### MINUTES OF THE NEW YORK STATE ENERGY PLANNING BOARD MEETING HELD ON JUNE 4, 2012

Pursuant to notice dated May 29, 2012, the sixth meeting of the New York State Energy Planning Board ("Board") was convened on June 4, 2012 at 11:00 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
- James Winebrake
- 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 (Robert Chinery, designee)
- James Sherry, Director of the NYS Division of Homeland Security and Emergency Services (Brian Wright, designee)
- Stephen Whitley, President and CEO of the New York Independent System Operator (Patrick Curran, designee)

Also present were 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 was not able to attend the first part of the meeting. In Mr. Murray's absence, Garry Brown called the meeting to order. He advised that the meeting was being videotaped, and the video will be placed on the Energy Planning Board website.

Mr. Brown stated that there were several items on the meeting agenda: (1) reviewing the minutes from the Board's fifth meeting on May 7, 2012; (2) several presentations from various agency staff, primarily focusing on ensuring the continued reliability of energy supplies across all fuels; and (3) scheduling of upcoming board meetings.

#### Minutes from May 2012 Meeting

Mr. Brown stated that a copy of the draft Minutes of the May 7, 2012 meeting was provided to Board members prior to the meeting. Whereafter, upon motion duly made and seconded, and by unanimous voice vote, the Minutes of the May 7, 2012 meeting were approved.

Mr. Brown stated that the presentations by agency staff would address the following: (1) modeling of the electricity system and examining various alternative scenarios; (2) a summary of the draft electric transmission and distribution reliability study that members of the Working Group have prepared; and (3) energy assurance planning efforts. Mr. Brown stated that a copy of each of the presentations was placed in board members' packets, and the presentations will also be posted on the State Energy Plan website, at

http://www.nysenergyplan.com/boardmeetings.html

These Minutes provide a high-level summary of each of the presentations.

Mr. Brown introduced NYSERDA program manager Karl Michael, who provided a brief update on modeling the electric system. Mr. Michael stated that the Working Group was close to finalizing the reference cases that will be used in the draft State Energy Plan. He identified several potential variables that could be incorporated into scenarios that could be compared to the reference cases for the purpose of further informing discussions about future energy and policy directions. The variables include the following:

- Higher/Lower natural gas prices (e.g., up to 20 percent on either direction)
- Higher/Lower load growth
- Additional increment(s) of energy efficiency
- Additional increment(s) of renewable resources
- Additional transmission capabilities
- Load growth due to electric vehicle penetration
- Specific unit additions, repowering, retirements, or other system changes, including transmission upgrades

Mr. Michael stated that Board members had provided valuable suggestions regarding modeling scenarios, and he encouraged the Board to continue to provide input. In response to a question from Mr. Coakley, Mr. Michael stated that the draft Plan would contain two reference cases- the first reference case will assume the operating licenses for the Indian Point nuclear units are renewed; the second will assume the licenses are not renewed.

Mr. Brown stated that the next several presenters would provide an overview of a draft study that examines the overall reliability of the electric transmission and distribution system. Mr. Brown stated that the enabling legislation directs the Board to undertake such a study, to prepare a report on the study's findings, and to make recommendations regarding the need for new legislation. The study and report must be completed by September 1, 2012- the same day the draft Plan must be issued. Mr. Brown stated that the draft study and report will be presented to the Board for its consideration in the near future, and the Board will take final action on the study and report during a Board meeting in August.

Mr. Brown stated that the draft study was prepared by staff from the following agencies: NYSERDA; the Departments of Public Service and Environmental Conservation; the New York Independent System Operator; the New York Power Authority; and the Long Island Power Authority. He stated that three individuals would summarize the draft study- Pat Curran from the NYISO, Erin Hogan from NYSERDA, and Michael Worden from DPS.

