

PROGRAM PLANNING COMMITTEE  
OF THE  
NEW YORK STATE  
ENERGY RESEARCH AND DEVELOPMENT AUTHORITY

Minutes of the 66<sup>th</sup> Meeting  
Held on June 12, 2008

Pursuant to a Notice and Agenda dated June 4, 2008, a copy of which is annexed hereto, the 66<sup>th</sup> meeting of the Program Planning Committee of the NEW YORK STATE ENERGY RESEARCH AND DEVELOPMENT AUTHORITY was convened at 10:30 a.m. on Thursday, June 12, 2008, at the Authority's Board Room at 17 Columbia Circle, Albany, New York, and by video conference in the Authority's New York City office at 485 7<sup>th</sup> Avenue, 10<sup>th</sup> Floor, New York, New York.

The following members of the Committee were present:

Vincent A. DeIorio, Esq., ex officio  
Parker D. Mathusa, Committee Chair  
Robert B. Catell (via video conference from NYSERDA's NYC Office)  
Elizabeth W. Thorndike, Ph. D.

Also in attendance were Robert G. Callender, Vice President for Programs; Jeffrey J. Pitkin, Treasurer; Hal Brodie, General Counsel and Secretary to the Board; Tom Barone, Director; Janet Joseph, Director; Karen Villeneuve, Director; John Williams, Director; Gunnar E. Walmet, Director; Mitchell Khosrova, Associate Counsel and Secretary to the Program Planning Committee; and various members of the Authority staff.

Committee Chair Mathusa called the meeting to order, noted the presence of a quorum, and stated that a Notice of the meeting, see copy attached, was mailed to the Members and the press on June 4, 2008. He noted that this Program Planning Committee (PPC) meeting was being webcast to give the public access to watch the meeting through the internet from any location. All of the Committee members and Authority Officers introduced themselves.

Chair Vincent A. DeIorio thanked all NYSERDA management and staff for their recent hard work especially in the time since Paul Tonko resigned as President & CEO.

The first agenda item concerned the approval of the minutes of the 65<sup>th</sup> meeting of the Committee held on January 16, 2008. Whereafter, upon motion duly made and seconded, and by unanimous voice vote, the minutes of the 65<sup>th</sup> meeting of the Committee were approved.

Mr. Mathusa indicated that the Committee's central order of business was the review and approval of the proposed multi-year Strategic Program Plan entitled "*Toward a Sustainable Energy Future-A Three Year Strategic Outlook 2008-2011.*"

Chair Mathusa then introduced Vice President for Programs Robert Callender to provide an overview of the Authority's efforts on behalf of New York's energy, environmental, and economic future, and to introduce the updated Plan.

Mr. Callender stated that he was pleased to present the 2008-2011 Strategic Program Plan to the PPC for its review and consideration. Strategic planning is an important and necessarily continuous process at NYSERDA, and the Plan lays out the Authority's vision and strategy for New York State's energy future for the next three years.

He thanked Chair Mathusa, who has been instrumental in the development of the Strategic Program Plan, for remaining deeply involved throughout the entire year by leading the way, helping to outline strategies, and providing tremendous assistance in developing the current Plan. Mr. Mathusa's commitment and help are greatly appreciated.

On behalf of everyone at NYSERDA, Mr. Callender thanked all of the members of the Program Planning Committee whose expertise, input, and time were required for strategic planning.

Strategic planning and horizon scanning are critically important to NYSERDA's work. These efforts allow clear goals to be set, effective programs to be developed, and efficient utilization of technical, financial and human resources in achieving those goals. As NYSERDA routinely measures and evaluates its results against the Strategic Plan and the targets that it set, mid-course corrections can then be made if needed, thereby responding to NYSERDA's mission and the needs of New Yorkers most strongly.

Mr. Callender stressed that the current planning process has taken on a heightened level of importance. The energy, environmental, economic and educational challenges being faced today, as a state and nation, are serious, compounding and complex. New York, under the leadership of Governor Paterson, is committed to addressing these challenges in a holistic fashion. To that end, there are several new or expanded initiatives in which NYSERDA is a key participant, such as the State Energy Plan, "15 by 15", the Regional Greenhouse Gas Initiative (RGGI) and the Clean Air Interstate Rule (CAIR), the Renewable Portfolio Standard (RPS), the Clean Energy Collaborative and the Governor's Renewable Energy Task Force. NYSERDA must carefully manage and coordinate these essential and ambitious endeavors and work with its partners to provide the most effective solutions to today's challenges, which, in turn, place added importance on a sound and well-developed Plan.

The next agenda items were program presentations by each of the Program Directors supplemented by Program or Project Managers, to report on each program's accomplishments, upcoming initiatives and strategies, and a specific program area.

John Williams, who was recently appointed as the Director of Energy Analysis, reported first on program developments, including the addition of staff to meet expanded responsibilities for statewide energy planning and coordination of NYSERDA participation in Public Service Commission (PSC) proceedings. He highlighted support being provided to Research Development & Deployment (RD&D) to enhance the evaluation of program impacts. He also noted that Energy Analysis had recently relocated to 15 Columbia Circle – directly across the street from 17 Columbia Circle – to help accommodate planned staff growth.

Mr. Williams then provided an overview of the new statewide energy planning effort that was initiated by Governor Paterson's Executive Order dated April 9, 2008. He identified the composition of the Energy Planning Board, chaired by the Governor's Deputy Secretary for Energy. He described the overall planning requirements and purpose, and highlighted the Authority's significant and multiple roles in the planning process. Finally, he reviewed the schedule for completing the plan by June 30, 2009, and summarized the draft work scope of the plan which is now out for public review and comment.

