NEW YORK STATE ENERGY RESEARCH AND DEVELOPMENT AUTHORITY

Minutes of the 212th Meeting Held on January 30, 2012

Pursuant to notice and an agenda dated January 18, 2012, the 212th meeting of the New York State Energy Research and Development Authority ("Authority" or "NYSERDA") was convened on January 30, 2012, at 12:00 p.m., in the Authority's Albany Office at 17 Columbia Circle, Albany, New York; by video conference in the Authority's New York City Office at 485 Seventh Avenue, 10th floor, New York, New York; and by video conference in the Authority's Buffalo Office at 726 Exchange Street, Suite 821, Buffalo, New York.

The following Members of the Authority were present in Albany, unless otherwise indicated:

Francis J. Murray, Jr., President and CEO (acting as Chair for this meeting)

George F. Akel, Jr.

Robert B. Catell

Garry A. Brown

Joe Martens

Elizabeth W. Thorndike, Ph. D.

Kevin Burke

Mark A. Willis (by video conference in New York City)

Members David Elliman, Joan McDonald and Michael Townsend were unable to attend.

Also present were Robert G. Callender, Vice President for Operations and Energy Services; Janet Joseph, Vice President for Technology and Strategic Planning; Jeffrey J. Pitkin, Treasurer; Hal Brodie, Esq., General Counsel and Secretary; David A. Munro, Deputy Counsel; Cheryl L. Earley, Director of Contract Management; and various other members of the staff of the Authority. In addition, Alan Michaels from the Department of Public Service ("DPS") was in attendance at the Albany location.

Mr. Murray explained that as President and CEO, he is authorized by NYSERDA's Bylaws to exercise the powers of the Authority's Chair when that position is vacant, as it is now. He stated that he was chairing the Board meeting and participating as a voting Member of the Authority. Mr. Murray then called the meeting to order and noted the presence of a quorum. He stated that the meeting notice and agenda were mailed to the Members and press on January 18, 2012. Mr. Murray directed that a copy of the notice and agenda be annexed to the minutes of the meeting.

Mr. Murray updated the Members on the numerous activities of the Authority over the last couple of months. First, the Governor recently submitted his executive budget to the Legislature for FY 2012-13 with no reduction in funding to NYSERDA. Mr. Murray also reported on several items that were included in the Governor's annual State of the State message:

- NYSERDA will begin accepting applications for on-bill recovery loans for residential homeowners on January 30, 2012. Working with the DPS and utility staff, NYSERDA has launched the program for residential homeowners early at the Governor's request, and will address providing on-bill recovery loans for small businesses, not-for-profit organizations, and multifamily buildings by May 30, 2012 as required by the Power NY Act of 2011;
- the Governor's NY-SUN initiative calls for the doubling of 2011 customer-sited photovoltaic installations during 2012 and for quadrupling the 2011 installations during 2013. Mr. Murray explained that the Authority has begun evaluating potential funding needs and developing policy options. In addition, Mr. Murray reported that the Authority had filed on January 30, 2012 a petition with the Public Service Commission ("PSC") for reallocating uncommitted Renewable Portfolio Standard ("RPS") funds, primarily to support additional customer-sited tier solar PV installations;
- NYSERDA and other State agencies and authorities, led by the New York Power Authority, are involved in a new initiative to increase energy efficiency in State buildings;

- the Governor announced a new Energy Highway initiative to address concerns regarding
 the State's aging electric infrastructure together with uncertainty going forward regarding
 the availability of certain generating facilities. NYSERDA is working closely with other
 State entities on a strategy to implement this new initiative;
- the Power New York Act of 2011 directed NYSERDA to conduct a study of the costs and benefits of increasing the amount of photovoltaic generation in New York to 5,000 megawatts by 2025. NYSERDA will be releasing its study as directed on January 31, 2012.

Mr. Murray briefly mentioned several other developments and activities:

- NYSERDA recently awarded \$30 million in RPS funds to assist in funding large-scale solar power projects in New York City and the lower Hudson River Valley, thereby promoting more clean-energy production in a part of the State that traditionally has been a large consumer of fossil fuels;
- the Brookings Institution/Rockefeller Foundation recent issued a new report on state clean energy funds and singled NYSERDA's CleanTech Incubator Program as a national model in helping to grow an innovative, clean-energy ecosystem across New York State. NYSERDA's Incubator Program includes six facilities, each focusing on clean-energy business development, located at universities including Stony Brook, New York University, Albany, Syracuse, Rochester Institute of Technology and Buffalo;
- the Citizens Budget Commission has selected the Regional Greenhouse Gas Initiative ("RGGI") program as the recipient of its award for Public Service Innovation. The three RGGI agency heads (DEC, DPS, NYSERDA) will receive an award on February 28th at CBC's Annual Dinner at which Governor Cuomo will be the featured speaker;
- NYSERDA staff will be filing revisions to the Authority's Energy Efficiency Portfolio
 Standard ("EEPS") programs and targets with DPS by March 31, 2012;

• NYSERDA staff also continue to be very engaged in working with the ten Regional Economic Development Councils.

Mr. Murray stated that the first item on the agenda was recognizing the important contributions of Judge Vincent DeIorio, who recently resigned from the Board due to his appointment by the Governor to the Joint Commission on Public Ethics. Mr. Murray asked Member Bob Catell to read a resolution commending Judge DeIorio's service on the Board. The Chair then asked if any Member wanted to comment. Dr. Thorndike stated that she had very much enjoyed working with Judge DeIorio, and she commended his integrity and judgment, stating that he served as a role model as a chairman of the Authority. Board members concurred with Dr. Thorndike's statement.

Whereafter, upon motion duly made and seconded, and by voice vote of the Members, the following resolution was adopted.