Mr. Curran provided an overview of the topics that the reliability study would address:

- Transmission System Reliability
- Distribution Reliability
- Investment and Expenditures
- Environmental Regulations
- Transmission & Distribution (T & D) Reliability Impacts from Policy
- Future T&D Reliability Issues
- Key Findings and Recommendations

Ms. Hogan explained that 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 slide showing the current energy generation mix in New York. In response to a question from Mr. Brown, Ms. Hogan clarified that this does not include energy imported from other states. Over the past decade, New York has become more dependent on natural gas as an energy source, and that trend is expected to continue. Ms. Hogan noted that new natural gas units are much more efficient, and most can be equipped with dual fueled (gas and oil) units. NYISO is about to undertake a study of the gas-electric system in coordination with New England and PJM Interconnect and expects to issue a final report by the end of 2013. Ms. Hogan said one challenge will be that several generation units in New York expect to retire soon. She explained that such units must give prior notice of such proposed retirement, and they cannot shut down unless replacement power is found, if necessary.

Ms. Hogan presented several maps 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 has been bottlenecked in the Utica area, congestion now exists further south, along the Hudson River Valley, due to new generation units coming on line in the Capital District area.

Ms. Hogan then addressed load issues, showing a chart depicting load growth over the past ten years. Of the three sectors using electricity- industrial, commercial and residential-

industrial load has decreased from 25% of the total in 1990 to 9% in 2010, with the other two sectors making up the difference. Load is determined to a great extent by the number of "cooling degree days," i.e., how much demand there is for air conditioning. Ms. Hogan stated that the State Energy Plan will present load forecasts for the next few decades.

Mr. Curran stated that the reliability study examines in some detail the evolution of the various oversight entities, their relationships and responsibilities.

- Since electric transmission largely takes place in and acting on interstate commerce, its primary regulation is at the federal level. The Federal Energy Regulatory Commission (FERC) is the federal entity charged with that primary responsibility.
- NERC (North American Electric Reliability Corporation) is the independent international not-for-profit entity charged with ensuring the reliability of the bulk electric system by establishing and enforcing standards and criteria, under FERC direction, and is the FERC designated electric reliability organization under the 2005 Energy Policy Act. NERC also oversees the 8 regional reliability entities, including NPCC.
- NPCC (Northeast Power Coordinating Council) is the regional reliability entity for New York, New England, and much of eastern Canada. NPCC has two roles: it administers and enforces national and region-wide standards in coordination with NERC; and it develops specific regional standards and criteria, which can be more stringent than regional or national standards provided they are consistent with those standards.
- NYSRC (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. These can be more stringent than regional or national standards provided they are consistent with those standards. NYSRC also monitors compliance with regional and national standards.
- 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.
- NYS Public Service Commission is charged with regulating the State's electric utilities, including transmission owners to set rates and ensure safe and adequate service. It has the authority to (1) direct the transmission owners to mitigate any deficiency that could compromise reliability, including by ordering development or acquisition of resources or facilities as necessary; and (2) adopt, reject, or modify NYSRC standards and criteria.
- Transmission Owners are the public utilities, authorities or merchant owners that own the transmission facilities and provide service under state and federal oversight. They are responsible for assessment and planning for reliability on their own system and meeting all NYSRC, regional and national reliability standards, either directly or through the NYISO.

Mr. Curran then presented a slide showing the four major "Interconnections" or separate synchronous grids that operate in the U.S. and Canada today. These grids have limited physical connection and transfer capability between them (in part by design), although that is being enhanced in key locations. Mr. Curran then discussed transmission reliability metrics. He explained that a reliability assessment needs to examine past and present performance of the system and also consider future needs, i.e., what planning needs to be undertaken to keep the system reliable. Reliability planning metrics encompass two basic concepts: (1) resource adequacy- is there enough energy and capacity, when and where is it needed; and (2) operational security/reliability- the ability of the system to withstand unanticipated disturbances or contingencies, such as the loss of system elements. The standard metric used throughout the industry to measure resource adequacy is Loss of Load Expectation (LOLE), which is a measure of the ability of the system's resources to meet its load or demand. The widely accepted standard for that system metric is that the failure of resources to meet load should not occur more than once in ten years, or on average no more than 0.1 days per year (the "1 in 10 standard").

