with respect to manure methane digesters, 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 Management (AEM) Framework & Resource Guide* developed by the NYS Department of Agriculture and Markets and the NYS Soil and Water Conservation Committee.

These eligibility standards were developed by the Biomass Eligibility Working Group, which submitted recommendations for biomass eligibility on August 8, 2003.

Comment: The Final GEIS should propose the exclusion of WTE as an RPS-eligible resource as a mitigation measure of the proposed action.

Response: Eligible Resources and eligibility standards are among the factors that the PSC will balance in determining RPS policy.

Plug Power, Inc.

Comment: The Draft GEIS does not fully characterize the environmental benefits and the development potential of fuel cells. The Draft GEIS does not mention one of the most significant benefits of fuel cells. Development of fuel cells has been identified as critical to the continued progress toward a hydrogen-based energy system.

Response: Section 6.2.6, Environmental Impacts, has been revised to recognize the emissions benefits of advancing fuel cells towards the use of hydrogen as a fuel source.

Also, Table 6.2.6-1 has been revised to reflect the potential fuel cell development potential advanced in the RD Cost Analysis.

Comment: The Draft GEIS makes a passing reference to the benefits of on-site generation but does not attempt to quantify savings from avoided line losses. Fuel cells will typically be sited on the premises of customers, reducing the need to transmit electricity over long distances. Line losses on a utility system are frequently estimated to be between 6 and 10 percent. The avoided emissions that result from reducing line losses are an environmental benefit in addition to the direct emission benefits of fuel cells.

Response: The discussion of avoided emissions that may result from the reduction of "line-losses" from customer-sited resources has been noted in Section 2.3.4 in the Final GEIS.

Comment: PEM fuel cells are not inherently restricted to a 5-10 kW size range. Plug Power has produced 50 kW fuel cells, and PEM fuel cells can be grouped together to achieve greater capacity.

Response: The discussion of PEM fuel cells under the Technology Overview in Section 6.2.6 has been revised for the Final GEIS to address this comment.

Comment: The Draft GEIS refers to the status of PEM fuel cells as having undergone “demonstration and field trials,” but in fact PEM fuel cells are beyond the field trial stage. Plug Power PEM fuel cells have operated in the field for over 1.5 million hours, and have produced over 4 million kilowatt-hours of electricity.

Response: The discussion of PEM fuel cells under the Technology Overview in Section 6.2.6 has been revised to address this comment in the Final EIS.

Comment: The Draft GEIS characterizes the likely initial market for PEM fuel cells as high-end residential. Other likely market sectors for initial deployment of PEM fuel cells include customers with high reliability needs, customers in remote locations, and small businesses.

Response: The Final GEIS incorporates language in Section 6.2.6 to acknowledge these additional markets for PEM fuel cells.

Comment: The Draft GEIS identifies the potential development for all fuel cells as only 13.5 megawatts by 2013, and states that demand presently exceeds manufacturing capacity. This is not the case. Plug Power presently has the capacity to manufacture 10,000 units per year at 5 kW per unit (*i.e.*, 50 megawatts per year), and manufacturing capacity can be increased as markets increase. Other fuel cell manufacturers presumably also have the capacity to produce larger quantities than have been identified in the Draft GEIS. Because the potential market for fuel cells includes almost al customers, and because manufacturing capacity is much higher than reported in the Draft GEIS, the potential development of fuel cells is far greater than the assumption in the Draft GEIS.

Response: The potential for fuel-cell development, based on the RD Cost Analysis, increases the expected potential development to 31.5 MW. This has been reflected in Table 6.2.6-1 in the Final GEIS.

Comment: Fuel cells will contribute to the long-term development of a diverse, renewable set of energy resources. PEM fuel cells are presently developed and built in New York State, and the adoption of an emerging technologies incentive, combined with other State actions favoring clean and efficient methods of generating power, will attract more developers of renewable energy technologies into New York.