Resolution No. 1318

WHEREAS, Judge Vincent DeIorio has been a Member of the Authority for twelve years, the last ten as Chair of the Board; and

WHEREAS, during his tenure, Judge DeIorio led the completion of the transition of NYSERDA from an organization narrowly focused on energy research and development to one of the country's premier energy organizations, unique in its broad involvement in the study and implementation of energy efficiency, renewable energy, energy research and development and energy policy; and

WHEREAS, his contributions to the Authority have benefitted customers, ratepayers and the People of the State of New York;

WHEREAS, under Judge DeIorio's leadership, the American Council for an Energy-Efficient Economy recently found that New York is one of the leading states in the nation in energy efficiency, and ACEEE singled out NYSERDA as the "epitome of an effective and influential research and development institution;"

WHEREAS, Judge DeIorio has led NYSERDA with an extraordinary combination of wisdom, compassion, dignity, diligence, clarity and integrity which have served as a model and an inspiration to the entire Authority; and

WHEREAS, Judge DeIorio consistently demonstrated the same sincerity and kindness to all with whom he interacted at NYSERDA, making each and every person

feel that they are an integral part of what makes NYSERDA a success.

NOW, THEREFORE, BE IT RESOLVED that the Members of the New York State Energy Research and Development Authority, assembled on this thirtieth day of January, two thousand twelve, commend the Honorable Vincent DeIorio, and express their deepest appreciation, fondness and respect for his extraordinary contributions to the Authority and the betterment of the State of New York. We wish him good health and much success in his future endeavors.

Mr. Murray stated that the next agenda item was for the Members to consider a resolution approving revisions to the Authority's Budget for FY 2011-12, last amended at the October 2011 Board meeting. He asked George Akel, Chair of the Program Planning Committee ("PPC"), to discuss the proposed revised budget. Mr. Akel stated that the PPC held an Informal Session on January 23, 2012, and that the PPC heard a report from Treasurer Jeffrey J. Pitkin. Mr. Pitkin explained that the proposed change would remove language in the original budget to allow for performance-based salary increases and payments to staff modeled generally on salary increases being offered to State Management/Confidential ("M/C") employees based on collective bargaining agreements with the State's public employee unions. Recently, the State announced that eligible State M/C employees will receive performance advances retroactive to April 1, 2011. However, they will also be subject to Deficit Reduction Leave previously included in the negotiated contract with the State's major labor unions, requiring nine days of unpaid furlough leave through March 31, 2013.

Mr. Akel continued, stating that Mr. Pitkin explained that the proposed NYSERDA performance-based salary increases and payments would equal, in aggregate, the net amount employees would receive if they were State M/Cs, but it would accomplish the same net effect through a single action and without having to jeopardize organizational objectives through reductions in employee work. This approach results in approximately the same net effect on total salary expense for FY 2011-12 as the M/C approach, and it results in approximately the same annual salaries after the changes as the M/C approach. As a result of staff vacancies, the amount originally budgeted for FY 2011-12 for salary expense is sufficient to cover the proposed increases and payments without requiring adjustment. Mr. Akel concluded by stating that none of the participating Members expressed any concerns at the January 23rd PPC session with regard to this proposed revision to the Authority's FY 2011-2012 Budget.

In response to a question from Kevin Burke, Jeff Pitkin explained that evaluations of performance are based on whether employees meet or exceed standards established by supervisors in advance of the evaluation period. Mr. Murray noted that Officers would not be receiving performance-based salary increases or payments.

Whereafter, upon motion duly made and seconded, and by voice vote of the Members, the following resolution was adopted.

Resolution No. 1319

RESOLVED, that the Fiscal Year 2011-12 Budget and Financial Plan (Revised January 2012) submitted to the Members for consideration at this meeting, with such non-material, editorial changes and supplementary schedules as the President and CEO, in his discretion, may deem necessary or appropriate, be and it hereby is approved.

Mr. Murray then said that the next item on the agenda was a report on the Authority's proposed Fiscal Year 2012-13 Budget ("Budget"). Mr. Murray asked Mr. Akel, Chair of the Program Planning Committee (PPC), to summarize discussions on the portion of the proposed Budget relating to programs that the PPC oversees. Mr. Akel stated that at the recent PPC informal session, Jeff Pitkin reported on the Authority's proposed Budget for the next fiscal year. Mr. Akel stated that Authority revenues are budgeted at \$572.2 million for FY 2012-13, a decrease of \$47.3 million (8.2%) from the prior year. Significant changes include:

- an increase in the Technology & Market Development program (formerly referred to as the SBC program) collections, due to deferral of collections from previous years;
- an increase in scheduled collections under the RPS program; and
- an increase in anticipated revenues from selling allowances under the RGGI program.

These increases are offset by:

- a reduction in scheduled collections under the EEPS program;
- a decrease in State appropriation revenue due to a reduction in federal funding for West Valley and lower expenses for programs funded from a Capital Budget re-appropriation; and

- a decrease in federal grants revenue funding.

The FY 2012-13 Budget expenditures total \$721.3 million, an increase of \$28.4 million (3.9%) over the prior year. The Budget includes an increase of \$2.1 million in salary costs from the prior year. There is no increase in the number of budgeted staff, but there is an increase in the number of full-time equivalent staff, reflecting staffing vacancies during FY 2011-12. The budget includes funding for performance-based salary increases and payments comparable to those which may be authorized for State M/C employees, presuming these are approved. The Budget includes an increase of \$2 million for fringe benefit costs, primarily due to an increase in projected pension contributions and rising health insurance costs for current employees and retirees. Program expenditures increased \$24 million from the prior year. The increase is due to anticipated increases in expenses for EEPS, RPS, RGGI, and the Green Jobs-Green New York programs, offset in part by decreases in other NYSERDA programs.

