

STATE OF NEW YORK
PUBLIC SERVICE COMMISSION

Proceeding on Motion of the Commission
Regarding an Energy Efficiency Portfolio Standard

Case 07-M-0548

**PETITION FOR ALLOCATION OF UNCOMMITTED
EEPS FUNDS FOR WORKFORCE DEVELOPMENT INITIATIVES**

Introduction

The New York State Energy Research and Development Authority (“NYSERDA”) respectfully files its Petition for funding to support Energy Efficiency Portfolio Standard (EEPS) Workforce Development (WFD) Initiatives originally approved under the Commission’s June 2009 Order (“2009 Order”).¹

In October 2011, the Commission issued two Orders, in Cases 07-M-0548 and 10-M-0457, relating to SBC-funded public benefit programs in New York. In those Orders, the Commission set forth requirements and opportunities under which NYSERDA, as administrator of EEPS and T&MD program portfolios, could propose adjustments to its respective portfolios. On this date, NYSERDA is submitting a series of separate but related proposals and petitions that present options for Commission consideration under each portfolio. A detailed explanation of the relation of these proposals and petitions can be found in Appendix A.

Specifically, NYSERDA seeks approval to: (i) allocate \$24 million of uncommitted EEPS-1 program funds² to support Workforce Development program initiatives; and (ii) modify its WFD Operating Plan to continue certain WFD efforts and include new WFD efforts to further support EEPS programs and initiatives. NYSERDA’s Proposed Workforce Development Program elements are included in Appendix B. This funding request is for program expenditures previously authorized by the Commission for NYSERDA’s EEPS programs.³

Background

In its June 2009 *Order Authorizing Workforce Development Initiatives*,⁴ the New York State Public Service Commission (“Commission”) approved a Workforce Development Program (WFD) to be administered by NYSERDA.⁵

¹ Case 07-M-0548, *Order Authorizing Workforce Development Initiatives*, issued June 22, 2009.

² NYSERDA is proposing that the uncommitted funds of \$24 million sought in this Petition consist of \$12 million of uncommitted EEPS-1 electric funds and \$12 million of uncommitted EEPS-1 gas funds.

³ This funding request is for program expenditures, without any additional increase to program administration and program evaluation funds.

⁴ Case 07-M-0548, *Order Authorizing Workforce Development Initiatives*, issued June 22, 2009.

⁵ NYSERDA’s proposal included a strategy for developing a qualified workforce equipped to meet the EEPS goals, and was informed by the work of EEPS Working Group VII. EEPS Working Group VII included representatives of 14 entities including utilities, customer advocates, efficiency services providers, workforce development

NYSERDA's WFD Operating Plan ("Plan") detailed specific goals to provide the present and future workforce with the technical skills necessary to serve the needs of the portfolio of programs funded through EEPS, and to overcome the barriers to workforce training and to expand the existing energy efficiency training infrastructure across the State. Using EEPS-1 funds, NYSERDA established the necessary infrastructure, recruited training partners and trained new instructors, and supported curriculum development and equipment purchases to achieve these goals. EEPS-2 funding is intended to capitalize on these investments.

Under the Plan, the projected number of training participants was approximately 6,200 trained and certified New Yorkers during the first year of the expanded program, plus an additional 2,300 trained through the New York State Department of Labor's (NYS DOL) Career Pathways Initiative.⁶ NYSERDA has exceeded these goals, working with over 50 new partners that provide energy efficiency training in support of EEPS (provided in Appendix C), upgrading the skills of over 8,830 energy efficiency workers, including helping emerging, transitional, and disadvantaged workers.

NYSERDA collaborated with NYSDOL to train additional workers under Career Pathways initiatives, providing existing and new workers with technical training and related certifications necessary to meet, and continue to meet, the skills requirements in a variety of jobs.⁷ NYSERDA also works closely with NYSDOL to develop and align training for current and emerging workers through NYSDOL One-Stop-Career centers⁸ and the State's Workforce Investment Boards.

In its June 2009 Order, the Commission stated that its authorization of one year of funding would, in all likelihood, be insufficient to satisfy all programmatic needs on a long-term basis. The Commission also anticipated that federal funding would become available for all or part of the Statewide training proposed by NYSERDA.⁹ Leveraged funding, such as that provided under ARRA State Energy Program (SEP),¹⁰

professionals, and government agencies and authorities. In its report submitted in October 2008, EEPS Working Group VII recommended that the Commission approve NYSERDA's proposal for \$5.4 million per year for the 2009-2011 period, and further recommended that an additional \$2 million per year for three years be approved to provide energy efficiency training to low-income populations, in conjunction with the "Pathways Out of Poverty" Program to engage disadvantaged communities. NYSERDA incorporated this recommendation ("Career Pathways for Engaging Disadvantaged Communities") in its December 2008 supplement to its previous WFD proposal.

⁶ The Career Pathways Initiatives help to develop a quality workforce designed for high-growth sectors of the job market and moving New York State residents forward towards financial independence. Career Pathways links basic education to occupational training, and when combined with integrated support services, enables participants to advance over time to higher-wage jobs in targeted industry sectors. NYS Office of Temporary and Disability Assistance and NYSDOL have administered \$17.5 million in ARRA funds to launch Career Pathways programs.

⁷ WFD and Training initiatives have helped to prepare and advance workers in energy efficiency areas such as: home and building audits; HVAC system installation and repair; lighting design and installation; green buildings; building design and construction; building controls; system maintenance; insulation and air sealing; and high-efficiency motors. Workers have received nationally-recognized credentials offered by the Building Performance Institute (BPI), Association for Energy Engineers (AEE), US Green Building Council (USGBC), Northwest Energy Efficiency Council's Building Operator Certification (BOC®), and the National Council on Qualifications for the Lighting Professions (NCQLP).