Mr. Curran continued, stating that the operational (or system) security concept used in operations and planning means that possible events are identified as having significant adverse reliability consequences, and the system is then planned and operated so that it can continue to serve load even if these events occur. This is often referred to as N-1, "N" being the total number of system components and an "N-1 requirement" meaning the system can withstand single disturbance events (losing one key component) without violating standards or affecting service to customers. Operational security also encompasses the key concept of transmission adequacy or the capacity of the transmission system to convey and transfer sufficient flows of electricity as needed.

Mr. Curran stated that perhaps the most meaningful measure of a transmission system's historic performance is the occurrence of uncontrolled loss of load (or load shedding) i.e., how often and for how long does a transmission operator have to curtail or shut off load on a transmission system to customers on an unplanned or uncontrolled basis. Except for the event of 9/11/01, and the 2003 Northeast Blackout caused by a sudden severe surge originating outside New York, the New York Control Area has not had to shed load at the bulk system level for reliability purposes since the creation of the wholesale markets and the inception of the NYISO in 1999. Mr. Curran stated that while these traditional reliability metrics remain integral to oversight, far more data is available today and there is more transparency with respect to that data and operations than was the case historically. More sophisticated means of quantifying reliability are evolving to serve an increasingly interconnected 21<sup>st</sup> century grid. Today there is far more data and transparency with respect to transmission system operations and reliability than was available historically, and that data is being used to develop more sophisticated and improved reliability oversight.

Mr. Curran explained that among the more recent and evolving transmission reliability metrics are the following:

• Transmission Availability Data System (TADS) – implemented by NERC in 2008 to collect transmission outage data in a common format, TADS is used to quantify certain

performance aspects and analyze individual outage events as a means to improve reliability.

- FERC ISO/Regional Transmission Organizations Metrics Reports first issued in 2010, these reports are designed to standardize and update measures to track ISO/Regional Transmission Organization performance in several areas, including reliability.
- NYISO Monthly Operations Performance Metrics submitted to all market participants and publically available on NYISO's website, these report on a range of reliability and market performance metrics.
- NERC Long Term Reliability Assessments these are filed annually with FERC, based on regional data and assessments, but reflecting NERC's independent judgment of the state of reliability within the regions.
- NERC Integrated Reliability Index under development with the goal of integrating the many ongoing efforts and different metrics in a single annual State of Reliability report which will provide an industry reference for historical bulk power system reliability and analytical insights with a view to action.

Mr. Curran stated that the various oversight entities, processes and reports surveyed by the Working Group reached similar findings, as follows:

- 1. The New York transmission system is generally performing reliably and should continue to do so provided concerns are monitored and addressed as necessary.
- 2. The primary concerns identified are the age of the infrastructure; constraints on transmission into the downstate area; and the potential impact of existing and pending regulations on the resource base.

Mr. Curran stated that transmission system planning is obviously integral to future reliability. He noted that during the April 2012 Energy Planning Board meeting there were presentations on the NYISO, State Energy Plan and other planning processes which play a major role in assessing and ensuring system reliability. He stated that the reliability study addresses these processes and their interrelationship in some detail. The one major initiative not listed among the interregional planning efforts relates to FERC Order 1000, which requires that going forward grid operators like the NYISO work with FERC and the states to address (1) public policy planning and (2) interregional planning.

Mr. Curran then discussed transmission system operations. He explained that the functional operation of the electric grid is predicated on meeting all reliability standards and requirements.