Mr. Akel stated that given that the Waste and Facilities Management Committee was unable to meet, he would also provide some details behind two elements of the Budget typically considered by that Committee. First, the budget for the West Valley program totals \$12.4 million, a decrease of about \$2.9 million from the prior year, primarily due to a decrease in U.S. Department of Energy ("DOE") funding for the project. Included in the Energy Analysis program budget is funding to meet statutory requirements for collecting information and providing regular reports of low-level radioactive waste generation in the State. These activities are funded with a State appropriation of \$150,000 sub-allocated from an appropriation provided to the New York State Department of Health, which is funded through an assessment collected on operating nuclear power plant licensees. This amount is unchanged from the amount included in the current year budget.

The Budget includes \$10,746,000 for the State Cost Recovery Fee assessment, based on the amount assessed for the current year. The Budget also assumes that the enacted State Budget will include a requirement to make a payment of up to \$913,000 to the State general fund as in prior years. The Budget anticipates a balance of unrestricted net assets of \$3.3 million, representing approximately .5% of total funding. NYSERDA management believes this amount

is sufficient to meet working capital needs and unanticipated expenditures necessary to maintain public health and safety at the West Valley site.

Mr. Akel stated that none of the Members at the January 23rd PPC session expressed any concerns with regard to the proposed Authority Budget for FY 2012-2013.

Whereafter, upon motion duly made and seconded, and by voice vote of the Members, the following resolution was adopted.

Resolution No. 1320

RESOLVED, that the proposed fiscal year 2012-13 Budget submitted to the Members for consideration at this meeting, with such non-material, editorial changes and supplementary schedules as the President and Chief Executive Officer, in his discretion, may deem necessary or appropriate, be and it hereby is approved for submission to the persons designated in Sections 1867(4) and 2801 of the Public Authorities Law.

Mr. Murray then asked Mr. Akel to report on other items addressed during the informal PPC session on January 23rd. Mr. Akel stated that reports were given by Vice Presidents Janet Joseph and Bob Callender with regard to recent PSC funding decisions, as well as from Program staff regarding program modifications and future directions. Mr. Akel then summarized these presentations.

Janet Joseph, Vice President for Technology and Strategic Planning, and Bob Callender, Vice President for Operations and Energy Efficiency, began with an overview of the recent funding decisions regarding the System Benefits Charge ("SBC"). Ms. Joseph stated that the PSC approved a \$410 million, five-year funding proposal for the Authority's Technology and Market Development ("T&MD") portfolio. This represents level funding for technology and market development similar to those provided to NYSERDA under the prior SBC program. The T&MD portfolio is comprised of program areas that address power supply and delivery, buildings systems, and clean energy infrastructure. Ms. Joseph provided highlights of estimated benefits from the portfolio and also mentioned that this funding is strategically significant for the Authority's overall portfolio as the primary vehicle to advance new technologies.

Mr. Callender presented information about the PSC's reauthorization of the Authority's EEPS Program portfolio for an additional four years through 2015. The PSC approved an additional \$654 million for electric programs and \$324 million for gas programs that are projected to save over 5 million megawatt hours and over 9 million dekatherms, respectively. Mr. Callender reported that NYSERDA staff submitted an updated Operating Plan to the PSC in December and plans to submit additional proposed program revisions in the Spring of 2012.

Mr. Akel stated that the PPC then heard presentations by various Program staff that provided information regarding program modifications and future directions. The first set of presentations focused on NYSERDA deployment-oriented programs that seek to increase the market penetration of commercially available technologies in New York.

Residential Energy Services Program Director Karen Hamilton reported that with regard to on-bill recovery of energy efficiency loans, the program will be rolled out for residential customers a full four months early at the end of this month. Ms. Hamilton also reported that New York is seeking to double its 2011 customer-sited photovoltaic installations during 2012 and quadruple the 2011 installations during 2013 under NY-SUN. With regard to lighting technology, Ms. Hamilton mentioned new efforts underway in training and consumer education in response to the new federal lighting standards that became effective on January 1, 2012. She also briefly described a new interdepartmental initiative focused on accelerating the introduction of an emerging technology referred to as Emerging Technologies and Accelerated Commercialization ("ETAC").

Energy Efficiency Services Director Tom Barone updated the Members on efforts to achieve deep energy savings in the Commercial and Industrial sector, specifically highlighting a promising new initiative with Walmart in working toward the achievement of net-zero energy buildings. Building on Ms. Hamilton's presentation on ETAC efforts, Mr. Barone mentioned work underway to learn innovative approaches from other states on how to best support emerging technology and commercialization efforts. He also highlighted work on a Master Plan for accelerating energy-saving improvements in State facilities; spoke of refinements to programs, specifically the New Construction Program, in response to evaluation results; and

provided an update on the Authority's Combined Heat and Power efforts and the need to prepare funding options for consideration by the PSC.

Michael Colgrove, Director of NYSERDA's New York City Office, presented a new component to the Multifamily Performance Program in an effort to reach new customers that offers benchmarking and a basic energy audit to identify low-to-no cost improvements for building owners. Mr. Colgrove also explained efforts to study a variety of behavioral-based approaches to explore additional efforts to achieve energy savings with little or no direct financial incentive. He also announced the reinstatement of the performance payment to motivate building owners to continually optimize building performance after improvements are made.

Mark Torpey, Director of the Clean Energy Research and Market Development Program, spoke of efforts in the areas of Transportation Deployment and the RPS. Mr. Torpey emphasized the Authority's work with the State Department of Transportation and new federal funding that is leading to additional cost-shared opportunities to pursue a more diverse portfolio in this area. Mr. Torpey also presented some strategic challenges that staff sees on the horizon, such as how best to position to maximize the use of low-cost shale gas and properly gauge electric vehicle infrastructure with the availability of the vehicles.