⁸ The NYSDOL One-Stop-Career Centers target workers to participate in training and certification programs. NYSDOL training programs focus on the entry-level skills necessary for entry-level employment within the energy efficiency sector, while NYSERDA's efforts target basic skills training, in cooperation with State agencies and community-based organizations, to prepare participants for more specialized training related to energy efficiency programs.

⁹ Case 07-M-0548, Order Authorizing Workforce Development Initiatives, issued June 22, 2009, pp. 9-10.

has been fully expended and no additional funding is expected at this time. SBC funds to support energy efficiency training have been eliminated. NYSDOL’s discretionary funding Workforce Investment Act funding has been significantly reduced, and Green Jobs-Green New York workforce training funds will be fully committed by the end of 2012. At present, the \$5.8 million in program funds previously approved for WFD efforts under EEPS-1 is over 98% committed with the remaining balance to be used for professional certification reimbursements and contracts currently in review.

EEPS-2 funding for WFD initiatives is critical to carrying forward the investment made in training infrastructure that was established by the Commission as part of EEPS-1 and the implementation work being carried out in the portfolio of EEPS programs. The chart below shows the progress and status of these efforts to date.

EEPS-1 Workforce Development and Training Metrics

Program Components	EEPS-1 WFD Program Goals	No. Contracted to Date (% of Goal)	No. Completed to Date (% of Goal) ¹
Technical Training	2,225	4,308 194%	912 41%
Career Pathways	1,797	2,926 163%	856 48%
Professional Certifications	2,215	1,601 72%	656 30%
TOTAL	6,237	8,835 141%	2,424 39%

¹ All efforts are contracted to be completed by June 1, 2012.

WFD and Training Needs To Further Support EEPS

To ensure continued success of the EEPS program portfolio, additional training is necessary, predominantly, for incumbent workers. Under EEPS-1, the focus was on development of the State’s new and incumbent workforce to accommodate a rapid expansion in energy efficiency programs. EEPS-2 programs will focus on skills training, predominantly for incumbent workers to help ensure sustainable savings. EEPS Working Group VII identified numerous studies of the efficacy of workforce development, including one which found that training in the proper installation of air-conditioning and heat-pump equipment increased equipment performance by 24% in existing homes and up to 35% in new construction.¹¹ Recent indirect impact evaluation of California statewide energy efficiency education and training programs show, “net savings of the Energy Centers are similar in magnitude to the savings achieved by other individual IOU programs that reach similar sectors and is estimated to provide an additional 5% to the overall projected energy impact of the portfolio.”¹²

¹⁰ NYSERDA leveraged \$4 million of ARRA SEP funds for the purchase of training equipment for renewable energy and energy efficiency training partners, and another \$6.5 million ARRA SEP and ARRA Energy Efficiency Community Block Grant (EECBG) funds for energy code training. Other State initiatives received ARRA funding, including \$15 million allocated by DHCR for Weatherization Assistance Program (WAP) training, \$50 million allocated to NYSDOL for Emerging and Transitional Worker Training, \$17.5 million for NYSDOL/OTDA Career Pathways, and \$5 million NYS DOL Disconnected Youth programs.

¹¹ Case 07-M-0548, *Order Authorizing Workforce Development Initiatives*, issued June 22, 2009, p.6.

¹² *Indirect Impact Evaluation of the Statewide Energy Efficiency Education and Training Program*, Volume I of IV: Final Report, p.ii, Study ID: CPU0014.01, prepared by Opinion Dynamics Corporation, Wirthshafter Associates,

Findings from NYDOL’s \$1.1 million State Labor Market Intelligence (LMI) Improvement Grant (ARRA-funded) confirm the need for additional training and funding to support the attainment of credentials and to meet labor demands.¹³ These findings include:

- Among green construction firms, 17% indicated difficulty in recruiting qualified green workers; 10% cited difficulty in recruiting more than one green occupation.
- Approximately 6,900 construction trades firms in New York are engaged in energy efficiency activities such as retrofitting or new green construction.
- The top green credentials preferred by construction trades firms in New York included LEED (21%), BPI (14%) and NAHB (9%).
- Approximately 77% (5,660) of all green firms in the construction trades require employees with enhanced skills and prefer on-the-job and in-house training programs.

The NYSDOL Green Jobs Study on Labor Market Intelligence (LMI) identifies 77% of those workers considered to be in “green” jobs¹⁴ in the construction industry, and 98% of workers in the professional services industry, to be in jobs that require enhanced skills. The EEPS workforce development and training initiatives proposed in this Petition will serve approximately 20% (about 18,000) employees identified by surveyed employers as requiring enhanced skills, as shown in the table below. Future training initiatives will address recommendations from employer groups to provide more hands-on and practical training such as on-the-job or in-house efforts. These methods of training tend to be more costly, and yet are a key strategy in future EEPS workforce development initiatives.

LMI Research Results for Construction and Professional Services Industry, 2011

LMI Research	No. of Firms in Industry Cluster	No. Employed in Cluster	No. of Green Firms	No. of Green Employees	No. of Green Employees Requiring Enhanced Skills
Construction Industry	26,980	226,020	7,370	76,600	58,982
Professional Services Industry	10,300	138,600	2,840	38,490	34,256
TOTAL	37,280	364,620	10,210	115,090	93,238

Continuous technical training is critical to realizing the anticipated EEPS energy savings and is needed to improve the installation, operation, and maintenance skills in support of the EEPS programs portfolio. WFD initiatives will support trainers who work with program implementation contractors and other partners and contractors to provide on-site practical skills and other forms of technical assistance to bridge the gap from training to field performance. While this proposal also includes limited efforts to continue career pathway initiatives that prepare workers for energy efficiency jobs that were implemented

Inc. for California Public Utilities Commission Energy Division. http://www.calmac.org/publications/06-08_Statewide_Education_and_Training_Impact_Eval_Vol_I_FINAL.pdf

¹³ NYSDOL’s LMI Improvement Grant research included interviews of over 20,000 companies within selected industries that produce goods or services that increase energy efficiency or generate renewable energy. The research included six industry clusters: building services; component manufacturing; electric power generation, transmission and distribution; financial services; professional services; and construction.

