FINAL

MINUTES OF THE NEW YORK STATE ENERGY PLANNING BOARD MEETING HELD ON AUGUST 30, 2012

Pursuant to notice dated August 24, 2012, the eighth meeting of the New York State Energy Planning Board ("Board") was convened on August 30, 2012 at 10:00 a.m. at the Albany office of the New York State Energy Research and Development Authority, 17 Columbia Circle, Albany, New York. A copy of the meeting Notice is annexed as Exhibit A.

The following Energy Planning Board Members or their designees were present:

- Francis J. Murray, Jr., President and CEO of the New York State Energy Research and Development Authority and chair of the Board
- Garry Brown, Chairman of the NYS Public Service Commission
- Assemblyman Kevin Cahill
- Thomas Coakley
- Joe Martens, Commissioner of the NYS Department of Environmental Conservation
- Kenneth Adams, Chairman and CEO of Empire State Development (Keith Corneau, designee)
- Darrel Aubertine, Commissioner of the NYS Department of Agriculture & Markets (Phil Giltner, designee)
- Joan McDonald, Commissioner of the NYS Department of Transportation (Robert Zerrillo, designee)
- Cesar Perales, Secretary of State (George Stafford, designee)
- Dr. Nirav Shah, Commissioner of the NYS Department of Health (Kevin Gleason, designee)
- Stephen Whitley, President and CEO of the New York Independent System Operator (Pat Curran, designee)

Also present were Janet Joseph, NYSERDA's Vice President for Technology and Strategic Planning; John Williams, Director of NYSERDA's Energy Analysis program and director of the Board's Working Group; Hal Brodie, NYSERDA General Counsel and Counsel

to the Board; David Munro, NYSERDA Deputy Counsel and Secretary to the Board; and staff from various entities on the Board as well as members of the public.

Mr. Murray stated that the meeting is being videotaped and that the video would be placed on the Energy Planning Board website within the next few days. He added that although the Board meeting is open to the public, the Board will not be accepting comments from members of the public during the meeting.

Mr. Murray stated that there were several agenda items. First, the Board would review the minutes from the prior meeting. The Board would then hear a presentation on the draft Transmission and Distribution Reliability Study and Report (Reliability Study) that was provided to all board members in advance of the meeting. Mr. Murray reminded the Board that the enabling legislation directed the Board to undertake a study of the overall reliability of the state's electric transmission and distribution system and prepare a report for delivery to the Governor and legislative leaders on such study's findings. Mr. Murray stated that at the end of the presentation, the Board would act on a resolution approving the Reliability Study. Finally, the Board would discuss the status of the Draft State Energy Plan.

Minutes from July 2012 Meeting

Mr. Murray stated that a copy of the draft Minutes of the July 9, 2012 meeting was provided to Board members on August 24, 2012. Whereafter, upon motion duly made and seconded, and by unanimous voice vote, the Minutes of the July 9, 2012 meeting were approved.

Transmission and Distribution Reliability Study and Report

Mr. Murray stated that NYSERDA e-mailed the draft Reliability Study to each Board member, together with a memorandum that summarizes the contents of the Study, including a list of Findings and Recommendations. He then introduced NYSERDA's Erin Hogan and John Williams, who presented a summary of the Reliability Study. Mr. Murray stated that a copy of their presentation was placed in each Board member's packets, as was the memorandum and resolution. Mr. Murray stated that the presentation will also be posted on the State Energy Plan website.

Ms. Hogan began her presentation by introducing several individuals who were key to finalizing the Reliability Study - John Barnes from the Department of Environmental Conservation (DEC), Pat Curran from the New York Independent System Operator (NYISO), and Mike Worden from the Department of Public (DPS). Ms. Hogan stated that other staff from DPS as well as staff from the New York Power Authority (NYPA), the Long Island Power Authority (LIPA) and the New York State Reliability Council were also instrumental in developing the Reliability Study. Ms. Hogan noted that she and others discussed the content of the draft Reliability Study at the Board's June 2012 meeting. She reiterated that reliability is not something considered every four years, but is instead reviewed on a continual basis; as such, any study is largely a "snapshot" of the reliability of the electricity transmission and distribution systems at a particular point in time.