With regard to the RPS program, Mr. Torpey pointed out that the 7th round of the Main Tier solicitation was recently completed and resulted in an increase in the renewable attribute price since the previous auction last April. If this trend continues in the future, this will present a challenge for meeting the 2015 RPS targets. Staff is closely watching this and continues to work with DPS staff. With regard to the Customer-Sited Tier, Mr. Torpey mentioned that the "geobalance" effort showed a fairly good performance with a 26% reduction in incentive price relative to the standard offer rebate program. He noted that some Customer-Sited Tier technologies such as digesters and fuel cells remain slow to gain market acceptance.

Mr. Akel stated that the next set of programs discussed focused on Energy Technology Innovation and Business Development.

Mr. Torpey spoke about supply-side and transportation technology innovation. On the supply-side he spoke of efforts to show tangible value of new technologies that reduce electric system losses and maximize assets. He also spoke of new efforts that will focus on reducing "balance of plant" costs for solar systems – costs than can be as high as 50% of total costs. With regard to off-shore wind, Mr. Torpey mentioned a new technology assessment that the Authority is launching. Regarding efforts in transportation technology innovation, Mr. Torpey talked about additional efforts to reduce vehicle miles travelled with ride-share and intelligent transportation systems. He also spoke of the Authority's work on "smart charging" for electric vehicles and mentioned again the synergistic relationship between the Authority and the Department of Transportation on many of these ongoing efforts.

Peter Douglas, Director of the Energy Efficiency Research Program, reported on the building and industry sector. He spoke of efforts to develop and demonstrate deep-retrofit envelope technologies, particularly in existing buildings. He also spoke of a new initiative to establish an Advanced Building Consortium to focus on the development of new technologies that have a higher likelihood of achieving market acceptance. Mr. Douglas also mentioned several of the new business development initiatives underway including Proof-of-Concept Centers as a way to further leverage ratepayer funds by focusing on early-stage development of technology prototypes and applications.

Turning to Energy Outreach and Marketing Efforts, Mary Chick, Marketing Project Manager, described how current marketing efforts are moving into the implementation phase, building on the strategic approached that was developed during 2009-2011. The focus is now on aligning the various marketing efforts and adjusting to market forces. Ms. Chick mentioned that the Authority's Comprehensive Marketing and Outreach Plans have been approved by DPS and that 2011 results have shown much promise in increasing program participation.

With regard to Energy and the Environment, the PPC heard from Mark Watson, Program Manager for Environment and Energy Resources, who reported that additional efforts are underway to build on the research needs and information gaps identified in the ClimAid Report and the Climate Action Plan. He also mentioned the Authority's leadership role in an

Interagency Adaptation Working Group. Mr. Watson provided an update on work with the Department of Environmental Conservation on the Environmental Impact Statement regarding Marcellus Shale, as well as current efforts that will build on resource characterization studies. In addressing the Biomass Heating Program, Mark mentioned that work is about to begin on the Biomass Heating Roadmap, an effort that will be complementary to the recently completed Biofuels Roadmap.

In addressing Planning and Policy efforts, John Williams, Energy Analysis Director, reported four current efforts:

- NYSERDA will be releasing a comprehensive solar study at the end of January 2012, as directed under the Power New York Act of 2011;
- activities pertaining to Cleaner Greener Communities;
- the first comprehensive three-year compliance period has closed for Regional Greenhouse Gas Initiative; over the three years, \$345 million has been allocated to identified program areas. A 2012 review is also planned;
- the Transportation Climate Initiative ("TCI"), which Mr. Williams characterized as the "RGGI for the Transportation Sector." New York is partnering with other states and the District of Columbia to address clean vehicles, sustainable communities, information technology systems and improved freight efficiency. This effort is funded through a \$1 million grant awarded to the Authority on behalf of the TCI.

In response to a question from Mark Willis, Mr. Williams stated that New York and the other RGGI states announced their decision to retire allowances that were not sold as of the end of the first three year compliance period. Mr. Williams added that New York was not counting on selling those allowances as part of RGGI's potential future revenue stream. Commissioner Martens emphasized that any decisions such as whether the cap will be tightened in the future will be made as part of the upcoming review of the RGGI program.

Mr. Murray then noted that the Waste and Facilities Management Committee was not able to meet, so he asked Paul Bembia, Program Manager for the West Valley Site Management Program, to report on recent activities at West Valley. Mr. Bembia provided a brief update on

the State Licensed Disposal Area ("SDA") and the West Valley Demonstration Project ("WVDP"), including an update on federal funding for the WVDP for FFY 2012.

First, for the State Licensed Disposal Area:

- The Authority's Environmental Monitoring data and inspection results continue to show that the SDA is performing well, and NYSERDA is in compliance with all regulatory requirements and permit conditions for the SDA.
- The water infiltration controls installed by NYSERDA in the 1990s are continuing to keep water out of the disposal trenches.
- Over the last two years, the Authority has been putting considerable effort into mitigating stream and gully erosion on a small stream that is immediately adjacent to the north end of the SDA. That stream is also close to the NRC Licensed Disposal Area, which is a disposal area at the Center that is managed by DOE.
- NYSERDA is modifying and armoring the stream channel to prevent erosion from destabilizing the disposal areas. Some of this work was done in 2009, additional work was completed in 2011, and the Authority will be reworking two more areas on this stream during the 2012 construction season.

Mr. Bembia then discussed the West Valley Demonstration Project (WVDP):

- At the WVDP, DOE's new prime contractor (a team consisting of CH2M HILL and Babcock and Wilcox – know as CHBWV) is continuing to come up to speed on the site.
 CHBWV is finalizing plans procedures and contract agreements as needed, and it continues to negotiate with DOE on scope and cost changes related to material differences between the Request for Proposals ("RFP") and actual site conditions.
- CHBWV has begun to process and ship waste low-level radioactive and hazardous waste.