Mr. Williams then introduced Program Manager Jack Spath, who discussed the draft Strategic Program Plan. He noted that instead of reviewing the internal process used for compiling the Strategic Program Plan, as has been done in the past, he was going to skip that this year other than to say that it is an iterative process between Senior Management and the various Programs with Energy Analysis serving as the overall facilitator, coordinator, and drafter of the Plan. It is essentially an ongoing process which has evolved considerably over the last few years and he believes that most of the managers and staff involved find that it works well.

Mr. Spath went on to say that for the last several years, NYSERDA's Senior Management has identified themes for the Strategic Program Plan and has worked with the programs to integrate the themes into the fabric of the Plan – in other words, to demonstrate where possible how the programs are addressing these topics. Six themes were identified this year, the most for any plan to date. They are described in some detail in the preface of the Plan and Mr. Spath then reviewed them.

First, *the increased importance of energy efficiency, a cleaner environment and renewable resources*: NYSERDA is a key player in a host of critical statewide and regional initiatives and the Plan will address how these are integrated into the programs; *the innovation economy*: the Plan looks to illustrate how NYSERDA is contributing to the new innovation economy – epitomized by high-tech, small scale development, and manufacturing; *energy workforce training and development*: a major challenge is ensuring the availability of trained workers to support the new energy technologies, and the Plan addresses what NYSERDA is doing to respond to that

challenge; *knowledge-based partnerships*: taking advantage of New York's world class educational system, NYSERDA programs continue to foster partnerships with business, industry and academic institutions to facilitate research and development, the creation of intellectual property, and workforce training; *reaching, informing, and educating citizens*: in addition to financial and technical assistance, NYSERDA provides objective, accurate, and accessible information that enables citizens to understand the scope, magnitude, and effects of energy use in their households and communities and provides a reliable reference source; *transportation*: NYSERDA continues to look for ways to make a greater contribution in this sector and \$4 a gallon gasoline provides a lot of incentive to such efforts. While good work has been done in this area, most people at NYSERDA believe it is still a very fertile sector for achieving energy savings and environmental improvements.

He then noted that two new Strategic Overviews, transportation and workforce development, were separated out of the programs and given their own special section.

Mr. Spath reported that the Plan contains more program highlights and vignettes - windows into particular projects or program area - which add richness without burdening the Plan with excessive program detail. He also noted that the Plan is more "reader friendly" with less jargon (e.g., the Residential Efficiency and Affordability program and Energy Efficiency Services program are now referred to as "Energy Services Programs" instead of "deployment programs"). The plan also recognizes NYSERDA's expected role in the State's "15 by 15" and energy planning initiatives.

Mr. Spath concluded by recognizing increased Board involvement this year. Mr. Mathusa took an active role and the Strategic Program Plan team met with him on at least three occasions to discuss plans and provide him a status report. He provided guidance and a Board perspective to the process.

Next, Director Karen Villeneuve reported on the Residential Efficiency and Affordability Program (REAP). With respect to the residential consumer market, there are more than 2,400 new and 4,300 existing homes, which is an increase from last year's numbers. Additionally, there was an increase in the new construction market and \$35 million of consumer investments in Home Performance with ENERGY STAR<sup>®</sup>. The new Multifamily Performance Program was launched in May 2007, and as of December 2007, NYSERDA had 43 new Multifamily Performance Partners and more than 77,000 units in the program. About 58% of the existing buildings are low income, while 78% of the new construction units are affordable housing. NYSERDA's Energy Smart Products program recruited 5 new manufacturing partners and 180 new retail partners, reflecting its expanded lighting and consumer electronics initiatives. Home Depot, Best Buy, Costco, Wegmans Grocery and Price Chopper all became new partners in 2007. More than 690 teachers attended Energy Smart Students workshops, who then reached more than 53,000 students. Finally, the redesigned GetEnergySmart.org web site was launched with improved navigation, making it easier for consumers to find information.

Ms. Villeneuve stated that with regard to strategies, NYSERDA will continue to use more regional and local marketing approaches, as opposed to statewide media, which was started in 2007 with positive results, and will continue to standardize and mainstream service delivery infrastructure training and development through its training network. NYSERDA will continue to form new strategic partnerships, such as those with the City of New York, utilities, national energy and regional efficiency organizations, to provide more cost-effective market research and support regional workforce development and outreach. Finally, NYSERDA will continue to push to raise the bar and increase energy efficiency standards, where the market is ready.

Ms. Villeneuve then described NYSERDA's new initiatives, which include an extensive and aggressive expansion of its workforce development, the promotion of a new energy-efficient mortgage now being offered by the State of New York Mortgage Agency (SONYMA), which relies on the ENERGY STAR Labeled Homes program for qualification of the home, and continued work with the lending industry to offer more mortgage, refinancing and assistance programs, particularly for the low-income sector. There will be some adjustments to the Home Performance with ENERGY STAR program to enable it to expand to the next level. NYSERDA staff are working with the New York State Builders Association to provide processes and financing models that will enable and encourage remodelers to increase their participation from past levels. For the near future, instead of new homes, people will be spending their money on additions and remodels, where much bigger electric savings are expected to be made through the program; i.e., new kitchens, new laundry rooms and new lighting. NYSERDA will also deliver consumer education, especially with respect to consumer and home office electronics, which represent the fastest growing electric load in homes today. Energy savings in this sector are just as related to behavior as to the products themselves.