¹⁴ While “green” touches nearly every sector of the economy, such as agriculture, conservation, education, energy, transportation, etc., New York’s green jobs survey focused only on renewable energy and energy efficiency.

using EEPS-1 funding, the main goal of new initiatives would be to update and expand the skills of existing workers that support the portfolio of EEPS programs.

Although significant efforts have been made to develop and integrate energy efficiency workforce training elements in many regions of the State, barriers still exist for practitioners. Training costs are significant, certification preparation costs and exam fees are rising, there is limited opportunity for on-the-job and hands-on training to expand skills, and travel costs and time lost on the job for training are substantial issues for employers.

The table below provides a breakdown of NYSERDA’s proposed WFD budget by major category and estimates for the numbers trained by category. It is important to note that the estimates of “numbers trained” does not represent the number of actual individuals trained as it is not uncommon for an individual to attend more than one training program or session (particularly with regard to Career Pathway Initiatives).

WFD Budget Categories 2012-2015 (Proposed)

	TOTAL Budget	\$ per Trainee	# Trained over 4 Yrs	Average # Trained per Year
Direct Program Implementation	2,400,000			
Technical Training	10,000,000	\$725	13,793	3,448
OJT and Hands-on Training	5,600,000	\$3,000	1,867	467
Career Pathways	3,600,000	\$1,125	3,200	800
Marketing and Outreach	2,400,000			
TOTAL BUDGET	\$24,000,000			
TOTAL TRAINED			18,860	4,715

The construction trades and professional services industry clusters surveyed during the LMI research effort are identified as having specific impact on achievement of EEPS goals. Key findings most relevant to the needs of the EEPS are presented below.

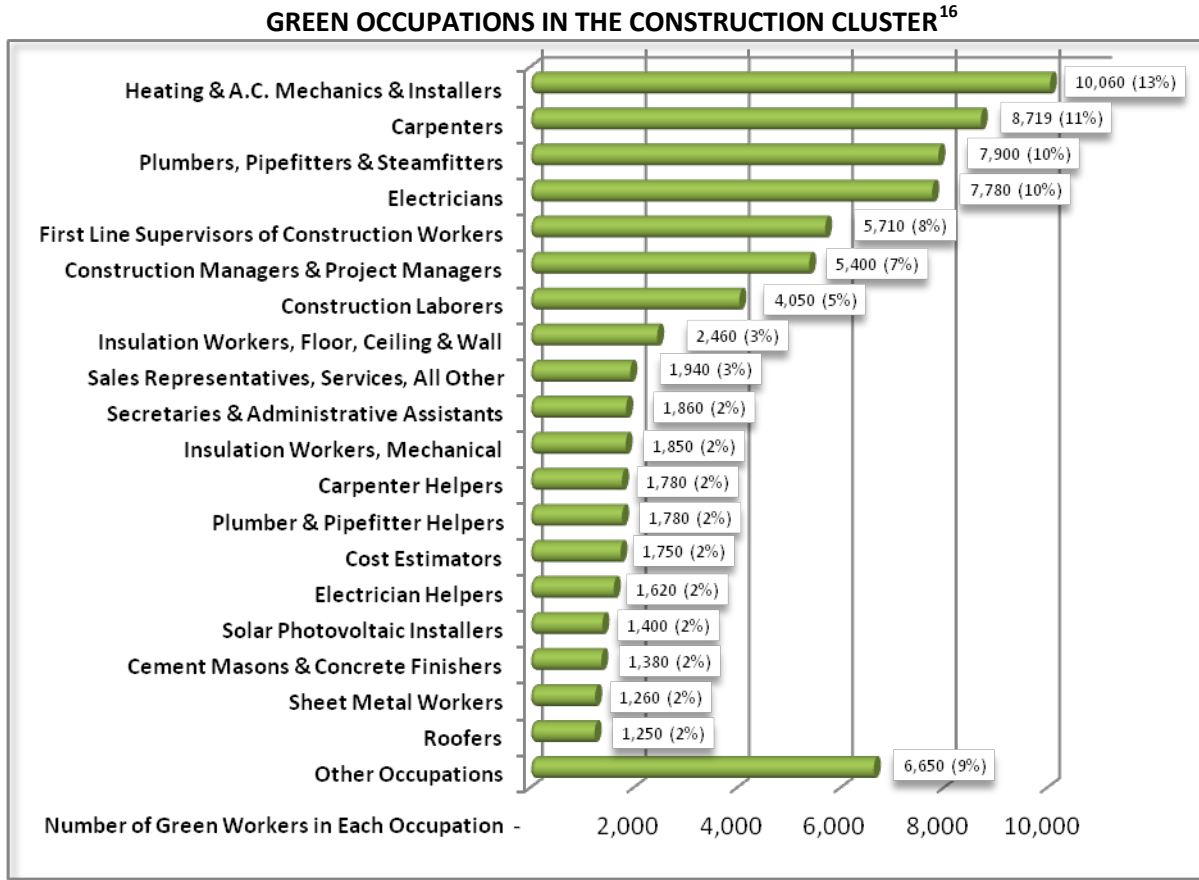
Construction Trades. In the fourth Quarter of 2010, there were 35,104 firms in the construction industry in New York State, employing 216,030 people. More than a quarter of firms report having “green” employees, representing 76,600 green employees, or 34%, of total construction industry employment in New York State. As part of the statewide Employer Survey, approximately 77% (5,660) of Green firms in Construction Trades indicated that their green occupations required enhanced skills.