- CHBWV is also preparing to start removing some support facilities, that are not needed
 any longer, and some floor slabs and foundations that remain from buildings that were
 removed previously.
- One of the critical tasks that must be completed as part of the current phase of the decommissioning work is the removal of the Main Plant Process Building. The Main Plant Process Building is a large, highly contaminated reinforced concrete structure that housed most of the spent-fuel reprocessing equipment and operations. Presently, the 275 canisters of solidified High-Level Waste ("HLW") are stored in a large shielded cell inside the Main Plant Process Building. In order to proceed with demolition of the building, DOE will remove the 275 solidified HLW canisters from the Main Plant Process Building and will then transport them to a new dry cask storage facility that will be built at the site. CHBWV just issued an RFP for the design and construction of the facility and the transfer of the canisters. DOE plans to complete the transfer of the HLW to the new facility by the end of April 2015.

Finally, Mr. Bembia provided a WVDP Budget Update:

- In December 2011 Congress passed the final FFY 2012 appropriation bill, and NYSERDA staff learned that the WVDP will be receiving \$66.6 million in federal funding for FFY 2012.
- On the positive side, this is \$6.6 million more than was requested in the President's FFY
 2012 budget request of \$60 million. (This additional \$6.6 million was appropriated for
 West Valley due to the efforts of Congressmen Tom Reed and Brian Higgins.)
- On the negative side, the DOE used a funding assumption of \$75 million per year when estimating that it would take 10 years to finish the first phase of decommissioning activities.
- At \$66 million, the Phase 1 Decommissioning activities will take 12 to 13 years to complete. If the WVDP is funded at \$60 million, which is the level the President initially proposed, it will take 14 to 15 years to finish the first phase of decommissioning.

- While ideally the Project would be funded at a level of \$85 million per year (the mean level of funding the Authority has received over the last 10 years), NYSERDA staff realize that may not be realistic in the current economic climate. Staff do think it is reasonable for the federal government to fund the Project at \$75 million, which is the level of funding DOE assumed when planning the current phase of the cleanup.
- Once the President's Fiscal Year 2013 budget request is released on February 13, 2012, the Authority will work with the Governor's Office to engage the New York State Congressional Delegation to address any funding concerns may be with respect to West Valley.

Dr. Thorndike asked whether reduced federal funding might mean that DOE would not perform certain activities. Mr. Bembia responded that DOE will still carry out all of the Phase 1 decontamination and decommissioning activities, but that such activities will be spread out over a longer period of time.

Mr. Murray stated that the next several agenda items pertained to matters addressed by the Audit and Finance Committee ("A&FC") earlier that day, and he asked Committee Chair Bob Catell for a report.

Mr. Catell stated that the A&FC first received a report from Treasurer Jeff Pitkin on the Green Jobs-Green New York residential energy efficiency financing program which was launched in November 2010. As of December 31, 2011, NYSERDA has received 2,747 applications for financing, and 1,658 or 60% of the applications have been approved. Of the approved applications, 94% of the applications have been approved under the conventional Tier 1 standards for loans expected to be financed through the capital markets, and the remaining applications have been approved through Tier 2 standards, which will be funded from the revolving loan fund until they have a demonstrated performance that would allow them to be financed through the capital markets. Of the 1,658 approved loan applications, 908 loans have been closed and purchased by NYSERDA totaling about \$7.9 million. Another 316 loans were approved pending closing for an additional \$3 million in loans. As of December 31, 2011, 903

loans are outstanding with an outstanding balance of \$7.6 million. There are nine accounts which are past due, representing .9% of the portfolio.

Mr. Catell advised that NYSERDA began accepting applications for on-bill recovery loans for residential homeowners on January 30, 2012. Working with the DPS and utility staff, NYSERDA has launched the program for residential homeowners early at the Governor's request. The Authority will address providing on-bill recovery loans for small businesses, not-for-profit organizations, and multifamily buildings by May 30, 2012 as required by the Power NY Act of 2011. Consumers will now have the option of electing whether they want to undertake an on-bill recovery loan or an unsecured loan. The terms of the on-bill recovery loan are the same as the unsecured loan, except that the interest rate will be 2.99%, and the annual loan payments cannot exceed the estimated annual energy savings.

The loan underwriting standards for residential on-bill recovery loans are the same as for the current unsecured loans, except that the borrower or co-borrower must own the property and must be named on the utility account of one of the six investor-owned utilities or the Long Island Power Authority. In addition, the borrower must provide a mortgage to NYSERDA, which will be recorded by a mortgage servicer NYSERDA has retained to record mortgages and mortgage satisfactions on a statewide basis. The loan will be repaid through a "NYSERDA Loan Installment" charge on the customer's utility bill, except if the customer's service is terminated or suspended NYSERDA's loan servicer will bill the borrower or property owner directly until utility service is established or re-established. In an effort to provide for the accelerated implementation of the program, while still providing sufficient time for utilities to make modifications to billing and other systems, the on-bill recovery loans will provide that any collections will not commence on the utility bill prior to June 1, 2012.

Several Members expressed an interest in receiving regular reports on program status (delinquency rates, write-off rates, and the like), especially given that New York is the first state to offer this program, so there is not much in the way of a track record. Mr. Murray responded that NYSERDA staff will provide regular updates.