Ms. Villeneuve introduced Program Manager John Ahearn to report on the residential Low Income programs. He first discussed the rapid rise in energy costs, particularly home heating oil, and its effect on low income households. The cost of home heating oil rose from an average of \$1.66 in April 2004 to \$4.07 in April 2008, which is an increase of 145%. Over the same period, the cost of natural gas rose by 32% and electricity by 25%. There are an estimated 2.9 million households eligible for energy efficiency services; however, over the past 10 years, fewer than 200,000 have received services from the federally funded Weatherization Assistance Program and System Benefits Charge (SBC) funded efforts. Current funding levels permit an estimated 32,000 low income units to be completed annually. Innovative approaches to lower housing costs include a pilot that will work with weatherization agencies to identify households with high interest rate mortgages and combine refinancing with an energy efficiency project.

Mr. Ahearn stated that there are some things that can realistically be done to address these challenges, such as combining Assisted Home Performance with ENERGY STAR and refinancing high interest rate mortgages. The savings from refinancing would be equivalent to obtaining a 9%, 30 year mortgage for only 6% since implementing a \$10,000 energy efficiency

project would exceed \$300 per month. SBC-funded low income energy efficiency and the Weatherization Assistance Program completed an estimated 32,000 units per year with a \$100 million budget. The Department of Public Service Staff Fast Track Proposal includes an increase of about \$66 million in 2009 for low income energy efficiency.

Mr. Ahearn went on to report that Assisted Home Performance with ENERGY STAR represented approximately 31% of Home Performance with ENERGY STAR projects, which is slightly down from last year. Energy efficiency improvements were completed in more than 3,200 multifamily units under the old Assisted Multifamily Program (now the Multifamily Performance Program). EmPower New York<sup>sm</sup> delivered energy efficiency services to more than 9,700 low income households; 531 energy and financial management workshops were attended by more than 5,100 individuals. The HEAP oil buying program was expanded from 39 counties to a statewide program last year, with more than 700 oil vendors participating; the Clean and Tune initiative provided service to 686 HEAP-eligible households.

Mr. Ahearn then introduced Program Manager Adele Ferranti to discuss NYSERDA's workforce training programs. She explained that senior management has moved to consolidate and coordinate all workforce training initiatives. The REAP Market and Community Support group will now manage all clean energy training efforts. The group will work closely with Energy Efficiency Services on all commercial and industrial energy efficiency training initiatives and NYSERDA will participate in a Green Collar/Green Job initiative as part of the Governor's Renewable Energy Task Force.

During discussion it was suggested that there is currently an opportunity to coordinate the Authority's efforts with the utilities to reach and assist the approximately 1 million low income households in the State.

Staff are developing and implementing a diverse portfolio of training classes and programs for builders, contractors, installers, architects and others. Training includes continuing education classes, one year certificate programs, and advanced degree programs; training will be offered across the State and incentives will ensure that training is affordable for the economically disadvantaged, minorities, workers that are looking to be retrained, veterans, etc.

Next, Ms. Ferranti talked about NYSERDA's current energy efficiency and photovoltaic partners. Hudson Valley Community College was competitively selected to develop the Center for Energy Efficiency and Building Science (CEEBS), with a training network of 10 training partners across the State. With just half of the energy efficiency schools up and running, over 730 students have been trained in the past 15 months, and NYSERDA is on track to train another 600-700 this year (without Energy Efficiency Portfolio Standard growth). Prior to the development of CEEBS, 1,200 energy efficiency students were trained through Onandaga-Cortland-Madison Counties BOCES. Photovoltaic training has been developed at 6 institutions, and to date approximately 700 installers have been trained through these programs. NYSERDA has offered additional

training to photovoltaic and wind installers, code officials, etc., reaching 2,300 students through 60 classes.

The National Energy Efficiency and Renewable Energy Workforce Training Conference for Educators, which was the first conference of its kind, was very successful, and planning is now underway for the next conference in Spring 2009.

With regard to current funding opportunities and future initiatives, PON 1196 covers all the customer-sided technologies funded under the Renewable Portfolio Standard plus solar thermal and geothermal. There is an additional \$2 million available in the budget for solar training at community colleges and NYSERDA will work closely with the Governor's Renewable Energy Task Force to develop programs.

Ms. Ferranti concluded by noting that good infrastructure is in place and therefore the programs can be expanded and strengthened.

The Committee then received a report from Tom Barone, Director of Energy Efficiency Services (EES). He explained that EES serves the commercial, industrial, and institutional sectors for all SBC-eligible customers. The 49 staff manages eleven programs to serve building, transportation, and market transformation needs. EES has an annual budget of approximately \$60 million. 2007 was a successful year for the Division, which met or exceeded its kilowatt hours (KWh) and kilowatt (KW) goals. Since the beginning of the SBC program, EES has saved 2,250 gigowatt hours (GWh) of electricity – the equivalent energy used in approximately 370,000 homes.

Mr. Barone stated that the K-12 schools market is an important sector for EES and that, so far, the Energy Smart Schools Program is responsible for benchmarking 30% of the 2,200 SBC-eligible school buildings statewide. The average school participating with NYSERDA in 2007 was 22% more energy-efficient than the average school in 2006.

In the critical New York City commercial real estate market, EES made great strides with the Energy Smart Focus on Commercial Real Estate Program, which is responsible for benchmarking 60 million square feet of office space. In the area of improving grid reliability, EES is responsible for 964 megawatts (MW) of peak load reductions, 340 MW of which is in the Con Edison service territory. In addition, 6 projects have come into the Combined Heat and Power Program, which will result in another 22 MW of load reduction in New York City.