Focus groups with construction employers, mentioned other key occupations aligned with EEPS needs included:

- *LEED Supervisor or LEED Coordinator*
- *Job Estimators*
- *BPI-certified Energy Auditor*
- *Field technicians*
- *Weatherization “crew” members*
- *Expeditors*

The top green occupations, which account for more than half of the State’s “green” jobs in Construction are: Heating and Air Conditioning Mechanics and Installers; Carpenters; Plumbers, Pipefitters & Steamfitters; Electricians; and Supervisors of Construction Workers.¹⁵

The table below identifies those occupations that employers reported as “green” in this cluster.



The LMI Study results show that the Professional Services industry cluster is equally important in achieving the goals of the EEPS program portfolio.

Professional Services. In the fourth Quarter of 2010, there were 14,416 firms surveyed in the professional services industry in New York State, employing 138,556 people. Thirty-five percent of the firms and 37% of the jobs are located in New York City, while another 31% of the firms and 27% of the jobs are located in the other downstate regions of Long Island and Hudson Valley.

¹⁵ The NYSDOL Green Jobs Study on Labor Market Intelligence (LMI) identifies nearly all of these job titles as “likely to have a tight labor supply.” LMI at p. 15

¹⁶ NYS Department of Labor (DOL), *Green Job Study*, 2011; www.labor.ny.gov/states/green/index.shtm.

Occupations in this sector are focused in the architecture, engineering, management, scientific, and technical consulting services industry. Environmental consulting firms identify and evaluate environment problems and offer solutions. Architect and engineers are involved in both the design of new construction projects and retrofits to existing buildings, including the design of electrical and heating and cooling systems. Engineering firms represented in LMI focus groups mentioned that the following occupations were most important to serving the energy efficiency sector: *energy engineer, design engineer, mechanical engineer, electrical engineer, and operating engineer*. One participant pointed out that most energy auditors are mechanical engineers.

Interviews with architects mentioned both architects and mechanical engineers as critical to green design.

- *Design engineers* need to have the expertise to design and implement energy saving building systems such as lighting systems, plumbing systems, electrical systems, and heating and cooling systems.
- *Energy engineers* look at the entire building—the envelope, the systems, the electrical systems, lighting systems and model the building – so they can evaluate independent energy conservation measures as well as looking at how they interact with each other. Focus group participants noted that a great deal of sophistication is needed and that it requires a substantial amount of training.
- Representatives of consulting firms mentioned the need for *financial analysts* who understand the relationship of energy to total energy cost.
- Some engineering firms design, manage and run energy efficiency programs and have a need for *program evaluators, measurement and verification professionals and inspectors*.
- Another skill shortage area often mentioned in the employer focus groups was *Heating, Ventilation and Air Conditioning (HVAC)*, where companies reported that additional training is needed for HVAC technicians.

WFD Deployment Strategy for 2012-2015

In his 2012 State of the State address, Governor Cuomo announced several key initiatives focusing specifically on energy efficiency measures that will require training to upgrade and expand workers skills. In January 2012, on-bill financing was initiated for consumer energy efficiency upgrades. Through an agreement with utility providers to allow consumers to pay for these upgrades, it is anticipated that 40,000 homes across New York State will participate over the next several years, thereby increasing the demand for trained workers. The Governor has also made a priority the acceleration of energy-saving improvements at State-owned facilities that are expected to reduce the lifecycle greenhouse gas emissions by 8.1 million metric tons while creating thousands of high-skilled jobs.

Future WFD funding will complement the Governor's initiatives by focusing on the skills needed to support the current EEPs programs, including new construction, new market ready technologies, existing homes and commercial facilities, operations and maintenance, and low-income programs. Technical training will focus on the energy efficiency measures that have been prioritized in the EEPs proceeding, specifically those measures highly correlated with reduced electric and gas demand and consumption. These measures include: HVAC, lighting, advanced lighting controls, building management systems, building operations and maintenance improvements, home retrofits, weatherization, and air-sealing.

Using competitive and open enrollment solicitations, NYSERDA will work with new and existing training partners to offer local training that meets specific employer needs. The existing programs and

infrastructure established through SBC and the first round of EEPS provide the foundation for increased training efforts necessary for achieving and sustaining EEPS goals. Support for instructional infrastructure (equipment, trainers, manuals, etc.) will be provided, as well as the development of new training standards and standardized curriculum, the integration of high school career planning activities with workforce training, and financial assistance for tuition, certification, internships and apprenticeships. Partners include State universities, community colleges, BOCES, not-for-profits, trade unions, manufactures, and third-party training organizations.¹⁷ Emphasis will be placed on technical areas aligned with EEPS investments, through further integration of energy efficiency curriculum into existing degree track and certificate programs to ensure future self-sustainability.

One goal will be to reach more students in targeted career areas such as HVAC contractors, electricians, plumbers, builders, and general contractors. Additionally, there is an identified need to support skill enhancement in the professional services and construction industry clusters as described above. Training may include, but is not limited to, that which is geared toward energy engineers, design engineers, architects, and LEED supervisors and coordinators.