Response: Providing measures that induce development of renewable energy technologies in New York is a desirable benefit of an RPS. However, creating a

successful renewables market in New York does not necessarily mean New York will become a manufacturing center for particular technologies. Renewable technologies are for the most part global markets; a NYS RPS could increase New York's share of that global manufacturing market.

Taylor Recycling Facility, LLC

Although not mentioned in comments on the Draft GEIS, Taylor Recycling, LLC, in its Brief on Exceptions to the RD, raised a point that is appropriately addressed in this document.

Comment: We request an exception to [the] definition [of "biomass"] because defining "biomass" as wood is contrary to all other common definitions of biomass which include non-wood renewable matter such as food, leather, offal, grass, leaves, natural textiles (cotton, wool, etc.), paper and paperboard (*i.e.*, boxes). Certain biomass technologies can also produce power with fewer emissions than existing biomass generation using adulterated forms of wood, such as plywood and particle board.

Response: Biomass is a sustainable feedstock for energy products that could assist New York in achieving the RPS targets. Biomass feedstocks in the U.S. primarily consist of forest, mill and agricultural residues, urban wood wastes, and dedicated energy crops. Animal wastes such as manures can also be considered as biomass resources. The greatest potential quantity of biomass feedstock in New York is our abundant supply of wood (lignocellulosic biomass), hence the focus on wood in the RPS definition of biomass. Biomass can be burned directly (combustion) or can be converted into energy products (*i.e.,* solid, liquid and gaseous fuels) through sugar, chemical, or thermochemical platforms. A discussion of these biomass fuels and conversion technologies is provided below.

Sugar Platforms:

Anaerobic digestion is a biological process that produces a gas principally composed of methane (CH4) and carbon dioxide (CO2) otherwise known as biogas.

These gases are produced from organic wastes such as livestock manure, food processing waste, *etc*. Organic waste such as livestock manure and various types of bacteria are put in an airtight container called a digester so the process can occur. Digesters have a holding area for biological activity and a means to capture gas produced. The organic material is consumed by a spectrum of bacterial organisms. The first step is the decomposition (hydrolysis) of plant or animal matter. This step breaks down the organic material to usable-sized molecules such as sugar. The second step is the conversion of decomposed matter to organic acids. Finally, the acids are converted to methane gas. The resulting biogas may be used to fuel specially designed boilers for heat recovery, or in engines attached to generators for electrical generation and heat recovery. The typical emerging application is in small modular systems that can be brought to the source of the fuel rather than incurring transportation costs to bring biomass fuels to a large centrally located plant. Such systems have great market potential for distributed, on-site, electric power and heat generation.

Ethanol, primarily derived from corn, can be produced in either concentrated acid, dilute acid or enzymatic hydrolysis processes – the breaking down of biomass into its component sugars. The biomass sugars so produced are then available for fermentation to fuel ethanol (grain alcohol). While ethanol is a liquid biofuel of greatest use in the transportation sector where there are fewer renewable resource alternatives, it could conceivably be used as a bulk fuel for electric generation.

Chemical Platforms:

Esterification is the chemical modification of vegetable oils into esters suitable for use in diesel engines – such esters are commonly known as "Biodiesel." By the esterification reaction, plant glycerides in the presence of methnol or ethanol (alcohols) and a catalyst (usually aqueous NaOH or KOH) are converted to methyl or ethyl esters with glycerine as an additional byproduct. The largest sources of feedstock in the U.S. for Biodiesel are soybean oils and used cooking oils. While Biodiesel is a liquid biofuel of greatest use in the transportation sector where there are fewer renewable resource alternatives, it could conceivably be used as a bulk fuel for electric generation.

Thermochemical Platforms:

Thermochemical gasification is the process of converting the organic part of biomass, at high temperatures, into a gas mixture with value as fuel. When biomass is heated with no oxygen or only about one-third the oxygen needed for efficient combustion it gasifies to a mixture of carbon monoxide and hydrogen—synthesis gas or syngas. Combustion is a function of the mixture of oxygen with the hydrocarbon fuel. Gaseous fuels mix with oxygen more easily than liquid fuels, which in turn mix more easily than solid fuels. Syngas, therefore, inherently burns more efficiently and cleanly than the solid biomass from which it was made. Syngas can be burned in gas turbines, a more efficient electric generation technology than steam boilers, to which solid biomass is limited.