Ms. Hogan provided an overview of the topics that the Reliability Study addresses, as required by the enabling legislation:

- Transmission System Reliability
- Distribution Reliability
- Investment and Expenditures
- Environmental Regulations
- Transmission & Distribution Reliability Impacts from Public Policy Initiatives
- Future Transmission & Distribution Reliability Issues
- Key Findings and Recommendations

Ms. Hogan explained that the reliability of the electric system is maintained by balancing generation, transmission, distribution and load. During the operation and planning studies, each of these components was considered in order to assess reliability under various conditions. Ms. Hogan presented a map of New York showing the location of high voltage transmission lines, as well as transmission owner service areas. She explained that there are seven transmission service areas, owned by five companies. While in the past electricity had been bottlenecked in the Utica area, congestion now exists farther south, along the Hudson River Valley, primarily due to new generation units coming on line in the Capital District area.

Ms. Hogan stated that the reliability study describes in some detail the evolution of the various oversight entities, their relationships and responsibilities. At the federal level, the Federal Energy Regulatory Commission and the North American Electric Reliability Corporation are predominant. The Northeast Power Coordinating Council is the regional reliability entity for New York, New England, and much of eastern Canada. The New York State Reliability Council develops and monitors compliance with New York-specific standards and criteria in recognition of New York's particular reliability needs and characteristics. NYISO is the independent not-for-profit entity charged with: (1) operating the bulk electric system within New York State; (2) planning for its future reliability; and (3) administering the wholesale electric markets. The New York State Public Service Commission (PSC) is charged with regulating the State's electric utilities, including transmission owners, by setting rates and ensuring safe and adequate service. Transmission Owners are the public utilities, authorities or merchant owners that own the transmission facilities and provide service under state and federal oversight. [Note: the minutes from the June 4, 2012 Board meeting describe the roles of these various entities in much greater detail.]

Ms. Hogan also presented a graph showing the number of customer-hour interruptions over the past five years. Last year (2011) was a bad year for storms in light of Hurricane Irene, Tropical Storm Lee, and an October ice storm, resulting in the most customer-hours of interruption in 20 years. Radial interruptions (individual above-ground lines covering most of the State) are most often caused by downed trees, equipment failures, and accidents. DPS and the utilities monitor trend lines to determine if specific issues need to be addressed, e.g., generally related to more tree trimming. Network interruptions (Con Edison's vast underground system) are generally not widespread. The focus is on ensuring that the main supply feeders and network grid are in good shape – otherwise, a partial or total network shutdown could occur, perhaps affecting 100,000 customers or more.

Ms. Hogan presented a graph showing utility capital expenditures pertaining to both the transmission and distribution systems. While capital expenditures in the late 1990's and early 2000's were relatively flat, there was a substantial need for infrastructure upgrades in the following years due to the need to address new transmission lines, new substations (Con Edison built a number of substations for the first time in 20 years), aging infrastructure, and skyrocketing commodity costs for copper and aluminum. Capital expenditures fell in 2009-10 due to the economic downturn and the implementation of austerity measures. Looking to the future, Ms. Hogan stated that all parties recognize that there is a need to stabilize increasing capital expenditures to mitigate the impact on ratepayers. Load growth will be mitigated by various programs: energy efficiency, demand side management, demand response and distributed generation.

Ms. Hogan also discussed utility operation and maintenance (O & M) expenditures over the past half-dozen years. O&M work increases for various reasons: as capital work increases; as a result of stronger inspection protocols; and as infrastructure ages. Additionally, the workforce continues to age, and a skilled workforce is needed for both routine work (e.g., it takes five years to become fully qualified as a lineman) and for Smart Grid and other high-tech initiatives.

Ms. Hogan then discussed future issues addressed in the Reliability Study. Generation will be impacted by retirements due to heightened environmental regulation, the possible shut down of Indian Point, and market conditions. As a consequence, a diverse mix of electric generation fuel sources will be very important. With regard to transmission and distribution, aging infrastructure will require significant capital expenditures- nearly 4700 miles of lines, or 40% of existing infrastructure, will likely require replacement within the next thirty years, requiring expenditures of up to $25 billion. In the meantime, maintenance costs and down time will likely increase. Predicting future load will be a challenge as new smart grid and other emerging technologies develop (e.g., electric vehicles). Finally, external forces such as security threats (both physical and cyber), geomagnetic disturbances (solar storms) and an aging workforce must all be dealt with in order to ensure reliability.