NYSERDA plans to use two mechanisms to expand existing and deploy new training programs:

- *Incentives to Expand Existing Training and Support Industry-recognized Credentials.* By building on Training Partnership Agreements in strategic areas, established training programs can be quickly expanded. In addition, the program will require and provide assistance to training organizations to become accredited or recognized by an independent third party. Areas to be addressed include: basic skills training, train-the trainer, internships, apprenticeships, hands-on and on-the-job training, on-line and distance learning, professional development and practitioner certification. NYSERDA will also continue to provide incentives for tuition support. These Agreements and incentives will be executed through an open enrollment incentive pool.
- *Competitive Solicitations for New and Existing Training and Standards Providers.* NYSERDA will issue competitive solicitations for targeted initiatives to help address specific skill gaps and local employer demand. Solicitations will target new and existing training organizations or professional standards and certification entities. Areas to be addressed include: work standards development, and Career Pathways and Technical Training curriculum development. Solicitations could be issued in specific areas (geographical areas, technical training area, basic skills training in a new language, HVAC internships, apprenticeship programs for electricians, CEUs for architects/engineers, or energy efficiency training modules for manufacturers). Solicitations will be used as a tool to fill gaps and help meet the goals for the WFD efforts.

¹⁷ Several new Training Partners include: Ulster BOCES, Capital Region BOCES (HVAC training); Erie Community College, Monroe Community College and CEWW BOCES (BPI Training); IBEW-NECA (Advanced Lighting Controls Certification); 14 Joint Application Training Centers located Statewide; and HVCC and Stony Brook Manhattan (AEE Certified Energy Manager Certification Training), Solar One (Home Performance), Association for Energy Affordability (Benchmarking training), Local 94 Building Operating Engineers (HVAC and Controls), among others.

Conclusion

As the Commission acknowledged in its June 2009 Order,¹⁸ WFD initiatives are essential to remediate the skills gap and to minimize the inefficient use of public resources and shortages of specially-trained workers in the majority of occupations in the energy efficiency sector. With the Commission's support, we have built a strong infrastructure and Statewide network to support WFD. NYSERDA respectfully seeks the Commission's approval to allocate \$24 million in uncommitted EEPS funds to continue these efforts as described herein.

NYSERDA remains committed to working with DPS Staff, Program Administrators, and stakeholders to continue to support EEPS programs by furthering the goals of the State's workforce development and training initiatives.

Dated: March 30, 2012

Respectfully submitted,

A handwritten signature in black ink, reading "Francis J. Murray, Jr." in a cursive script.

Francis J. Murray, Jr.
President and CEO
NYSERDA

¹⁸ Case 07-M-0548, *Order Authorizing Workforce Development Initiatives*, issued June 22, 2009, p.6.

Appendix A. NYSERDA Submissions to the New York State Public Service Commission – March, 2012

I. Requirements in Commission Orders; NYSERDA Filings

In October 2011, the Commission issued two orders relating to System Benefits Charge (“SBC”)-funded public benefit programs in New York State. An Order¹⁹ authorizing efficiency programs (“EEPS Order”) was issued on October 25, 2011 and an Order²⁰ approving NYSERDA’s proposed SBC Technology and Market Development (“T&MD”) portfolio (“T&MD Order”) was issued on October 24, 2011.

These Orders established requirements for the submission of certain reports and provided for petitions to be filed by NYSERDA by March 31, 2012. Given the interrelated nature of the various individual programs impacted by the Orders, the subject matter of the petitions is in many cases interrelated. This Appendix identifies and summarizes each of the documents filed by NYSERDA in response to the Orders.

The following two reports were submitted by NYSERDA on March 9, 2012:

- Accounting of Uncommitted EEPS-1 Funds: The EEPS Order required NYSERDA (and other Program Administrators) to submit an accounting of EEPS-1 funds that were uncommitted as of December 31, 2011. The EEPS Accounting Report identified \$26,947,153 of uncommitted EEPS electric program funds and \$30,184,777 of uncommitted EEPS gas program funds.
- Accounting of Uncommitted SBC III Funds: The T&MD Order required NYSERDA to submit an accounting of SBC III funds that were uncommitted as of December 31, 2011. The SBC Accounting Report identified \$27,509,008 of uncommitted SBC funds.

Filings Responsive to the EEPS Order

The EEPS Order required or authorized NYSERDA to submit: (1) a petition detailing any program modifications that would result in substantial impacts on targets and budgets, and (2) request for authorization to use uncommitted EEPS-1 funds for particular programs.

On March 30, 2012, NYSERDA submitted the following in response to the EEPS Order:

¹⁹ Case 07-M-0548; 07-M-0141, Order Authorizing Efficiency Programs, Revising Incentive Mechanism, and Establishing a Surcharge Schedule, issued October 25, 2011.

²⁰ Case 10-M-0457, Order Continuing the System Benefits Charge and Approving an Operating Plan for a Technology and Market Development Portfolio of System Benefits Charge Funded Programs, issued October 24, 2011.