NYSERDA's transportation programs continue to show tremendous success and are responsible for placing 3,500 alternate-fuel vehicles on the road at this time, with 34 accompanying new refueling stations. These efforts will help displace 68 million gallons of petroleum.

The Authority continues to see time-sensitive pricing ("real-time pricing" or "dynamic pricing") as being a critical issue for New York State consumers. In order for consumers to modify their

behaviors and use less energy during peak times. NYSERDA will need to ensure that they have consumption data readily available to them, and that the granularity of that data is sufficient to allow them to make intelligent choices. EES will be encouraging the installation of advanced metering systems to gather this information.

When evaluating NYSERDA's programs, energy and cost savings are generally easy to identify. This year, EES staff plans to increase their understanding of the non-energy benefits of the Authority's efforts, which are typically harder to quantify. In many cases, these non-energy benefits may be more significant than the energy savings themselves.

Pollution and the environment are at the top of the list on most consumers' minds. Nowhere are emissions reductions more needed than in the transportation sector, which contributes nearly 40% of carbon dioxide (CO<sub>2</sub>) emissions. This year, NYSERDA will increase its efforts to reduce transportation emissions with the use of non-SBC funds.

The Governor's "15 by 15" plan is aggressive and NYSERDA will be working to develop stronger strategic alliances with New York State utilities and with New York City in order to meet this goal.

The most effective way to reduce energy consumption is by strengthening the New York State Energy Code and appliance efficiency standards. The Energy Code was updated twice in 2008 and will probably be updated twice more by 2015. Increasing appliance standards will have an immediate impact since it involves equipment being installed now. The benefits of a revised Energy Code will take longer to realize due to the timelines required for new construction and substantial renovation projects. EES remains actively involved in Energy Code changes and developing more rigorous appliance standards.

Senior Project Manager Patrick Bolton, who works for Ruth Horton in the EES Market Transformation Unit, was then introduced to give a presentation on biofuels. Mr. Bolton reported that New York State has an 89% reliance on foreign petroleum, which is much higher than the national average. Transportation accounts for over 66% of petroleum and 1/3 of distillate use in New York. The Authority has been working with other State agencies and private enterprises to develop in-state production and distribution of biofuels for use within the State. In-state production of biofuels keeps New York energy dollars in the State, reduces the State's dependence on foreign oil and reduces emissions in several categories. Currently, New York has two ethanol production facilities and one biodiesel production facility. In addition to these traditional biofuel facilities, NYSERDA, in partnership with the New York State Department of Agriculture and Markets (Ag & Markets), is funding two pre-commercial scale cellulosic biofuel production facilities. These facilities will prove the ability of these technologies to manufacture biofuels from non-food, waste sources.

Governor Paterson's Renewable Energy Task Force included an examination of renewable fuels such as biodiesel and ethanol. The Task Force report calls for completion of a Renewable Fuels Roadmap, to be conducted by NYSERDA, the Department of Environmental Conservation (DEC), and Ag & Markets, which will consider life-cycle environmental consequences including emissions, sustainability and land-use impacts.

In addition, the report concluded: "... New York should continue to support development of a robust distribution network for renewable fuels, which will serve as the foundation for a future in-state bio-refinery industry." In keeping with the report, NYSERDA provides funding to regional petroleum terminals to install the equipment necessary to store, blend and sell biofuels to retail stations and fleets across the State. The incentives include 50% of the cost of equipment upgrades capped at \$150,000 per terminal. To date, \$1.8 million has been awarded for 14 terminals.

NYSERDA also provides incentives to retail gas stations to install equipment to store and sell blended biofuels to retail customers in New York. The incentives include 50% of the cost of equipment upgrades capped at \$50,000 per station and 70 applications have been received through the Biofuel Station Initiative, with 20 gas stations now offering E85 and/or B20.

There are barriers to introducing biofuels in New York, including regulatory, technical, institutional, and market barriers. These have been or are being addressed by efforts from Authority staff, partnering State agencies and private companies, and through legislation prohibiting exclusivity. The issues include finalizing a United Underwriters Lab certification of fueling equipment; getting a DEC waiver regarding Stage II Vapor Recovery for fueling; fuel cost and supply; notifying owners of flexible fuel vehicles of the fueling opportunity; dealing with perceptions of biofuel impact on environment and food prices; and fuel economy "penalty" for E10.

Mr. Bolton stated that New Yorkers are saving real dollars by using biofuels. The current price of E85 ethanol in Albany is \$2.99 per gallon, while the price of 87 octane gasoline is \$4.09 per gallon and rising. Even with a 15% fuel penalty running on E85, consumers are saving \$9.73 per 20 gallon fill-up.

Companies that are currently producing ethanol in New York State include Western New York Energy, which produces 50 million gallons of corn ethanol per year, and Northeast Biofuels, which produces 120 million gallons of corn ethanol per year. Both companies could expand cellulosic production.

There are two plants under construction: Mascoma, which is expected to produce 500,000 gallons per year of cellulosic ethanol, willows, paper sludge and switch grass, and Catalyst Renewables, expected to produce 130,000 gallons per year of cellulosic ethanol, willows and harvested wood. Also, there are additional plants, including cellulosic, in the planning stages. The current use of ethanol in New York is approximately 400 million gallons per year and increasing.

With regard to biodiesel production in New York, Northern Biodiesel, with a 15 million gallon per year capacity, is currently in the start-up phase. In response to comments, Mr. Bolton stated that NYSERDA has many alternative fuels programs and these include natural gas.