Mr. Catell stated that the original approach for Green Jobs-Green New York was initially to fund loans from the revolving loan fund, aggregate the loans to a sufficient scale, and then issue bonds secured by the loan portfolio and reserve funds provided through a DOE grant. This would allow NYSERDA to leverage the program funding and support additional loan activity. The bonds were expected to be issued as Qualified Energy Conservation Bonds ("QECBs"), which provide a federal subsidy of about 70% of the interest cost on the bonds. Issuance of the bonds would require the use of QECB bond volume cap, and the State provided NYSERDA with authority to use about \$20.1 million of the State's QECB allocation plus any amounts reallocated to the State from any of the State's large local governments, which received QECB allocations totaling about \$182.1 million. However, there is growing concern that the limited use of QECB bonding authority to date may present a risk that the federal government will revoke the authority for QECB allocations not used. The interest rate set on the unsecured loans, and the interest rate proposed for on-bill recovery loans, were predicated on the substantially lower financing costs that would be realized through a QECB bond issuance. Revocation of the bonding authority could present a problem because loan repayments might then be insufficient to cover financing costs. As a result, NYSERDA staff believe it may be prudent to proceed with a QECB issuance before having the loan portfolio fully issued. Therefore, staff plan to present a plan to issue \$25 million in bonds to the Members for their approval at the April 2012 meeting. Following approval by the Members, the bonds would also require approval by the Public Authorities Control Board; thus, bonds would not likely be issued until April or May of 2012.

Mr. Murray stated that Bob Catell would next address the appointment of Bond Underwriters for the Authority, relating to its financings for the Green Jobs-Green New York program. Mr. Catell stated that the Members are requested to adopt a resolution approving the selection of Citigroup Global Markets, Inc., Jefferies & Company, Inc., and Samuel A. Ramirez & Co., Inc. as bond underwriters for bonds issued by the Authority associated with the Green Jobs-Green New York Program. The firms were competitively selected and will provide investment banking and bond underwriting services for a period of up to five years. The Board's Financial Services Firms Guidelines requires the Board's approval of the selection of bond underwriters.

Mr. Catell explained that in December 2011, the Authority issued an RFP seeking proposals from firms interested in providing investment banking and underwriting services related to bonds to be issued by the Authority in connection with the Green Jobs-Green New York program. The RFP indicated the Authority's intention to select up to three firms, with one award to a firm with a national underwriting practice serving large issuers, one award to a firm whose experience has been focused on small programs and issuers in the Northeast region, and one award to a certified Minority- or Women-owned business enterprise. The three firms selected would be assigned responsibilities to serve as senior manager on a rotational basis for program bonds issued over time with the other two firms serving as co-managers.

A Technical Evaluation Panel ("TEP") comprised of Authority staff and outside reviewers reviewed, scored, and ranked the proposals based on each proposer's demonstrated experience; understanding of and ability to perform the scope of services; assigned personnel; underwriting ability; and fees. Based on the TEP's recommendations, NYSERDA staff recommend appointing Citigroup Global Markets, Inc., Jefferies & Company, Inc., and Samuel A. Ramirez & Co., Inc. to serve as co-managers for bonds issued for the Green Jobs-Green New York Program. Mr. Catell advised that the A&FC concurs with staff's recommendation.

Whereafter, upon motion duly made and seconded, and by voice vote of the Members, the following resolution was adopted.

Resolution No. 1321

RESOLVED, that the Members approve the selection of the firms of Citigroup Global Markets, Inc., Jefferies & Company, Inc., and Samuel A. Ramirez & Co., Inc to serve as bond underwriters for the Authority related to its financings for the Green Jobs-Green New York Program.

Mr. Murray then asked Mr. Catell to report on the results of the Quality Assurance Review of the Authority's internal audit activities. Mr. Catell stated that the A&FC received a report from Mark Mitchell, the Authority's Director of Internal Audit, on a Quality Assurance Review of the Authority's internal audit function. Members were provided with a copy of the report in their board materials. The Quality Assurance Review is an independent assessment of

the internal audit activities, and it is required in order to meet internal auditing standards. The report assessed the Authority's internal audit activities and determined that they "generally conform" to the internal auditing standards promulgated by the Institute of Internal Auditors. This is the highest rating. The review also commends NYSERDA's internal audit function for being well-structured, progressive, and conforming to internal auditing standards given the small staff size of the Authority's internal audit function.

Mr. Catell stated that two opportunities for improvement were identified, which Mr. Mitchell intents to implement. The first recommendation is to better determine and communicate internal audit resource requirements to the Officers and the Members of the A&FC when preparing the annual internal audit plan. This recommendation will be implemented with the Annual Audit Plan for Fiscal Year 2012-13 to be submitted to the A&FC for review and approval at the April 2012 meeting.

The second recommendation is for the internal audit function to continue to develop a more interactive relationship between internal audit and the Officers so that, in addition to reporting independently to the A&FC, internal audit will be viewed and relied upon more by the Officers as a management tool for assuring that the Authority's risks are being appropriately managed and that internal controls are working as intended. To implement this recommendation, Mr. Mitchell will schedule a meeting with the A&FC Chair and the Officers to discuss organizational risks, and how these risks may be addressed through the development of internal audit activities to be included in the Annual Audit Plan for Fiscal Year 2012-13 to be presented for review and approval at the April 2012 meeting.

Mr. Murray then asked Mr. Catell to report on the final item addressed by the A&FC, which was a report from Mark Mitchell on the recent activities of Internal Audit. Mr. Catell advised that three final audit reports have been sent to the Members since the last regularly scheduled A&FC meeting.

In September 2011, an audit of a contractor providing program implementation services for NYSERDA's residential efficiency programs was performed. The contractor was asked to

reimburse NYSERDA for costs that were questioned during the audit. In all, the contractor reimbursed NYSERDA \$64,295 out of about \$11 million in costs billed during the period audited. The audit report made several recommendations to improve internal operations. The recommendations included: changing contractor billing requirements to demonstrate compliance with the contract provisions for billing of direct labor rates and indirect overhead rates; suggestions to improve the clarity of the Authority's standard contract language; a recommendation to discontinue the practice of allowing contractors to charge a fee based on project travel expenses; and to communicate to contractors and NYSERDA staff meal reimbursement requirements to ensure compliance with the New York State Public Officers Law, as well as NYSERDA's expense reimbursement policy. Management concurs with, and is implementing, the recommendations.