- Seasonal Operations Studies routinely examine the limits on the transmission system at key locations for the coming season.
- In Day Ahead Operations Plans the system operator uses a "Security Constrained Unit Commitment," which means that in choosing the "least cost" generation units to meet anticipated demand for the next day, NYISO is constrained in those choices by the need to assure that all reliability rules and standards will be met at all times.

- Real Time Operations NYISO monitors system conditions on a constant basis and makes sure that reliability rules are observed at all times and action is taken as necessary.
- Operating States are defined operating criteria that allow operators to take predetermined sets of actions to return the system to normal as quickly as possible.
- Operations Communications these are sophisticated communications protocols that have been developed between the NYISO, the transmission owners and neighboring power systems for both normal and emergency operating states to coordinate their actions.
- Operations Training the reliability study also details the major operator training requirements and protocols required by NERC and administered by NYISO on an ongoing basis.

Mr. Curran identified reliability issues that were identified in several recent major reliability planning studies surveyed by the Working Group. These studies, performed by NERC, STARS and the NYISO Comprehensive Reliability Plan (which was discussed during the April 2012 Board meeting), came to some or all of the same conclusions he mentioned earlier:

- 1. The current system is essentially reliable.
- 2. The transmission infrastructure in New York State is aging and much of it will need to be replaced in the coming years.
- 3. There are significant transmission constraints into the southeastern part of the state.
- 4. New and pending regulations could have an impact on the resource base.

Ms. Hogan then briefly discussed the results of the New York State Transmission Assessment and Reliability Study (STARS). This study, which began in 2008, is being conducted and funded by the state's transmission owners, including the Long Island Power Authority (LIPA) and the New York Power Authority (NYPA), with support from the NYISO. The study's long-term planning approach will help transmission owners develop an updated, more reliable system that meets New York Control Area requirements for the next 20 years and beyond. Among the challenges are aging transmission lines – nearly 4700 miles of lines, or 40% of existing infrastructure – which will likely require replacement within the next thirty years. This will require expenditures of up to \$25 billion to replace these lines.

Mr. Worden then discussed the reliability of the distribution system. The report covers these areas: (1) annual reliability report; (2) reliability improvements; (3) power quality issues; (4) electric utility emergency plans; and (5) storm mitigation. He stated that the first three areas in the report focus on day-to-day operations, while the last two focus on major storms. He explained that distribution performance is measured by frequency and duration. Frequency pertains to how often the typical customer loses power. Duration involves how long the customer is without service. This data is also examined both with and without major storms-outages not caused by major storms data represents more controllable outages, whereas storm data is more unique, necessitating case-by-case reviews.

Mr. Worden presented a graph showing distribution performance in New York over the past five years. Overall, on average customers suffer one interruption per year, generally lasting

about two hours with individual cases varying. Notably, there was an unusual number of storms in New York State in 2011. He also presented a graph showing the causes of distribution interruptions. Radial interruptions (individual 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 related to individual services. 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.

Mr. Worden then addressed the number of customer-hour interruptions over the past five years. Obviously 2011 was a bad year for storms, in light of Hurricane Irene, Tropical Storm Lee, and an October snowstorm- resulting in the most customer-hours of interruption in 20 years. Mr. Worden advised that each major storm is reviewed, as there are always lessons to be learned regarding restoration and recovery, communications and mitigation.

Mr. Worden discussed 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, Mr. Worden 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.

Mr. Worden also discussed utility operation and maintenance (O & M) expenditures over the past half-dozen years. O&M work increases: 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. Mr. Worden stated that there is a backlog in addressing O & M activities, but Mr. Brown pointed out that the utilities have become more effective at prioritizing important projects.

Ms. Hogan then briefly addressed the potential reliability impacts with regard to complying with various environmental regulations. A 2010 Reliability Need Assessment concluded that about 64% of generation units would have to make some investments in order to comply with various air pollution regulations under federal and state laws. She stated that such regulations do not pose a threat to reliability at the state level, but that there might be some reliability issues in some localities.