Mr. Barone then introduced Project Manager Louisa Plotnick, who made her presentation from NYSERDA's New York City office. She noted that the New York City office serves as the local presence of the Authority and is comprised of both Residential and Commercial & Industrial EES staff. The two units provide financial and technical assistance through their various programs to promote energy efficiency. Program staff focuses on deployment of programs as well as program design, project management and policy initiatives. Staff drives local program participation and assist customers in successfully completing all stages of involvement in NYSERDA programs.

The New York City office increases public awareness of NYSERDA programs and opportunities to achieve energy efficiency by actively engaging and building collaborations with major local stakeholders, including local government, utilities and associations. Staff is currently involved with a number of various partnerships such as Building Owners and Managers Association, the Building Congress, the Real Estate Board of New York, and the National Association of Energy Service Companies.

NYSERDA works with some of the largest companies in New York City, including publicly-held companies such as Citigroup, Verizon, Morgan Stanley, and the Waldorf Astoria; and real estate property managers such as Cushman & Wakefield, CB Richard Ellis, Jones Lang LaSalle, SL Green Realty Corp., Tishman Spyers, Vornado Realty Trust, Silverstein Properties, RFR Realty, LLC, The Durst Organization, and Grubb & Ellis.

Discussion followed regarding importance of stepping up the Authority's efforts for this coming winter heating fuel programs.

Next, the Committee received a report from Janet Joseph, Director of the newly renamed Clean Energy Research and Market Development Program, who listed some accomplishments, new initiatives and strategies. Sales of Clean Energy Products supported by NYSERDA were strong in 2007, with sales approaching \$115 million. The economic consequences of NYSERDA's R&D investments have been proven to be significant. A recent study conducted by the Energy Analysis Evaluation team concluded that for every dollar the Authority invests in product development, \$3 of economic benefit is produced in New York State. This is R&D-wide - including both the Energy Efficiency and Clean Energy Research programs.

Several of NYSERDA's partners in New York State have achieved significant technology and business development milestones this past year. Ms. Joseph gave a few examples to demonstrate these recent accomplishments: Double A Vineyards (Syracuse) had its first commercial sales of bioenergy crops; RailComm Inc. (Fairport) demonstrated 2 new products that could save the Metropolitan Transit Authority 100,000 MWh of electricity annually; Shorepower (Rome)

demonstrated a technology for an electrified truck parking corridor to reduce unnecessary diesel idling; O'Brien & Gere (Syracuse) demonstrated new technology to improve performance and cost effectiveness of sulfur oxide emission control for power plants; and Custom Electronics (Oneonta) attracted a \$3 million investment and a partner to form a new ultra capacitor business with support from the business growth and innovation program.

In addition to technology development, one of the Authority's corporate goals is to provide objective information to help inform decision-making. This past year NYSERDA has completed some significant policy research looking at ways to design an auction for a regional carbon emissions cap and trade program, which would be the first program of its kind in the world.

In another climate-related area, NYSERDA has launched several studies looking at the viability of carbon capture and sequestration, which is increasingly viewed as one of several strategies that must be explored to address climate change. In addition to supporting field studies, Authority staff is leading a working group to help develop policies and programs in New York State to further advance carbon capture and sequestration.

Another major goal of the R&D program is to increase the use of renewable resources, including the development of indigenous resources. The Authority has been very active in this regard over the past year and a few of the major accomplishments include the following: Over 1100 photovoltaic (PV) systems installed for a total of 6.9 MW to date, with another 3.4 MW in process; 11 anaerobic digester systems operating in New York State with NYSERDA support; anaerobic digester program launched under the RPS customer tier; applications received for an additional 20 facilities (5.8 MW); 3<sup>rd</sup> main-tier RPS procurement completed: 1,106 MW total renewable energy contract commitment, 261 MW of renewable energy in service, and a total of \$595 million committed under main-tier RPS which will result in approximately \$1.4 billion in local economic benefits. The first two Utica shale wells were drilled in New York in 2007, thus building on a 10-year NYSERDA natural gas research effort; the total New York market value associated with the development of the Utica and Marcellus shale could reach \$1 billion.

With regard to new initiatives and strategies, Ms. Joseph reported that in early 2008 an off-site strategic planning meeting for the R&D program was held. There was discussion about many of the significant energy challenges and opportunities ahead, including RGGI/CAIR, the need to do more in transportation, the need to develop models to better transition programs and technologies from deployment to R&D, and even discussion about what NYSERDA could do when gas hits \$5 a gallon - which in March seemed very high but is now right around the corner. Staff also explored new strategies to help the Authority's partners not only develop their technologies but also their businesses. Lastly, staff explored new ways to expand NYSERDA's partnership with universities in the clean energy space. Several of these new initiatives are outlined in the Strategic Program Plan, and Ms. Joseph went on to discuss a few of the major initiatives and strategies.

Both RGGI and CAIR present major opportunities for NYSERDA as new ways to fund initiatives in energy efficiency and clean energy in New York State. Staff is developing an operating plan for the CAIR program and expect to be selling the allowances this Fall; the NYSERDA Board will be presented with an update on this effort in September 2008. An operating plan for five RGGI programs is in the early stages of development, and the plan will probably be presented to the Board in April 2009.

NYSERDA is moving forward with an expanded electric transportation program, in partnership with the Metropolitan Transit Authority, which represents tremendous opportunities for New York State, as Ms. Joseph reported to the Board at the April Board meeting.

Staff is also exploring new ways of collaborating with the university sector to increase their engagement in the clean energy space, working in partnership with NYSTAR. Finally, the Authority is implementing a comprehensive Climate Change program.

Program Manager Mark Watson then gave a report on the Climate Change program. He noted that staff completed the update of the Environmental Monitoring Evaluation and Protection research plan through a joint effort with the New York Academy of Sciences and over 150 stakeholders.