- 1) Petition for Modification of EEPS Budgets and Targets. This Petition requests certain program modifications and modifications to NYSERDA's EEPS budgets and targets. NYSERDA is proposing reductions to targets in eleven electric programs, reductions in targets in eight gas programs, increases in targets in two gas programs, and a re-allocation of funding between programs to optimize the portfolio in the context of market needs. This Petition also reflects NYSERDA's Recommended Proposal for funding the CHP Performance Program, which consists of a \$30.6 million transfer of EEPS-2 program funds (\$35.9 million in total) to T&MD for, with the balance coming from uncommitted EEPS-1 funds. Pursuant to the Order and guidance provided by DPS Staff, NYSERDA has included an *Alternative Option* that would fund the CHP Performance Program entirely through a transfer of EEPS-2 funds to T&MD. The rationale for these alternatives is addressed in the Petition, and in the Petition for Allocation of Uncommitted EEPS Funds to the CHP Performance and Empower Programs.
- 2) Petition for Allocation of Uncommitted EEPS Funds for Workforce Development Initiatives. This Petition requests authorization of \$24 million of uncommitted EEPS-1 program funds to allow for program continuity for workforce development efforts. The EEPS Order did not provide funding for workforce development, creating a funding gap for important workforce development activities.
- 3) Petition for Allocation of Uncommitted EEPS Funds to the CHP Performance and Empower Programs. This Petition corresponds with the other submitted options, in that \$19.4 million of uncommitted EEPS-1 program funds are proposed to be used to partially meet the Commission's CHP Performance Program directive under the Recommended Proposal. This Petition also addresses the funding shortfall for the expanded Empower (gas) Program directed by the Commission in the EEPS Order, and proposes using \$13.8 million of uncommitted EEPS-1 gas funds for the expanded Empower (gas) Program. Since the CHP Performance Program is funded fully with EEPS-2 funds under the Alternative Option, in that scenario a total of \$18.2 million of uncommitted EEPS gas funds are available to cover the expanded Empower (gas) Program, and \$14.9 million of uncommitted EEPS electric funds are available and proposed to be directed toward the high-performing, high-demand Existing Facilities Program (EFP) and the New Construction Program (NCP).

Table 1 outlines the major elements in each of the Petitions listed above and illustrates both the Recommended Proposal and the Alternative Option that is included in NYSERDA's EEPS-2, CHP Performance Program, and uncommitted EEPS Funding Petitions.

Filings Responsive to the T&MD Order

The T&MD Order (Case 10-M-0457) directed or authorized NYSERDA to submit: (1) a proposal for the use of uncommitted SBC III funds, as well as for the use of any SBC III funds that might become uncommitted in the future, and (2) a proposed plan to fund \$10 million in annual CHP Performance Program costs from 2012 through 2016.

On March 30, 2012, NYSERDA submitted the following in response to the T&MD Order:

- 4) Petition for Approval of CHP Performance Program Funding Plan: The T&MD Order directed NYSERDA to file a proposed plan to fund \$10 million in annual CHP Performance Program costs from 2012 through 2016 (\$50 million in program funding, or \$58.6 million in total funding) without necessitating an increase in ratepayer collections. The T&MD Order required NYSERDA to identify the source(s) of the funds to be used for the CHP Performance Program, identify the programs affected by the funding reallocation, explain the expected impact of the shift, if any, on the achievement of Statewide energy efficiency goals, and identify programmatic criteria that will be used to select CHP projects for funding.

NYSERDA's *Recommended Proposal* includes a \$30.6 million transfer of EEPS-2 program funds (\$35.9 million in total) to T&MD for the CHP Performance Program, with the balance coming from uncommitted EEPS-1 funds. Pursuant to the Order and guidance provided by DPS Staff, NYSERDA has included an *Alternative Option* that would fund the CHP Performance Program entirely through a transfer of EEPS-2 funds to T&MD. The rationale for these alternatives is addressed in the Petition, and in the Petition for Allocation of Uncommitted EEPS Funds to the CHP Performance and Empower Programs (item 3 above).

- 5) Petition for Allocation of Uncommitted SBC III Funds for Strategic Initiatives. This Petition requests authorization to allocate \$1.7 million of uncommitted SBC III funds to cover the allocable share of the State Cost Recovery Fee for the SBC Program through December 31, 2011, and \$25.8 million of uncommitted SBC III funds toward three priority clean energy initiatives. Those priority initiatives include: (i) a complementary photovoltaic (PV) initiative, focusing on reducing PV balance-of-system costs in New York; (ii) a timely energy-storage effort to leverage funding to attract a \$120-million federal Energy Innovation Hub to New York State to further build New York's energy storage industry and application base; and (iii) an expanded Advanced Buildings Consortium and additional efforts focused on deep energy savings.

II. Related Options in NYSERDA March 2012 Petitions

Table 1 outlines the major elements in each of NYSERDA's Petitions and illustrates both the Recommended Proposal and the Alternative Option that is included in NYSERDA's EEPS-2, CHP Performance Program, and uncommitted EEPS Funding Petitions. Electric and gas savings under the two scenarios are comparable. However the Alternative Option would reduce net funding for the New Construction Program by approximately 10%. For the reasons described in the individual Petitions, this scenario is not recommended by NYSERDA.

Table 1. Related Options in NYSERDA March 2012 Petitions

Petition for Modification of EEPS Budgets and Targets	CHP Performance Program Funding Plan	Petition for Allocation of Uncommitted EEPS Funds to the CHP Performance and Empower Programs																																			
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APPENDIX B. Proposed Workforce Development Program Elements, 2012-2015

NYSERDA's WFD Program components are designed to expand and upgrade the skills of existing energy efficiency workers and help emerging, transitional, and disadvantaged workers get the basic skills and technical training necessary to obtain employment in the energy efficiency sector. For existing and new workers, the goal is to provide technical training and related certifications necessary to meet the skills requirements for a variety of occupations important to the EEPS.

High priority technical areas identified for immediate EEPS workforce support include technologies such as HVAC, lighting and controls and priority sectors including new construction, existing buildings and homes. With the constant introduction and use of new technologies, controls and practices, workforce training initiatives need to be constantly evaluated, updated, and aligned with ever-changing industry standards and needs. Technical training can be delivered through short in-person and on-line workshops, multi-day or week-long training specifically designed for firms implementing EEPS programs, a series of continuous education credits, college credit bearing classes or degree and certificate programs. Basic skills training is needed to help prepare new workers for technical training. Career pathways support that builds on incumbent worker expertise is vital to a sustainable energy efficiency workforce.