Mr. Cahill raised several issues regarding the Reliability Study. First, he noted the difficulty of reliability planning when the State does not know when or whether (1) existing power plants will be retired, or (2) new plants will be built. He noted that power plants that intend to close are not required to notify the State until six months prior to closure. If such plants were required to provide financial profiling information to the State earlier, the State would be in a better position to predict which plants might close. Ms. Hogan responded that units intending to close cannot shut down unless replacement power is found, if necessary.

Mr. Cahill also stated that New York has not done enough to encourage the repowering of existing power plants, which would help to address transmission constraints. He added that repowering of individual plants may have a significant impact on the local community and that should be carefully examined.

In response to a question from Mr. Coakley as to whether a new plant in one area of the state (e.g., Plattsburgh) could substitute power lost by the closure of a plant in another region

(e.g., downstate), Mr. Brown responded that PSC rules regarding locational requirements direct that downstate plants that retire be replaced with new plants in the downstate region.

John Williams then presented the key findings and recommendations from the reliability study, as follows:

- **The electric system is reliable**. As assessed using existing metrics, the electric system meets all current reliability standards and criteria. Mechanisms to maintain reliability are in place should a planning study identify potential reliability risks.

- **Allow system planners and operators flexibility in their response to implement state policies.** To maintain reliability, understanding the components of the electric system (generation, transmission, distribution, and load) is essential. State and federal policies have changed the system topology through, among other things, the Renewable Portfolio Standard (RPS) program, promoting demand-side management through Demand Reduction (DR) and the Energy Efficiency Portfolio Standard (EEPS), and promoting environmental regulations, all of which accelerated retirements in the existing generation fleet. Smart grid and advanced technologies are expected to introduce additional changes. To date, changes have been incorporated into the planning and operation of the electric system. However, the complexity of the electric system may limit how quickly the system can adopt new policies and technologies system wide.

- **Support cost-effective replacement of aging infrastructure**. In light of the nature and age of much of the generation, transmission and distribution system within the State and the likelihood of the need for replacement of many of those facilities, as well as potential retirements of some such facilities in the near term, the State should support reasonable investment in electric system infrastructure to maintain reliability while considering rate impacts to customers. The Energy Highway Initiative is an opportunity to address these issues.

- **Support a diverse mix of electric generation fuel sources.** In its policies and actions, the State should support a diverse mix of electric generation fuel sources that have access to robust delivery systems, particularly in light of likely increasing dependence on natural gas as a generation fuel, especially in the downstate region.

- **Monitor gas/electric interdependence.** The State should continue to monitor the growing interdependence of electric and natural gas industries and use such awareness to inform its legislative, regulatory, and planning decisions and processes.

- **Encourage workforce development.** The State should encourage workforce development for technical utility workers and utility engineers, given the impending loss of large numbers of experienced electric utility workers to retirement.

- **Support distributed generation technologies.** The State should support the development and implementation of distributed generation technologies through various initiatives aimed at making distributed generation compatible with the State's electric system infrastructure and more accessible to consumers. While supporting such actions,

the State should consider the impact to the natural gas system and future gas pipeline and local distribution company infrastructure, and foster measurable and verifiable energy conservation, efficiency, and demand response programs in New York State.

- **Improve responses to major storms.** New York State should encourage the development of cost-effective measures that enhance the ability of the electric system to withstand or mitigate the effects of severe storms, and enhance the ability to restore service and effectively communicate with customers following severe storms.

Mr. Murray reiterated that the Reliability Study was the product of the efforts of staff from various state agencies as well as outside organizations, including NYPA, LIPA and the NYS Reliability Council. He also stated that this is not the last time the Board will be addressing reliability issues. The Energy Highway Task Force report, when finalized in the Fall of 2012, will undoubtedly include recommendations regarding reliability of the transmission and distribution systems. In turn, the Board will likely identify more specific steps in its draft Energy Plan to ensure reliability moving forward.

Mr. Cahill expressed strong concern that New York and neighboring states are becoming increasingly dependent on natural gas as a fuel source for electricity. He stated that while there will continue to be ample supply of natural gas well into the future, the price could rise dramatically, and neither New York nor its neighbors are planning for that possibility.

Mr. Cahill also expressed concern that with regard to Distributed Generation (DG) technologies, one of the most significant limitations is the distribution system itself. Interconnection costs are often prohibitively high, and the system is not adequately set up to handle DG. Mr. Worden from DPS identified the major DG technologies as wind, solar, farm waste and combined heat and power systems. He stated that the utilities are now addressing interconnection issues. Mr. Brown added that an important policy issue is who pays for the added distribution costs- i.e. must the individual farmer pay the entire cost of a new line that connects his anaerobic digester system to the grid, or should that cost be spread among a larger number of the utility customers.

