# Using Renewable Resources

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## Nature's Way to Energy Independence

## Introduction

The State Energy Plan (SEP) should further the State's goals and commitments to foster clean renewable energy resources in order to have an environmentally sustainable economy. Governor Paterson has advocated a goal to have 45% of the State's electric power needs supplied by renewable resources or energy efficiency by 2015. Con Edison believes that an integrated clean energy goal will help achieve a geographically balanced and cost-effective sustainable energy policy while also allowing flexibility as to how the goal is achieved. Wind has been the most visible new alternative for providing clean energy supplies to consumers,[1] and the State has been successful in encouraging and attracting the development of wind in the upstate region. But other sources of renewable energy are available to diversify the State's renewable portfolio. Through a comprehensive strategy to encourage a variety of resources, including demand response and energy efficiency in all regions, the State will be able to meet its clean energy goals and the energy demands of customers, while reducing the environmental impact of energy as well as our dependence on fossil fuels.

## Discussion

In developing a comprehensive energy strategy, consideration should be given to the unique characteristics and value of specific renewable technologies. For example, though the cost of off-shore wind may be higher, this technology is anticipated to provide added value due to its greater coincidence with the system peak.

Con Edison and LIPA are studying the development of 350 MW to 700 MW of off-shore wind, located at least 13 miles off the Rockaway Peninsula in the Atlantic Ocean. Recently, both organizations announced a new Wind Collaborative through which LIPA, Con Edison and possibly other members of the Collaborative would seek proposals from private development firms to build the project and enter into agreements to purchase the energy produced by the project with various purchasers. Incentives and/or other subsidies should be considered to encourage implementation of the project. Incentives could be for the wind turbines directly, or related to the transmission investments needed to interconnect such facilities to the grid. New Jersey and Delaware have recently approved off-shore wind projects, and offer incentives to these resources that recognized the unique value of off-shore wind.

Solar technology also shows promise, and incentives for building more solar resources should also be considered in the SEP. Solar technology complements wind initiatives. In addition to its environmental benefits, peak solar output matches system peak load patterns, providing an intrinsic ability to mitigate reliability needs. Solar potential is not limited to specific regions, and promoting solar investment will result in more solar resources being sited in close proximity to customer usage. Solar resources can balance consumers' exposure to potentially high carbon dioxide costs incurred by fossil fueled generation.

[1] Due to wind's intermittency and low coincidence with the system peak load, there may be limits to the amount of wind that can be useful to the electricity consumers of New York State. The NYISO is currently updating a GE study that was completed in March 2005. That study found that 3,300 MW of wind can be accommodated with only minor adjustments to the State's existing planning, operation, and reliability practices.

Achieving greater market penetration for solar resources will require the combined efforts of consumers, developers, utilities, and government agencies. Solar technology is expensive, with large upfront costs. Larger commercial and industrial consumers may be willing to make such investments, but large upfront costs may continue to be a barrier for smaller solar panel installations for residential or small commercial customers. Giving the solar industry a boost with regulatory support for utility programs that reduce upfront costs could increase the number and size of installations for all types of customers. Con Edison's recently announced solar energy pilot program to develop up to 12 MW of solar resources in the Con Edison service area is one example of a utility initiative that will help the solar industry grow in New York State. Similar to energy efficiency programs with appropriate incentives, utility-based solar programs with appropriate state-supported incentives can focus efforts on the daytime peaking areas of the system to potentially mitigate, where possible, the costs of reinforcements otherwise necessary to support continued reliable service.

It is also important to recognize that the intermittency of many renewable resources requires the continued availability of more traditional dispatchable resources in order to assure that electricity can be reliably supplied. Demand response and energy storage devices may also be able to provide increased dispatchability, although these technologies are not yet proven to be able to do so in a reliable and cost-effective manner. Therefore, the SEP should support the continued operation of electric generation with diversified fuel types so that robust deployment of renewables does not jeopardize electric system reliability.

Development of solar technology can also be good business for New York. Encouraging solar innovation will provide potential economic development benefits. Specialized skills are needed to design, manufacture, transport, package and install solar panels which will lead to the creation of new "clean and green jobs".

Last, transmission system enhancements that add digital intelligence to the bulk power system would provide an ideal opportunity to create value by facilitating the integration of renewables resources and should be supported. The technical feasibility of large scale distributed resources, including renewables, requires enhanced communications. New transmission and Smart Grid makes this link possible. More details on electric transmission's role integrating renewables are contained in a companion white paper, "Expanding Transmission: Bringing Power to the People."

## Proposal

1. The State can better achieve its overall goals by adopting and funding a single integrated clean energy program focused on renewables and energy efficiency and designed to achieve a sustainable energy system. The State has initiatives underway for energy efficiency programs, and has also supported wind and other renewables through the Renewable Portfolio Standard (RPS) program. Additional funding will be available from the auction proceeds of the Regional Greenhouse Gas Initiative as well as from Federal stimulus programs. But current efforts are divided among different programs and don't sufficiently leverage the abilities of the State's utilities to aid in the transition to a clean energy economy. Utility participation in an integrated clean energy program will improve the likelihood of achieving this ambitious goal, as well as speeding the deployment of renewable technologies.
2. Utilities should be encouraged to identify and pursue various pilot programs to determine the best approach to advance solar penetration, and State renewables

programs like RPS should be modified to allow utilities the financial tools to promote the goals of the RPS program. Active and speedy regulatory support for solar development, including utility-based programs, creates additional opportunities for New York to become home to this fledgling industry.

3. Aspirations for a cleaner environment are greater now than at any prior time. New York State should be a leader in green energy innovation. Governor Paterson has proposed the development of an energy research consortium. The Companies support his innovative initiative, which can play a critical role in encouraging the deployment of renewable resources in New York. The State can and should take a leading role in the development of new energy-related technologies such as solar, wind, energy storage and batteries for electric vehicles. Utilities must be part of the effort.
4. The State Energy Plan should encourage the development of electric transmission when needed to meet public policy objectives such as integrating renewables, including incentives that recognize the risks involved in infrastructure development efforts. Grid modernization achieved through Smart Grid enhancements will be an integral part of deploying more solar technology. The State should facilitate investments in new technologies, such as AMI, that will increase system operators' knowledge and flexibility in operating the grid and integrating solar. Utilities must be allowed to directly recover all FERC approved transmission costs without added uncertainty due to state regulatory processes.
5. Renewable resource initiatives should and will be an integral part of the State Energy Plan, but regional equity should be taken into account. One method would be to have separate clean energy goals for the upstate and downstate regions. Expanding wind and solar initiatives *throughout* the State reinforces the State's commitment to meeting supply side environmental goals, while still continuing to satisfy the growing energy demands of New York State consumers. This must include appropriate consideration of off-shore wind resources in the downstate region to facilitate this technology as a viable renewable alternative.

***Questions or comments?***

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