Second, an audit of an agreement with a contractor who provided support to the New York ENERGY STAR Homes Program was conducted at the request of the Program Director. The audit found that the contractor's hourly rate billings were higher than its actual labor costs. The audit also found that the contractor could not provide an acceptable cost allocation methodology to recover its fringe benefits and overhead costs. Although these costs were not disallowed, the audit recommended that the contractor develop an acceptable cost allocation methodology to support future billings to NYSERDA, which it agreed to do. As a result of the audit, NYSERDA was reimbursed for \$115,568 out of total billings of approximately \$1,485,000.

Lastly, an audit of the Main Tier RPS program was completed. The report found that every expenditure and encumbrance examined was properly accounted for. The audit concluded that the design of the program is effective and meets the requirements of the Commission's Order regarding RPS. The audit also concluded that the effectiveness of the RPS's internal control activities is adequate. However, the audit identified a few specific opportunities to improve controls, including improving recordkeeping associated with the solicitation process and improvements for the safeguard of the physical custody of letters of credit. Several of the recommendations identified during the audit were adopted and were in place and operational

during the solicitation that took place in January 2011, and management has agreed to implement the other recommendations.

Mr. Murray then asked Cheryl Earley, Director of Contract Management, to discuss the Periodic Procurement Contracts Report. Ms. Earley stated that pursuant to Public Authorities Law Section 2879, the Members are requested to adopt a resolution approving the Periodic Procurement Contracts Report covering the period August 16, 2011 through December 15, 2011.

The report summarizes 1274 procurement contracts exceeding \$5000 that were initiated or modified during the period. Over 97% of the procurement contracts were competitively selected and 99% of the dollars committed resulted from competitive procurement. Ms. Earley advised that all of the actions were in compliance with the procurement contract guidelines. The report also summarizes an additional 1,439 procurement contracts that are expected to be executed by the Authority, that have a period of expected performance in excess of one year. These contract actions total approximately \$265 million.

In addition, Ms. Earley indicated that the Members have been provided with a periodic report on Authority compliance with Article 15-A of the Executive Law which requires public authorities to make a good faith effort to solicit active participation by Minority and Women-Owned Business Enterprises ("M/WBE") in certain contracts. Of the 16 contracts subject to Article 15-A that were initiated or modified during the reporting period, 19% of the total number of contracts were awarded to certified M/WBEs, representing 22% of the total contract amounts.

Mr. Murray stated that Counsel's office has compared the list provided by Members of entities with which each Member is associated and which he or she believes may enter into contracts with NYSERDA to the list of contracts in the Periodic Procurement Contracts Report, and reports just a few potential conflicts. Specifically, the Authority has entered into or anticipates entering into contracts with Central Hudson Gas & Electric, Con Edison Solutions, and Consolidated Edison, identified by Garry Brown; Con Edison Solutions, Consolidated Edison, and Honeywell International Inc., identified by Kevin Burke; various SUNY campuses and affiliates and Stony Brook University, identified by Bob Catell; the Center for

Environmental Information, Cornell University, the University of Rochester, and Paul Smith's College, identified by Liz Thorndike; and New York University and JP Morgan Chase, identified by Mark Willis.

Whereafter, upon motion duly made and seconded, and by voice vote of the Members present, the following resolution was adopted. Mr. Brown, Mr. Burke, Mr. Catell, Dr. Thorndike, and Mr. Willis each abstained from the vote solely with regard to contracts involving the respective entities identified by each of them above.

Resolution No. 1322

RESOLVED, that the Periodic Procurement Contracts Report, covering the period August 16, 2011 through December 15, 2011, as presented at this meeting, including but not limited to the contracts identified therein which have been, or are expected to be, executed and which do have, or are expected to have, a period of performance in excess of one year, is hereby approved in accordance with Public Authorities Law Section 2879(3)(b)(ii).

The Chair indicated that the next agenda item was a report from Jason Doling, Research and Development ("R&D") Project Manager in Transportation and Power Systems, on one of the Authority's R&D programs, working with the New York Battery and Energy Storage Technology ("NY-BEST") Consortium. NY-BEST was announced in 2009 to help position New York as a global leader in energy storage technology for heavy-duty transportation, electric grid, and other applications. NYSERDA was charged with working with industry, academic and government partners to establish this industry-driven Consortium, which is being seeded by NYSERDA with approximately \$25 million through Clean Air Interstate Rule ("CAIR") proceeds. Mr. Doling briefly reviewed progress within NY-BEST since the NYSERDA Board approved the use of CAIR funds to support NY-BEST.

Initially, working groups comprised of interested parties were formed to help guide the research direction, testing needs, and governance of NY-BEST. The Consortium was incorporated by the NY-BEST Board of Directors in January 2010 as a New York State not-for-profit corporation. NY-BEST has three primary strategies to build the battery and energy storage industry in New York State. These include supporting networking and technology transfer

among the members; providing members with access to testing, characterization, and prototyping capabilities to improve the commercialization of energy storage solutions; and supporting research and development to develop new storage technologies. In turn, these activities will help to expand the energy storage industry in New York State, create economic growth and jobs, and reduce emissions through electrified transportation and grid storage solutions. Specific metrics will be used to assess the success of NY-BEST.

The Board of Directors of NY-BEST is elected by the membership and includes 17 board members: five from industry firms, five from academic institutions, and five selected from the membership at large. The President and CEO of NYSERDA and the Executive Director of the Division of Science, Technology and Innovation of Empire State Development are permanent members of the NY-BEST Board. In December 2010, the NY-BEST Board hired Bill Acker to be Executive Director of the Consortium and also hired a firm to provide operational support to the Consortium. Since beginning to accept members in January 2010, NY-BEST has grown to 92 members including emerging and established companies, research institutions, and end users such as utilities. In December 2011, NY-BEST received the first of two non-CAIR sources of funding: a \$98,000 economic development grant from National Grid and a \$3.5 million award under the Regional Economic Development Council program to help establish a Testing and Commercialization Center in the Finger Lakes region.