Energy Efficiency Technical Training

Heating, Ventilation, and Air-conditioning Training

Demand reduction through reduced air-conditioning load is a significant measure directly affecting EEPS goals. Small commercial and residential HVAC programs require workforce training in heating installation and service practices, with specialty areas of gas heating installation and service training needed to support newly incorporated gas efficiency programs under EEPS. NYSERDA recently hosted an industry stakeholder group with representatives from the Building Performance Institute, National Oil-heat Research Alliance (NORA), North American Technician Excellence (NATE) and others to discuss interest in developing new standards for heating technicians that incorporate whole-house knowledge and quality installation standards developed by the Air Conditioning Contractors of America (ACCA). Installation and service technicians employed by the more than 700 HVAC contractors in New York will likely seek a nationally recognized credential based on new training to be developed in alignment with these standards.

Lighting and Advanced Lighting Controls

Lighting efficiency and the proper design, installation, and operation of advanced lighting controls contribute significantly to reducing electric consumption in all sectors. NYSERDA has partnered with IBEW-NECA to launch advanced lighting control training for journeyman electricians in 14 IBEW training centers across the State. Current EEPS funding will help train and certify 650 journeyman electricians. Full-scale implementation of this training to all IBEW training centers across the State through new EEPS funding will help train and certify an additional 4,350 journeyman electricians in a three-year time period. A stakeholder group of industry, trade, manufacturers, and educational institutions are collaborating in partnership with New York (through NYSERDA) and California to launch a similar training for lighting designers. New curriculum will be developed and delivered for lighting design professionals in areas of advanced lighting controls. Recent revisions to lighting codes and standards create a clear need to develop new training for solid-state lighting and other new and emerging technologies. Training is needed for all levels in the energy efficiency value chain including end-use

customer awareness training; testing, standards, specification, and installation training for contractors and designers; and operations and maintenance training for building operations staff. The high growth opportunities in lighting will require NYSERDA to assess workforce training needs as EEPS programs with lighting components are revised to reflect new lighting trends and developments.

NYSERDA has also partnered with the Lighting Research Center to revise the highly successful *Lighting Pattern Guide* to develop an updated, on-line resource for contractors, builders, and consumers, focusing on high efficiency residential lighting, fixtures, and controls. Workforce training initiatives will leverage new resources, such as the new *Lighting Pattern Guide*, to train hundreds of contractors and builders on LEDs and other efficient lighting technologies.

Building Controls, Operations and Maintenance Training

As evidenced in the EEPS portfolio and targets, the large- and medium-sized commercial, industrial, and multi-family programs attribute significant savings opportunities to the effective operations, control, and maintenance of building systems. NYSERDA has initiated “train-the-trainer” programs for Building Operator Certification training. In this effort, CUNY Building Performance Lab serves the Consolidated Edison Company service territory and NYSERDA administers Statewide training efforts for the remaining areas of the State. Siemens, Johnson Controls, and other energy management system providers have partnered with trade union training center to develop a building control training lab and deliver building control training for stationary operating engineers responsible for operations of large commercial facilities in New York City. With additional EEPS funding, existing curriculum will be rolled out to other training facilities to serve the needs of end-use customers, facilities staff, and engineering practitioners responsible for existing building commissioning and building operations. New curriculum will be developed for contractors, design/build firms, and engineering technical assistance firms participating in utility commercial and industrial programs and NYSERDA’s Existing Facilities Program. These programs can drive significant savings from lighting efficiency upgrades, HVAC, motors, variable frequency drives (VFDs), Energy Management Systems (EMS), and other custom measures – all technologies covered in these training initiatives.

New Construction Programs

New building codes and standards are driving significant savings in new construction. Programs such as the High Performance New Construction Program (NCP) provide customers with technical assistance services and capital cost financial incentives for electric and natural gas energy efficiency improvements in new construction and substantially renovated buildings. Training is needed for technical assistance firms, architect/engineering (A/E) firms, and facility management and operations staff to keep NCP positioned to deliver energy savings for efficiency improvements as the market continues to evolve with new technologies, practices, energy codes, and equipment standards. Additional EEPS funds will integrate energy efficiency curriculum with existing degree track professional programs, and launch internship programs within educational institutions to help place students in direct-hire positions with regional employers serving new construction. Students will learn and apply concepts through participation in design charrettes as part of the new construction team for longer term-projects. This facilitates relationships between students and more than 100 architect and engineering firms through meaningful field experience leading to new hire opportunities.

In another example, the New York ENERGY STAR® Homes (NYESH) Program is an enhanced version of the U.S. EPA ENERGY STAR Qualified New Homes program. In return for constructing homes to the enhanced New York level of requirements, NYSERDA provides technical assistance and financial incentives to one-to-four family and low-rise residential home builders and Home Energy Rating System (HERS) Rater Providers. Whereas GJGNY training funds have supported existing homes (Home

Performance with ENERGY STAR), EEPS funds have been used to support contractor training implemented by the Building Performance Contractor Association (BPCA). New EEPS funds will support training for developers, HERS Raters, and installation contractors to encourage the adoption of energy-efficient construction techniques and the installation of high efficiency HVAC systems. Training will support the whole-house approach to incorporating energy efficiency into the new construction residential market. All training will support the NYESH Program requirements for combustion safety testing, minimum building shell tightness standards, properly sized heating and cooling systems, adequate ventilation and the incorporation of ENERGY STAR appliances and lighting.

Existing Homes Upgrades

The Building Performance Institute is developing new standards for HVAC contractor accreditation, quality assurance verifiers, and has introduced the insulation technician credential in 2011. These standards support the credentialing of home performance contractors and installers supporting NYSERDA's Home Performance with ENERGY STAR (HPwES) Program, and also support the need for quality installation of measures rebated through utility programs.²¹ Whereas GJGNY training funds support tuition assistance and on-the-job training for home performance contractors, EEPS funds will be used to develop and deliver new curriculum in alignment with new BPI standards. Direct field experience will also be supported through internships coordinated through educational institutions with regional contractors.