Mr. Cahill also expressed concern about the need for a trained workforce, and he asked whether the Reliability Study presented any solutions. Mr. Worden from DPS responded that utilities are partnering with several two and four year colleges to offer more advanced training, although he did state that colleges such as RPI are for the most part no longer offering majors in power systems engineering and similar programs. Mr. Cahill also expressed concern that recent utility labor practices such as "outsourcing" their work force erodes the attractiveness of seeking utility employment.

Mr. Coakley wondered whether the State's decision to restructure the electricity industry- separating electricity generation and distribution, with utilities engaged only in the latter activity- is preventing the state from engaging in wise long-range planning. Mr. Brown pointed out that under the former system, rate payers generally bore the risk of cost overruns and the like (e.g., for nuclear power plants), whereas now investors absorb this risk, to the benefit of rate payers. Mr. Brown suggested that while for now, the market is dictating that natural gas is the fuel of

choice, New York should be wary of overdependence on that fuel- as happened in the past with coal, and prior to that with oil. Mr. Brown said the Board needs to make sure that there is fuel diversity to the extent possible by continuing to develop the market for renewable energy and promote energy efficiency. Mr. Curran added that the current market system has enhanced reliability. As an example of this, he noted that energy providers now have spare parts on hand, not wanting to suffer an equipment failure when energy prices are high, whereas the old system did not provide this incentive.

Whereafter, upon motion duly made and seconded, and by unanimous voice vote, the following Resolution was adopted:

Resolution # 5

RESOLVED, that New York State's Transmission and Distribution Systems Reliability Study and Report, as presented to the Members of the State Energy Planning Board for consideration at the Board's August 30, 2012 meeting, with such non-substantive, editorial changes and supplementary schedules as the Chair, in his discretion, may deem necessary or appropriate, is adopted and approved.

Issuance of Draft State Energy Plan

Mr. Murray stated that the final agenda item pertained to the schedule for issuance of the Draft State Energy Plan. The enabling legislation directed the Board to develop and issue a draft Plan by September 1, 2012. Mr. Murray stated that as Chair of the Board, he takes this requirement very seriously, and the Working Group has been working diligently to meet this deadline. Unfortunately, the Board was unable to complete the draft Plan by that date. Mr. Murray said that in addition to the volume of work involved in drafting the Plan, there is an even more compelling public policy consideration for delaying the issuance of the draft Plan. Mr. Murray stated that as Board members know, earlier this year the Governor announced the formation of an Energy Highway Task Force which has been focusing on the challenges and opportunities confronting the State in attracting significant new investment in the State's aging electric infrastructure.

Mr. Murray pointed out that he has stated at several previous Energy Planning Board meetings that he considers the work product of the Energy Highway Task Force as a critical input in drafting the State Energy Plan. Mr. Murray noted that the work of the Task Force had been proceeding apace with the activities of the Board. Indeed, four members of the Board serve as members of the Energy Highway Task Force, including Commissioner Martens, who serves as one of the co-chairs. Mr. Murray stated that the process continues to move forward, but it is taking a bit longer than originally expected. This is largely attributable to the overwhelming and enthusiastic response the Task Force received to its Request for Information. The Task Force received responses from 85 developers with more than 130 proposals, concepts and policy recommendations. The Task Force is analyzing these submissions as it develops its report to the Governor. Mr. Murray stated that the Task Force has indicated that it will submit its report and recommendations to the Governor sometime during the Fall of 2012.

Mr. Murray stated that before the Board releases its draft Energy Plan for public review, hearings and comments, he believes the Board should have the advantage of the report and recommendations of the Task Force. Mr. Murray said that in the mean time, the Board will continue to work to finalize the various topical reports and draft preliminary recommendations for the draft Energy Plan.

Mr. Cahill expressed his concern that the Board had not met the statutory deadline, and that the Board should have reached out to the Legislature before it recessed last June. Mr. Martens emphasized the need for the Board to wait for the results and recommendations of the Energy Highway Task Force before issuing the draft Energy Plan.

The final agenda item was other business; there being none, the meeting was adjourned at about 11:30 am.

Peter J. Costello, Secretary to the Board
Associate Counsel, NYSERDA