The first two projects resulting from this effort are (1) a detailed study of New York State sources of greenhouse gas emissions, opportunities to reduce these emissions, and the associated economic costs, and (2) a focused study on New York State resources and infrastructure likely to be impacted by a changing climate, and potential adaptation strategies to address these impacts.

The Authority is one of 21 founding members of the Climate Registry in New York State, a non-profit partnership that is developing an accurate, complete, consistent and transparent greenhouse gas emission reporting protocol.

Mr. Watson went on to state that many local governments are seeking assistance with climate change issues, and NYSERDA's Focus on Municipalities program will provide hands-on assistance to municipalities looking to determine their carbon footprints, identify means to reduce their emissions, and locate funding resources.

The planning process for the new State Energy Plan has a climate change component, and staff will make sure that all of the Authority's relevant climate-related activities are coordinated with the planning process.

Next, Gunnar Walmet, Director of the newly reorganized and renamed Energy Efficiency Research Program, described the program's accomplishments in 2007, including the continued strong sales of products NYSERDA helped develop for a total of \$116 million, with \$660,000 of recoupment and creating 600 new jobs on an annual investment of \$4-8 million per year; the load

shed ballast, an important demand management technology the Authority helped develop, is now commercially available from Osram Sylvania; the Transmission and Distribution Research Program; and the CHP Demonstration Program, which continues very strongly with 51 projects operational of a total of 97. Of the 51, 32 projects are already reporting data on NYSERDA's on-line site. When all 97 projects are complete, NYSERDA will have invested \$62 million (matched by \$314 million in co-funding) and 219 MW of total capacity will be added to the system.

Other accomplishments which Mr. Walmet described briefly were the successful completion of the Albany Super Conducting Cable Project, the launch of a major new effort for very high performance residential buildings (serving to find new cost effective improvements to feed into REAP's residential program), and 8 solar thermal projects in the Authority's portfolio. Solar thermal has been under-emphasized in past NYSERDA efforts over the last decade, but these 8 projects supply the base upon which a much larger program can be developed in the future.

Mr. Walmet highlighted his group's new initiatives starting with the R&D reorganization, which shifts some responsibilities to a new program area called Transmission and Distribution and Exploratory R&D. He also described efforts to help address the very high rising cost of home heating oil by evaluating and demonstrating the use of bio-oil blends and work to move a number of very clean solid fuel combustion systems developed in Europe to New York State.

He went on to describe a program to improve the energy use in data centers, which are numerous in New York State. Data centers are consuming large and growing amounts of electricity and historically have been designed without any regard to energy efficiency. Several regional meetings on the topic have attracted overflow crowds.

Two other new growth areas are in solid state lighting (with a new dedicated solicitation and a new virtual incubator program promoting business development) and controlled environment agriculture. Staff believes that high performance transportation costs, the local food movement, and food safety issues favor controlled environment agriculture at this time.

Finally, Mr. Walmet described a number of "far out" ideas his group is exploring to see if they merit more serious efforts by NYSERDA. These include the energy applications of biomimicry, behavioral research to enhance public adoption of energy efficiency, and trying to identify what specific measures New York State should be undertaking to prepare for world-wide "peak oil" production problems.

The Chair noted that this was the last PPC meeting at which Mr. Walmet will be presenting since he is retiring this month. Mr. Walmet, who is recognized as a leader for over 25 years in energy efficiency R&D, has given the Authority long and valuable service and he will be missed by all.

Senior Project Manager Mark Torpey was introduced and gave a report on the Transmission and Distribution Program. He stated that in 2007, NYSERDA successfully launched a new initiative

entitled the Electric Power Transmission and Distribution Power Program. The programmatic objectives were defined through an open stakeholder process which included representatives from the New York Independent System Operator (NYISO), New York State Department of Public Service, New York State Reliability Council, Electric Power Research Institute, and all of the electric utilities in New York State.

A total of \$10 million was allocated as part of the five year SBC III program. The main objective of the new program is to sponsor research that improves the overall performance of the electric power delivery system. Funds are to be used exclusively for projects that provide significant public benefit and have broad statewide application.

Thus far, 15 projects have been funded with a total NYSERDA investment of \$6 million. This investment has leveraged \$54 million in external support. A wide range of projects have been selected, which include technology demonstration, product development, engineering studies, and policy studies.

Mr. Torpey went on to highlight a few of the projects that were selected in 2007, such as an engineering study with New York State Electric and Gas (NYSEG) to evaluate the use of underground salt caverns for compressed air energy storage applications. Compressed air will be pumped underground at night during off-peak periods and then released to create electricity via a turbo-expander during on-peak periods the following day.

Alcoa is studying whether its aluminum smelting facility can be operated to provide regulation service as part of a new NYISO program; the facility is analyzing how to adjust its process to earn additional revenue and hedge against rising energy costs. Consolidated Edison is demonstrating a technology that integrates a superconducting cable and a fault current limiter into one device. The underground cable will interconnect area substations and improve overall reliability of the distribution network in New York City.

A demonstration project with the Electric Power Research Institute will develop the tools necessary to improve operator visualization of the grid in real-time; phasor measurement units (PMUs) will be used to enhance situational awareness and prevent cascading blackouts. The New York Presbyterian Hospital will be testing an innovative ground fault current limiter as an integral part of a 7.5 MW cogeneration installation; successful testing of the device will promote the deployment of energy efficient distributed generation systems in critical load pockets. Superpower will design and test a superconducting fault current limiter (SCFL) for high voltage (138 kV) transmission applications; the SCFL utilizes state-of-the-art second generation high temperature super-conducting material manufactured in the Authority's own backyard in Schenectady.

