



conEdison

# Using Renewable Resources

Nature's Way to Energy Independence

## Introduction

The State Energy Plan will further the State's goals and commitments to foster clean renewable energy resources in order to have an environmentally sustainable economy. As part of the 2009 State of the State Address, Governor Paterson has already advocated a goal to have 45% of the States' resources from renewables and energy efficiency by 2015, and the Companies support the establishment of a consolidated goal that will integrate renewables and energy efficiency in order for the State to have a geographically balanced and cost-effective sustainable energy policy. The SEP must support the continued operation of electric generation with diversified fuel types as well as the development of new technologies to advance cleaner, more efficient energy supplies such as wind and solar alternatives.

The expansion of renewable resources will require the capacity of more traditional resources to maintain reliability while increasing energy production from renewable resources. This is an important point. Increasing reliance on renewable resources for the state's energy needs is the goal. But the intermittency of such resources will require the continued availability of more traditional resources in order to assure that electricity can be produced when the wind is not blowing or the sun is not shining. While we may be able to rely on demand response resources, more experience is needed in this area including improved measurement and verification of results. The goal must be robust deployment of renewables with a keen eye to maintain electric system reliability.

To date, the State has been successful in encouraging and attracting the development of wind farms in the upstate region in an effort to decrease dependence on traditional fossil generation and reduce carbon emissions. These efforts should not be forestalled. Wind has been the most visible new alternative for providing both affordable and clean energy supplies to consumers.<sup>1</sup> Other sources of renewable energy are available for the State to diversify its renewable portfolio beyond on-shore wind technologies. It is through a comprehensive strategy to encourage a variety of resources throughout the state that the State will be able to meet its renewable energy goals, the energy demands of customers, and to both reduce the environmental impact of energy as well as reduce dependence on foreign oil. The need for new transmission to support increasing wind resources needs to be addressed in innovative ways. The NYISO energy markets send signals on where it makes economic sense to site new generation considering existing transmission. It was not designed to send environmental signals nor provide economic guidance to generation such as wind that has limited siting options.

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<sup>1</sup> 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 that can be accommodated with only minor adjustments to the State's existing planning, operation, and reliability practices.

## **Discussion**

The State should consider the viability of off-shore wind in the downstate region, recognizing that there may be potential benefits to consumers, even though the costs to install and maintain off-shore equipment may be higher as compared to on-shore wind turbines. The State should support off-shore wind study efforts by utilities, including the joint efforts recently announced by Con Edison and LIPA. If the study results prove to be promising and it makes economic and environmental sense to do so, the State may contemplate developing appropriate incentives and/or subsidies to promote such investment. Incentives could be for the wind turbines directly, or related to the transmission investments needed to interconnect such facilities to the grid. It is noteworthy that New Jersey and Delaware have recently approved off-shore wind projects.

Implementation of solar technology also shows promise. Incentives for solar technologies should also be increased beyond existing levels to enhance the State's renewable energy goals, contribute to a cleaner environment, reduce greenhouse gas emissions and improve the quality of the air we breathe. Solar photovoltaic technology boasts certain advantages (but utilization factors are still low) that can complement wind initiatives – in addition to its environmental benefits, photovoltaic output corresponds more closely to system peak load patterns exhibiting an intrinsic ability to potentially alleviate reliability needs (depending on weather conditions). And, given that solar applications are not limited to specific regions, promoting investment in such installations encourages widespread use of the application, including urban areas, with generation sources sited in proximity to loads. Moreover, the implementation of the latest solar technology can balance the consumers' exposure to potentially high carbon taxes tacked on to the cost of fossil fueled generation and can potentially supply the grid's constrained load pocket areas.

Achieving greater market penetration for solar resources will require the efforts of consumers, developers, utilities, and government agencies alike. Solar technology is costly, with large upfront costs and payback periods over multiple years, as many as 20 years depending on energy prices. While larger scale commercial and industrial consumers may be able to invest in such propositions, the large upfront costs may continue to be a barrier for smaller solar panel installations associated with residential customers. Utilities could help in this area. State tax credits, rebates, and subsidies have facilitated solar installations, but more needs to be accomplished. Giving the solar industry a boost with support by regulated utilities could increase the volumes of installations, improving the economies of scale that would reduce those upfront costs. Utilities are in the best position to accelerate the growth of solar programs by targeting the residential sector through loan or lease options that could enhance penetration and improve program success. Similar to energy efficiency programs with appropriate incentives, utility programs can focus efforts on areas of the system where reinforcements are necessary to support continued reliable service and foster economic development opportunities for local businesses and communities.