Ms. Hogan noted that reliability is not something considered every four years; rather, it is reviewed on a continual basis. To date, reliability impacts from policy have been anticipated and changes in planning and operations have been incorporated to maintain reliability. For example,

NYISO's forecast has accounted for energy efficiency and the NYISO has incorporated wind in the day ahead market and has established a centralized wind forecast for the state.

Ms. Hogan then discussed future issues addressed in the reliability study. Generation will be impacted by retirements due to environmental compliance, 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 over the next several decades; 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.

In response to a question from Mr. Winebrake, Ms. Hogan stated that the STARS report estimated that the cost of addressing aging transmission and distribution infrastructure could be as much as \$25 billion over the next several decades. Several board members commented that many colleges no longer offer a specialty in power engineering, and that this will further exacerbate the shortage of skilled workers unless technical schools or community colleges expand their offerings in this area.

Mr. Curran then presented preliminary findings and recommendations from the reliability study, as follows:

- As assessed using existing metrics, the electric system generally appears to be reliable
- Policy makers should allow system planners and operators flexibility when developing policies
- Support cost-effective replacement of aging infrastructure
- Support diverse mix of electric generation fuel sources
- Monitor gas/electric interdependence
- Encourage workforce development
- Support distributed generation technologies
- Improve storm mitigation, restoration, and communication.

Mr. Murray stated that the next presentation would be by NYSERDA Associate Project Manager Andrew Kasius, who would address issues with regard to energy assurance planning. Mr. Kasius stated that NYSERDA received a grant from the U.S. Department of Energy to develop energy assurance planning capability in New York State. He explained that the electric transmission and distribution reliability study informs the energy assurance planning process, as does the State Energy Planning process.

Mr. Kasius explained that the primary goal of energy assurance planning is to improve energy supply reliability and reduce the probability and consequence of disruptions across all fuels. He stated that energy assurance, like the energy planning process, captures the energy profile in the State, examining energy usage, production, assets, consumption and stakeholders. Numerous data sources are gathered and reviewed to build situational awareness. A key concept in energy assurance is interdependency; this is especially important because some of the reports only look at single fuels. Energy supply and demand and stakeholder information is gleaned from sources such as the State Energy Plan; the 2012 NYSERDA NYS Patterns and Trends report, which is an annual energy statistical information compilation; the NYISO Gold Book, which presents up-to-date transmission and generation data and load forecasts for the next tenyear period; the U.S. Energy Information Administration State Energy Profile; and the New York State Energy Emergency Plan.

Mr. Kasius stated that government and industry stakeholders monitor the normal and seasonal flow and use of fuels. He explained that it is important to know who is tracking what and who holds what information. There are multiple levels of situational awareness:

- Real-time disruptions and response: DPS, NYSERDA, the Office of Emergency Management, NYISO and industry stakeholders
- Tracking data for inventories, production, demand, prices, and other indicators of fuel availability: DPS, NYSERDA and industry stakeholders
- Infrastructure monitoring from US DOE, the U.S. Coast Guard, State and industry stakeholders.

Mr. Kasius explained that market monitoring is also important. He cited the evolving petroleum fuel infrastructure in the northeast as an example. A changing industry structure, new fuel sources, and closures of regional refineries affect the State's supply chain, creating new vulnerabilities and potential supply disruption causes. As a consequence, New York is increasingly dependent on Gulf Coast pipeline shipments, international imports and other emerging U.S. sources. It thus becomes important to build and maintain operational awareness of storage, ports, tankers, barges, pipelines, and rail capacities.