A demonstration project with Orange and Rockland will focus on integrating smart grid technologies with an advanced metering initiative (AMI) and a "smart circuit" in West Nyack will

be deployed with automatic relays, advanced communications, and real-time power quality diagnostics to enhance distribution network reliability.

This year the Authority released a solicitation (PON 1208) for the remaining program funds in the amount of \$4 million and the first round closed on June 4<sup>th</sup>.

Mr. Torpey concluded by saying that NYSERDA has worked effectively with all of the stakeholders in New York to implement a program which has been so successful that additional funds are necessary to keep the momentum going.

Finally, the Committee heard from Vice President for Programs Bob Callender, who reported on the development of the Saratoga Technology + Energy Park (STEP). He began by providing the PPC with a brief overview of the proposed Three Year Strategic Plan that has been developed to support the continued build-out and marketing of STEP and then gave an overview of some of the Authority's accomplishments over the past year. The United Group (United) was competitively selected to develop, construct, finance, and manage the first new building at STEP. United secured the financing for the project, closed on its loan with Citizen's Bank, entered into a pilot agreement with the Saratoga Industrial Development Agency, and completed construction of 107 Hermes Road, which is a 105,000 sq. ft. LEED-rated manufacturing, lab, and office multi-tenant building that is now open and occupied by tenants. The new building has a very small footprint that is situated on a less than 7 acre parcel of land. United financed this \$15,000,000 building without any financial guarantees or collateral from NYSERDA. This development is truly an example of a public/private partnership.

Mr. Callender noted that this multi-tenant building is now the new home to Starfire Systems, Inc., Building Performance Institute Inc., Lockheed Martin Corporation, Electrovaya Company, Inc., Lighting Cultivator, Inc., and C-9 Corporation. United has signed leases with these clean-energy R&D, manufacturing, and service companies.

In accordance with the terms of the ground lease which NYSERDA entered into with its developer, United has paid the Authority a utility hook-up fee of \$632,000 and ground lease payments of \$52,000, and NYSERDA has also received roughly \$218,000 for the harvest of the trees. All of these funds, along with the Small Cities grant of \$750,000, future hook-up fees and future ground lease payments will be used to support the continued, market-driven, phased build-out of the Authority's infrastructure at STEP.

With respect to the infrastructure that is required to support the development of STEP, Mr. Callender reported that all the roads, gas, sewer, water, electricity and high-speed telecommunications have been installed to support the build-out of the initial phase at STEP. The STEP Master Plan and Land Plan have also been revised and updated to reflect the status and location of the completed infrastructure.

NYSERDA has made progress with its partners at the DEC on the design and development of the DEC's Alternative Fuel Vehicle Research Lab (Lab) which will be located at STEP. The final design and construction documents for the Lab have been completed by Affiliated Engineers Inc., and the Authority entered into a cooperative agreement with the DEC to construct the Lab at STEP. This state-of-the-art Lab will be designed to test vehicle emissions, help increase efficiency in the transportation sector, conduct R&D on new transportation fuels and technologies, and promote public-private partnerships and educational programs. The DEC is currently working with the State on how each project will be developed and financed.

Mr. Callender reported that staff has been working closely with Hudson Valley Community College (HVCC) on the development of the Training and Education Center for Semiconductor Manufacturing and Alternative and Renewable Technologies (TEC-SMART) at STEP. TEC-SMART is being designed to expand the much needed clean energy workforce in New York State. The initial programming of the building has been completed, and HVCC has secured the \$13.5 million in funding that is required to build the facility. NYSERDA will be receiving this funding directly and will be managing the construction of this facility on behalf of HVCC. TEC-SMART will be a key component of New York's clean energy future and a perfect fit for STEP's knowledge-based community strategy.

Mr. Callender went on to highlight a few of the accomplishments of the STEP tenants in 2007. Advanced Energy Conversion (AEC), an engineering R&D company that focuses on making power electronics, control systems, motors and pumps more energy efficient recently received a major award from NASA for an innovative integrated motor/pump design. AEC is currently in discussions with several companies that are interested in partnering with AEC on the deployment and delivery of this technology. ElectroVaya is a company that develops and manufactures rechargeable battery products that use its lithium-ion superpolymer battery technology. While its core product is the scribbler PC, ElectroVaya just announced a joint venture with Visionary Vehicles whereby ElectroVaya will supply its batteries to Visionary to be used in Visionary's new Plug-In Hybrid vehicle. Lockheed Martin is providing energy related consulting and management services to its customers that include utilities, end-users and NYSERDA, and Lockheed expects to significantly grow this sector of its energy business at STEP.

The most important initiative for STEP this year will be to competitively select a team to design and construct HVCC's TEC-SMART facility. It is hoped that construction of this LEED-rated 45,000 sq. ft. facility will begin later this year, with the building ready to open for classes in January 2010. The building will include classrooms, labs, and a clean room to support the semiconductor industry. HVCC will be training and educating Advanced Micro Device (AMD)'s workforce for its chip fab plant at Luther Forest Technology Campus. TEC-SMART will also include a large auditorium that may be available for use by all of the STEP tenants. This building will include geothermal, PV, and a fuel cell which will not only support the operation of the building, but will also be used by HVCC under its training activities.

This summer the park lighting will be installed, the miles of bike paths and hiking trails throughout STEP will be mapped and marked, and a gazebo will be built. Also, all of the signage for STEP will be installed.