Transmission system upgrades provide an ideal opportunity to create value by allowing power to move freely between regions and address public issues such as integrating renewables and promoting renewable resources. The transformation of the energy industry and the integration of renewable resources will not be realized unless we have a modernized transmission system. A robust transmission system is the key to deriving all the benefits of renewables and clean technologies, and transmission improvements should be supported when it makes sense to do

so. Governor Patterson's 2009 State of the State address recognizes the link between the expansion of renewables and the development of clean technology such as battery storage technology for the large scale advent of Plug-In Hybrid Electrical Vehicles. New transmission makes this link possible.

### **Proposal**

The State already has initiatives underway for energy efficiency programs, and has also supported wind and other renewables through the Renewable Portfolio Standard (RPS) program administered by NYSERDA. These programs should continue and considered as a single integrated program, with an appropriate focus on both upstate and downstate customer needs. In addition, the following suggestions are made.

1. Utilities should be encouraged to identify and pursue various pilot programs to determine the best approach to advance solar penetration. As an example, Rockland Electric Company ("RECO"), O&R's wholly-owned electric distribution utility in New Jersey, recently filed a proposal to implement a solar loan program in its service territory. Under the program, RECO would lend \$6 million to residential customers over three years for solar installations on their homes. The loans would be supported by a customer surcharge similar to the SBC and are paid back either in cash or with Solar Renewable Energy Certificates ("SRECs"). The program is designed to facilitate New Jersey's market-based approach to solar by helping to create a market at the residential level for the sale of SRECs, while encouraging the development of solar installations in the residential market. Similar efforts should be promoted and explored by utilities in New York State as well.
2. Development of solar technology can also be good business for New York. Encouraging solar innovation will provide potential economic development benefits. As the demand for solar technologies increases, it will lead to employment opportunities and increased economic activity. Specialized skills are needed to design, manufacture, transport, and install solar panels, which will lead to the creation of new "clean and green jobs" to stimulate the economy statewide. Being on the forefront of solar development creates opportunities for New York to become home to this fledgling industry, spurring economic growth and development, and fostering the production of environmentally cleaner energy supplies that enhance system reliability and improve the quality of life for all New Yorkers.
3. The momentum for energy independence and a cleaner environment is greater now than at any prior time. It is time for New York State to be a leader in energy innovation. Governor Patterson has proposed the development of a research consortium. This innovative initiative can play critical role on how renewables are deployed in New York, and is an effort the Con Edison supports. New York can and should take a leading role in the development of new energy-related technologies such as solar, wind and automobile batteries of greater capacity than what has been achieved to date. Energy storage will be important to meet energy demand reliably and in an environmentally friendly manner. Improving the efficiency of the solar photo-voltaic cells themselves is also a critical goal.

4. As we look to solar as part of the solution to our energy needs of the future, it is essential that modernization through Smart Grid enhancements is recognized as an integral part of deploying this new 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 facilitate the use of solar. Enhanced communications across the utility distribution networks will facilitate development of distributed power production created by solar interconnections on the utility networks. The technical feasibility of large scale distributed resources still need to be understood so that consumers, developers, utilities and State agencies can work together to ensure that solar integration will occur in a safe and reliable manner.
5. Renewable resource initiatives should and will be an integral part of the State Energy Plan. Increasing our efforts by expanding wind and solar initiatives throughout the entire State serves only to reinforce the State's commitment to meeting supply side environmental goals, while still continuing to meet 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 as a viable renewable alternative.
6. The State Energy Plan should encourage proper incentives to develop electric transmission when needed to meet public policy objectives – incentives that recognize the risks involved in development efforts and lack of transmission access that may be blocking the use of additional renewable resources. The New York Transmission Operators should be allowed to recover all FERC approved transmission costs. We must make a collective and concerted effort to facilitate a clean energy economy that exploits a robust transmission system.