Mr. Kasius stated that training to identify weaknesses and potential vulnerabilities is a key aspect to energy assurance planning. An energy disruption event may not rise to the level of "emergency," but it requires coordination of private and industry stakeholders, and hence communication is critical. Agency personnel engage in "Tabletop Exercises" in order to prepare for abrupt events. One exercise occurred in November 2011, during which the petroleum, natural gas and electric industries participated in a downstate exercise with local and state government representatives. The objective was to test the interplay of the natural gas and petroleum distribution systems during a cold weather pattern, coupled with regional transportation disruption. The exercise reinforced the mutual reliance among electric generators, natural gas system and petroleum distributors. However, there was limited awareness of each other's operating requirements. Additionally, petroleum was relied upon as fuel of last resort for multiple sectors; consequently, fuel inventories are a key factor.

Mr. Kasius stated that interdependencies and vulnerabilities are key concepts in energy assurance planning. He noted that fuels, electricity, communications and transportation are highly interconnected and interdependent. Key questions include the following: Where can the loss of one system affect the others? What is the potential for cascading effects? Planners seek to identify the State's energy supply blind spots. He presented a graphic created by ICF International as part of NYSERDA's subcontract of DOE funds to the Department of Homeland Security to examine interdependencies and vulnerabilities. Electricity powers key

communication components including SCADA (supervisory control and data acquisitioncomputer systems that monitor and control industrial, infrastructure, or facility-based processes), IP based networking, voice communications and network control; electricity also powers pipelines and some freight rail operations. Communications help control raw fuel delivery methods which affect raw fuel supplies. These raw fuel supplies power both the electrical system and onsite power back capacity for critical communication functions.

Additionally, electric distribution and transportation have a large interdependency. Electricity (1) provides both the main energy supply for some commuter rail lines and their monitoring and SCADA control systems, and (2) powers monitoring and control for the raw fuel delivery methods. These delivery methods affect final delivery of natural gas and oil which are key supply sources to the transportation sector.

Mr. Kasius next addressed energy supply disruption events and provided an overview of public and private response strategies. He stated that knowledge of stakeholder actions and response protocols helps improve the flow of resources and situational awareness. The key question is: "When things go wrong, what is everybody doing?" At the government level, federal and state roles and responsibilities must be clear. Communications protocols need to be in place and the recovery phase must remain both structured and flexible to adapt to circumstances. Industry stakeholders also need to identify response actions and market adaptations such as the following: repair and recovery of assets, mitigation, and mutual aid; alternative supply arrangements; and product delivery changes, e.g., customer curtailment programs.

#### Upcoming Board Meetings

Mr. Murray stated that the Energy Law directs the Board to publish a draft Energy Plan by September 1, 2012. He advised that the next meeting will be on July 9<sup>th</sup>, from 1-3 pm.

The final agenda item was other business; there being none, the meeting was adjourned at about 12:35 pm.

David A. Muno

David A. Munro, Secretary to the Board Deputy Counsel, NYSERDA

Exhibit A

# New York State Energy Planning Board

17 Columbia Circle Albany, New York 12224 tele (518) 862-1090 fax (518) 862-1091

May 29, 2012

## **NOTICE AND AGENDA**

### TO THE MEMBERS OF THE NEW YORK STATE ENERGY PLANNING BOARD:

PLEASE TAKE NOTICE that a meeting of the New York State Energy Planning Board will be held at the Albany office of the New York State Energy Research and Development Authority, 17 Columbia Circle, Albany, New York, on Monday, June 4, 2012, commencing at 11:00 a.m., for the following purposes:

- 1. To consider and act upon the draft minutes from the May 7, 2012 meeting.
- 2. Presentation to the Board and discussion of electricity system modeling cases and scenario update.
- 3. Presentation to the Board and discussion of the draft electric transmission and distribution reliability study.
- 4. Presentation to the Board and discussion of system resiliency and energy assurance.
- 5. To transact such other business as may properly come before the Board.

Members of the public may attend the meeting.

NYSERDA will be posting a video of the Board meeting to the State Energy Plan website (<u>http://www.nysenergyplan.com</u>) within two business days of the meeting.

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Francis J. Murray, Jr. Chair