Mr. Doling then reviewed the research and development funding within NY-BEST. Seventeen research and development projects are underway, comprising \$7.7 in CAIR funding from NYSERDA and \$8 million in cost share. These include 15 seed projects that are identifying whether a technology holds promise for further development and two larger product development opportunities led by GE and Ultralife. Since the first round of NY-BEST research and development awards in 2009, NYSERDA staff has gathered feedback from a number of sources to identify technology development needs which the remaining funds could best address. NYSERDA also developed a survey for NY-BEST members to obtain their input into developing a solicitation that most effectively used the remaining research funds to advance a broad spectrum of technologies across the energy storage value chain. Feedback from those sources indicated that the next solicitation comprising the remaining \$5.4 million in budgeted

R&D funds would be most effective helping to transition technologies from the stage where technical feasibility had been proven to a working prototype to interest potential funders (internal or external to the organization). This solicitation is expected to be released in March 2012.

Finally, Mr. Doling reviewed the priorities for NY-BEST for 2012 and beyond. These include growing the Consortium into a sustainable organization, establishing the commercialization center, forming new commercialization partnerships, and grow the energy storage industry in New York.

Mr. Murray advised the Members that they would soon be receiving evaluation forms. Pursuant to the Public Authorities Reform Act of 2009, the Members are required to conduct an annual evaluation to measure their individual and collective effectiveness, determine if the Members are following their own policies and procedures, and identify areas for Board improvement.

At the request of Dr. Thorndike, Mark Watson, Program Manager for Environmental Research and Energy Resources, provided an overview of recent environmental stakeholder meetings held January 23-24, 2012 at NYSERDA's Albany office. The 21 environmental organizations in attendance expressed appreciation for NYSERDA's willingness to listen to their energy-related environmental concerns, and for providing a forum to explore collaborative opportunities. Issues discussed included: the status of the New York State Climate Action Plan; the status of the NYSERDA Solar Study; the status of meeting the goals of the RPS; the future of RGGI and New York State's potential leadership role in providing direction to all 10 RGGI states; concerns over waste-to energy projects, despite recent technological improvements; the role of NYSERDA's energy efficiency incentives in supporting the missions of the organization; Article X/Energy Siting issues, such as habitat fragmentation, emissions, transmission planning, energy security, potential closing of Indian Point, and ensuring that permitting reflects environmental interests and environmental justice concerns; energy storage/Smart Grid: an important component of energy planning, with specific issues including the potential Canada-NYC transmission line, microgrid/Distributed Generation-Combined Heat and Power opportunities in small communities, and anaerobic digester gas-to-electricity projects as an

underutilized potential; Marcellus shale/hydrofracking issues including cumulative impacts, fragmentation, emissions, and water quality; biomass - wood heat is a known large contributor to particulate matter in New York State and there is a need to get the important work NYSERDA has done in this area regarding efficiency improvements and emission reductions into the hands of decision-makers; the critical loads approach as a useful environmental planning tool; and the need for indoor air quality programs. A summary of the meeting will be sent to attendees.

At the conclusion of Mr. Watson's presentation, Kevin Burke suggested that, while NYSERDA has examined the extent to which energy efficiency and renewable energy programs have reduced the emissions of greenhouse gases, NYSERDA staff should also consider evaluating whether such programs have reduced impacts from other air pollutants as well.

Mr. Murray then asked if there was any further business. Thereafter, there being no other business, upon motion duly made and seconded, and by unanimous voice vote of the Members, the meeting was adjourned.

Hal Brodie Secretary



January 18, 2012

NOTICE OF MEETING AND AGENDA

TO THE MEMBERS OF THE NEW YORK STATE ENERGY RESEARCH AND DEVELOPMENT AUTHORITY:

PLEASE TAKE NOTICE that a regular (the 212th) meeting of the New York State Energy Research and Development Authority will be held in the Authority's Albany Office at 17 Columbia Circle, Albany, New York, and by video conference in the Authority's New York City Office at 485 Seventh Avenue, 10th floor, New York, New York, and by video conference in the Authority's Buffalo Office at 726 Exchange Street, Suite 821, Buffalo, New York, on Monday, January 30, 2012, commencing at 12:00 noon, for the following purposes:

- 1. To consider and act upon a resolution commending Vincent DeIorio for his many years of service as Chairman of the Authority.
- 2. To consider and act upon a resolution revising the Authority's fiscal year 2011-12 Budget.
- 3. To receive reports on the proposed FY 2012-13 Budget of the Authority from the Program Planning Committee and from the Waste and Facilities Management Committee and to consider and act upon a resolution approving the Authority's FY 2012-13 Budget.
- 4. To receive a report from the Program Planning Committee.
- 5. To receive a report from the Waste and Facilities Management Committee.
- 6. With respect to matters considered by the Audit and Finance Committee:
 - (a) to receive a report on the Green Jobs-Green New York program;
 - (b) to consider and act upon a resolution recommending the appointment of Bond Underwriters to the Authority;
 - (c) to receive a report on the results of the Quality Assurance Review; and
 - (d) to receive a report on recent internal audit activities.

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- 7. To consider and act upon a resolution approving a periodic procurement contracts report.
- 8. To receive a program report on one of the Authority's ongoing programs.
- 9. To transact such other business as may properly come before the meeting.

Members of the public may attend the meeting at any of the above locations. In accordance with guidance from the Office of Taxpayer Accountability, the Authority will be posting a video of the meeting to the web within two business days of the meeting. The video will be posted at http://www.nyserda.ny.gov/en/About/Board-Governance/Board-and-Committee-Meetings.aspx.

Hal Brodie Secretary