Mr. Callender reported on two other infrastructure initiatives that will be completed shortly: the Town of Malta has started construction on the roundabout located at the entrance to STEP, and Verizon will be constructing a cell tower at STEP.

With respect to the Authority's strategies for STEP, staff want to continue to promote STEP as a knowledge community where businesses will be collaborating, sharing resources and ideas, and developing and manufacturing clean energy technologies that will help support New York's energy future. The NYSERDA/HVCC partnership is also critical to the knowledge community concept at STEP but, more importantly, it is critical to developing and growing the energy infrastructure and workforce that will be needed to support the development and deployment of the clean energy technologies that NYSERDA is growing in New York and it is a key component to knowledge-based economic development.

In an effort to promote collaboration in other areas, the Authority is working with its STEP tenants and the Capital District Transportation Authority on a web-based car pool program for STEP, an initiative which is expected to be launched later this summer. We are also working with AMD on an alternative fuel, clean energy shuttle bus service that will be used to transport STEP and AMD employees in and around the two parks and the Town of Malta during the day.

In summary, NYSERDA is continuing to create a high energy knowledge-based community in a setting that promotes economic development and preserves the character of the existing natural setting.

Next, Mr. Callender stated that the United Group will be submitting a proposal in the near future to construct a new building at STEP. It is anticipated that this building will include office, lab and manufacturing space and will be the home to a state-of-the-art, energy efficient data center. Staff hopes to present a new ground lease for the PPC's consideration at the September PPC meeting.

Finally, as NYSERDA continues to grow STEP, it will be necessary to expand the Authority's range of partnerships and marketing activities to promote STEP and its STEP tenants. Staff will continue to work with the Saratoga Economic Development Corporation (SEDC), Luther Forest, Center for Economic Growth, HVCC, AMD and the existing STEP tenants on promoting and marketing STEP to potential tenants on a state and national level. As a result of these partnerships, there are currently a number of new leads that are interested in taking space at STEP in the near future. NYSERDA needs to enhance its network of partners to help promote STEP and will be looking to work with other universities, colleges, incubators, manufacturing associations, site selectors, venture groups, real estate firms, Empire State Development and New

York State Foundation for Science, Technology and Innovation (NYSTAR).

Extensive discussion followed regarding the process to determine the appropriate base line numbers to be used in the Governor's "15 x 15" plan; the need for understanding community sensitivity related to natural gas drilling and bio-fuel programs; and the fact that NYSERDA's environmental monitoring program's budget has not increased for several years and needs to be significantly increased due to the importance of Climate Change issues.

The next item on the agenda was to consider and act upon a resolution recommending approval of the multi-year Strategic Program Plan entitled "*Toward a Sustainable Energy Future-A Three Year Strategic Outlook 2008-2011.*" Based on all the reports and discussions regarding the Plan as presented, upon motion duly made and seconded, and by unanimous voice vote, the Committee recommended that the full Board adopt the Resolution approving the Plan. A copy of said resolution is attached hereto as Exhibit A.

Mr. Mathusa asked if there was any other business before the Committee. There being none, upon motion duly made and seconded, and by unanimous voice vote of the Members, the 66<sup>th</sup> meeting of the Program Planning Committee was adjourned.

Respectfully submitted,



Mitchell Khosrova  
Secretary to the Program Planning Committee

**NOTICE OF MEETING AND AGENDA**

June 4, 2008

TO THE MEMBERS OF THE PROGRAM PLANNING COMMITTEE:

PLEASE TAKE NOTICE that a meeting of the Program Planning Committee (the 66<sup>th</sup> 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, located at 485 Seventh Avenue, 10<sup>th</sup> floor, New York, New York, on Thursday, June 12, 2008, commencing at 10:30 a.m., for the following purposes:

1. To consider and act upon the minutes of the 65<sup>th</sup> meeting of the Program Planning Committee held on January 16, 2008.
2. To receive an overview from the Vice President for Programs on the content of NYSERDA's multi-year program plan entitled "*Toward a Sustainable Energy Future-A Three Year Strategic Outlook 2008-2011.*"
3. To receive reports on NYSERDA's efforts in the areas of Energy Analysis, Residential Efficiency and Affordability, Energy Efficiency Services, Clean Energy Research and Market Development Program, Energy Efficiency Research Program, and Saratoga Energy + Technology Park (STEP).
4. To consider and act upon a resolution recommending approval of the multi-year program plan entitled "*Toward a Sustainable Energy Future-A Three Year Strategic Outlook 2008-2011.*"
5. To transact such other business as may properly come before the Committee.

Members of the public may attend the meeting at either of the above locations. The meeting is also available through webcast at <http://www.nyserdera.org/governancemeetings.asp>.



Mitchell Khosrova  
Secretary to the Program Planning Committee

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Exhibit A

Resolution No. \_\_\_\_\_

RESOLVED, that the multi-year program plan for New York's energy, economic, and environmental future (2008-11) submitted to the Members for consideration at this meeting with such non-substantive, editorial changes and supplementary schedules as the President, in his or her discretion, may deem necessary or appropriate, is adopted and approved as the Authority's updated three year program plan; and

BE IT FURTHER RESOLVED, that, to effectuate the purposes, aims, and goals described in that plan, the Members approve the total expenditure in fiscal year 2008-09 of \$456,742,000 as set forth in Table 2 of the plan from various funds anticipated to be available and such additional amounts, as may be determined appropriate by the President, as may become available and not required for other purposes.

BE IT FURTHER RESOLVED, that the information contained therein is adopted and approved for submission, in whole or in part, pursuant to Section 2800 of the Public Authorities Law.