Thermochemical pyrolysis is the process of converting the organic part of biomass, at high temperatures, into a liquid mixture with value as fuel. When biomass is heated with no oxygen under certain conditions it liquefies into pyrolysis oil. Pyrolysis oil burns more efficiently than if it was in its original solid state. Pyrolysis oil or bio-oil can be readily stored and transported and has been successfully tested in engines, turbines and boilers. A similar process (carbonization) that results in a solid product has been in use for centuries to produce charcoal from wood.

Hydrothermal liquefaction involves converting biomass to an oily liquid by contacting the biomass with water at elevated temperatures (lower temperatures than gasification and pyrolysis) with sufficient pressure to maintain the water primarily in the liquid phase. The primary product is an organic oxygenated liquid (hydrothermal liquid) with higher heat content than pyrolysis oil. The primary byproduct is water containing soluble organic compounds.

Biomass Eligibility:

The digestion of "food, leather and offal" is eligible under the category of "Biogas"; Table 2-1 of the Final GEIS has been clarified to make that more apparent. The conversion of "food, leather and offal" into fuel through any one of the thermochemical platforms discussed above would be expected to burn more efficiently than if such feedstocks were permitted to be used in direct combustion, and such use as feedstock for biogas or biofuel is eligible. Table 2-1 of the Final GEIS has been

clarified to ensure that it is clear that biogas and biofuels are eligible. The use of fast-growing grasses farmed as energy crops and leaves co-mingled with eligible forestry waste wood or agricultural reside is generally an eligible biomass feedstock. However, grass clippings and leaves collected by landscapers and municipalities are generally used to create compost in keeping with State solid waste policy that encourages reuse and recycling over energy uses or disposal. Similarly, natural textiles, paper and paperboard are generally recycled into new products in keeping with State solid waste policy that encourages reuse and recycling over energy uses or disposal. The use of adulterated forms of wood, such as plywood and particle board, as a feedstock for any one of the thermochemical platforms discussed above, if it could be demonstrated that the technology employed would produce power with fewer emissions than the burning of landfill gas for electric generation (as the comment of Taylor Recycling suggests), would be expected to be an environmentally beneficial alternative to the disposal of waste plywood and particle board, assuming it could not otherwise be practicably recycled, in landfills. The use of adulterated forms of wood, such as plywood and particle board, as a feedstock for any one of the thermochemical platforms discussed above, if it could be demonstrated that the technology employed would produce power with the same emissions as the use of unadulterated wood, would be expected to have environmental impacts that are consistent with the impacts of otherwise eligible biomass feedstock resources.

Advocates of Prattsburgh (Dr. Alice Sokolow, Ruthe Matilsky, et. al)

Several written and e-mailed letters were received from Advocates of Prattsburgh and other citizens in the Prattsburgh area concerned about wind energy projects that are currently proposed for their respective communities. For the most part, these comments raise general and site-specific issues about individual projects that are more appropriate for examination in the specific SEQRA review currently underway for those projects rather than in a GEIS.

Also, some of these commenters raised similar concerns expressed by the Chautauqua County Citizens for Responsible Wind Power and the Ripley Hawk Watch

regarding adoption of an RPS policy absent comprehensive siting guidelines for wind projects. In response, it was noted that state and federal agencies charged with protecting the environment have taken an active role in the review and permitting of proposed wind power projects across New York State. Specifically, DEC staff, in cooperation with the United States Fish and Wildlife Service, is becoming ever more knowledgeable about proper siting considerations for wind energy facilities to protect natural resources. Also, the Department of Agriculture and Markets has provided its expertise in the siting, construction and restoration of facilities affecting agricultural resources. In addition, other state and local agencies are available for consultation to municipalities to assist in the review of projects. Lastly, NYSERDA is making funds available to help local governments prepare for the development of wind power generating facilities that are proposed for their communities.