On-the-Job Training and Hands-On Experience

An increasing number of employers in the professional services sector are requesting that education and training institutions to offer more "hands-on" practical experience, work-study opportunities, internship programs, in-house training, and other forms of on-the-job (OJT) training. These types of programs help transition workers from the classroom to the job. Hands-on or on-the-job experience is particularly important for individuals who have not had relevant work experience or whom have experienced a period of unemployment. In-house training, work-study, and internships are needed for incumbent workers requiring enhanced skill development. NYSERDA's efforts will seek to enhance the skills of existing workers while also minimizing the risks to employers associated with hiring new employees that have some level of technical training but insufficient experience to perform the necessary work without additional training and mentoring.

The key occupations in this area include: engineers, architects, energy auditors, HVAC and building controls technicians, air-sealing technicians and crew chiefs. New programs will be developed to expand the hands-on components of existing classroom training initiatives. New OJT initiatives will support EEPS contractors that seek to hire new employees and partner them with training organizations that offer internships that can be combined with class-room training. While GJGNY offers on-the-job support for residential, multifamily and small business contractors working in existing building, EEPS support will focus on new construction in all sectors, large existing commercial and industrial and other areas not currently supported under GJGNY. Concurrently, SBC funds will support on-the-job training for renewable energy and advanced technologies.

²¹ The HPwES Program is designed to reduce the energy use in the State's existing one-to-four family housing stock and to capture heating fuel and electricity-related savings. Energy efficiency improvements through this Program include building shell measures, high-efficiency heating and cooling measures, ENERGY STAR® appliances and lighting, making achieved natural gas and electric savings extensive and long-lasting.

To date, the relatively new on-the-job training support under GJGNY has helped approximately 15 contractors hire approximately 50 new workers. It is anticipated that approximately 25-30 contractors can be helped annually with EEPS funding for on-the-job initiatives, possibly impacting 5-15 workers per firm depending on the demand for energy efficiency services. Hands-on training and internships could be delivered to another 800 trainees annually.

Career Pathways

A Career Pathways model provides “stackable” credentials to unemployed or otherwise disadvantaged individuals to put them on a track toward job readiness. NYSERDA’s Career Pathway follows this model and was developed with EEPS funding, following the successful models developed by NYSDOL. Programs will target individuals transitioning to work. An increasing number of job-seekers are turning to the energy efficiency field for entry-level work, either as first-time employment or as workers-in-transition. To prepare the State’s workforce for careers in the energy sector, it is important to offer programs that help to bridge the gap between training and employment. EEPS funding will provide assistance for program development and can offset participant costs through tuition assistance. Tuition assistance was previously funded under SBC and ARRA. GJGNY funds will be available for training related to GJGNY (again, limited to retrofit work in homes, multifamily and small businesses). It is anticipated that 800 trainees can be supported annually.

There are some very successful entry-level opportunities for inner-city youth between the ages of 16-24 that are in alignment with EEPS program offerings including credentialed air-sealing and insulation installers in residential homes and small businesses. NYSERDA is working with the NYSDOL to establish a plan to support training partnerships with eligible energy efficiency training providers targeting at-risk youth in New York. Governor Andrew M. Cuomo signed the NY Youth Works Program into law on December 9, 2011 to encourage businesses to hire unemployed disadvantaged youth.

NYSERDA will work closely with NYSDOL and other State agencies to address disadvantaged individuals, those who face barriers to employment, and may include, but are not limited to, those who have been unemployed for a long period of time, have been formerly incarcerated or do not have a high school degree. In regions where NYSDOL tuition assistance is not available, EEPS funds will be implemented through training partners with a proven track record under the first round of EEPS, to deliver career counseling, OSHA and National Work Readiness credentials, and entry level certifications in energy efficiency like the BPI Basic Air Sealing and Insulation (BASI) course, vocational training in construction or HVAC, or a pre-apprenticeship program.

APPENDIX C. NYSERDA Workforce Training Partners by Region

Albany-Capital Region

- Altamont Program- Albany
- Capital Region BOCES
- Hudson Valley Community College
- Northeast Parent and Child Society, Inc.
- Northwest Energy Efficiency Council
- RPI Lighting Research Center

Buffalo-Erie

- Erie 1 BOCES
- Erie Community College
- Outsource Center

New York City (5 Burroughs)

- Association of Energy Engineers (AEE)
- Association for Energy Affordability (AEA)
- Building Commissioning Association (BCA)
- CEC Stuyvesant Cove (Solar One)
- Consortium for Worker Education
- CUNY Building Performance Laboratory
- CUNY Institute for Urban Systems (CIUS)
- Fortune Society
- Green Light New York
- IUOE Local 94 Training Center
- Karpman Consulting
- Mason Tenders Training Fund
- Northern Manhattan Improvement Corporation
- Osborne Association
- Research Foundation of SUNY Stony Brook
- Stony Brook University – Manhattan
- Urban Green Council

Finger Lakes/Rochester/Syracuse

- Altamont Program – Utica
- Madison-Oneida BOCES
- Northwest Energy Efficiency Council
- SUNY Morrisville RF
- Syracuse University SSIC
- Wayne-Finger Lakes BOCES
- Workforce Development Institute

Hudson Valley/Southern Tier

- Alfred State College
- Sullivan County BOCES
- Tompkins County CC
- Ulster BOCES

Statewide Programs

- Building Performance Contractors Association
- Green University Home Builders
- Home Energy Team
- IBEW-JATC
- NYS Builders Association
- Stargate International
- Urban Green Council
- Workforce Development Institute