Electric Power Transmission and Distribution (EPTD)

Smart Grid Program

Program Opportunity Notice (PON) 1913

up to $16.5 Million Available for Three Rounds

Proposals Due:	**September 1, 2010 by 5:00 PM Eastern Time *, Round 1** **March 10, 2011 by 5:00 PM Eastern Time *, Round 2** **August 4, 2011 by 5:00 PM Eastern Time *, Round 3**

All, or none, of the available funds could be awarded in either round

The New York State Energy Research and Development Authority (NYSERDA) announces the availability of up to $16.5 million in funds to support projects that improve the reliability, efficiency, security, and overall performance of the electric power delivery system in New York State. Projects must demonstrate significant statewide public benefit and quantify all energy, environmental and economic impacts. Technology demonstrations and engineering studies are eligible for funding under this solicitation. The primary objective of the program is to promote the development of a smart grid that accommodates a diverse supply of generation resources, enhances overall grid performance and enables customers to reduce costs, energy consumption, and environmental impacts.

Examples of preferred technologies include, but are not limited to, the following:

Advanced Metering / Controls
Distribution Automation / Management
Demand Response
Energy Storage
Renewable Energy Integration
Advanced System Modeling / Applications

NYSERDA anticipates making multiple awards in the following two (2) categories:

Technology Category	Maximum Award	Cost Share	Available Funding
Category A: Demonstration Projects	**$2,000,000**	**50%**	**$15,500,000**
Category B: Engineering Studies	**$250,000**	**30%**	**$1,000,000**

Proposal Submission: Proposers must submit one (1) paper copy of the proposal with a completed and signed Proposal Checklist attached to the front, which **must** contain an original signature. One (1) electronic copy of the proposal must also be submitted on a standard compact disk (CD). This electronic document (.pdf format only) must be an exact scanned image of the final paper copy proposal and include all relevant forms and signatures. Proposals must be clearly labeled and submitted to: **Roseanne Viscusi, PON 1913, NYS Energy Research and Development Authority, 17 Columbia Circle, Albany, NY 12203-6399**

Programmatic questions should be directed to John Love, ext: 3317 (jfl@nyserda.org), and Michael Razanousky, ext: 3245 (mpr@nyserda.org). Contractual questions should be directed to Nancy Marucci, (518) 862-1090 ext: 3335 (nsm@nyserda.org)

No communication intended to influence this procurement is permitted except by contacting Michael Razanousky, ext: 3245 (mpr@nyserda.org). Contacting anyone other than this Designated Contact (either directly by the proposer or indirectly through a lobbyist or other person acting on the proposer's behalf) in an attempt to influence the procurement: (1) may result in a proposer being deemed a non-responsible offerer, and (2) may result in the proposer not being awarded a contract.

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Electric Power Transmission and Distribution Smart Grid Program Objectives & Requirements

This EPTD smart grid program solicitation is offered for technology areas including, but not limited to, energy storage, distribution automation and management, renewable energy integration, advanced metering and controls, demand reduction and advanced system modeling and applications. Activities include demonstration projects and engineering studies that ensure grid reliability, efficiency, power quality, safety, and security as the delivery network accommodates low-carbon technologies such as renewable power generation, plug-in hybrid electric vehicles, and efficient combined heat and power distributed generation systems.

This program will coordinate both System Benefits Charge (SBCIII) and Regional Greenhouse Gas Initiative (RGGI) funding sources to optimize public investment in research and development in the electric power transmission and distribution systems. SBCIII funds are planned on being utilized for smart grid projects that will address reliability, security and performance, while RGGI funds will focus on smart grid demonstration projects that yield efficiency improvements and/or renewable integration with greenhouse gas reductions. The EPTD smart grid program has been allocated up to $15 million in RGGI and up to $1.5 million in SBC III funding to support transmission and distribution projects. Funding is limited to $15.5 million for demonstration projects and $1 million for engineering studies.

Proposals will be evaluated in each category and scored on criteria listed in this solicitation. All of the proposals will be reviewed by a technical evaluation panel (TEP) consisting of both internal NYSERDA staff and outside technical experts. All proposals will be evaluated according to the quality and level of detail provided and must include substantive detail for all evaluation criteria items, included herein, to be eligible for funding.

Demonstration Project (Category A) Requirements

NYSERDA's share of funding for any project in this category will be limited to a maximum of **$2,000,000** with a proposer cost share **at or above 50% of project cost**. Overall funding for this category will be limited up to **$15,500,000**. Demonstration projects are solicited that promote smart grid technologies, components and/or systems. Projects both within and outside of the six (Consolidated Edison, Orange and Rockland, New York State Electric and Gas, Rochester Gas and Electric, Central Hudson, and National Grid) regulated electric service territories are eligible for funding under this solicitation. Proposers must clearly identify whether the demonstration project will support either transmission or local distribution operations. **All projects must demonstrate broad public benefit and quantify the reduction of greenhouse gas emissions.**

Engineering Study (Category B) Requirements

NYSERDA's share of funding for any project in this category will be limited to a maximum of **$250,000** with a proposer cost share **at or above 30%of project cost**. Overall funding for this category will be limited up to **$1,000,000**. Engineering studies are solicited that provide the necessary preliminary information in support of potential Category A demonstration projects**.** Category B funds are intended to support costs such as preliminary site assessment, utility interconnection, system applications, etc, associated with larger-scale demonstration projects. The proposing organization need not reside in New York State, however, the engineering study must only evaluate potential sites consistent with the requirements for Category A demonstration projects.

Electric Power Transmission and Distribution Smart Grid Program Background

New York State's Systems Benefits Charge (SBC) program was initiated in 1998 with the goal of providing programs to encourage energy efficiency, a cleaner environment and reducing energy costs for New Yorkers. The Public Service Commission (PSC) named NYSERDA as statewide administrator of the SBC funds. This program established an initial SBC term of three years through June 30, 2001. In January 2001, the PSC extended the SBC program (SBC II) for an additional five years through June 30, 2006. The PSC increased the SBC program's annual funding level from approximately $78 million to $150 million. In December 2005, the PSC continued the SBC (SBCIII) program through June 30, 2011 and increased the funding level to $175 million per year. NYSERDA's five-year operating plan for SBC III defined goals for improving NYS energy system reliability and security by increasing energy efficiency, reducing energy demand, supporting innovative transmission and distribution technologies, reducing energy costs, reducing the environmental and health impacts of energy used, encouraging the development of support services for renewable energy resources, creating economic development by supporting emerging energy technologies, fostering competition, improving productivity, and growing New York's energy businesses.

NYSERDA's Research and Development (R&D) programs received approximately $182 million over the five year life of the SBCIII program. These R&D programs are designed to develop and facilitate deployment of new technologies for market-ready applications and to provide information on technology to end-users and environmental regulators for use in decision making. The programs also focus on field testing and demonstrating new technologies, evaluating performance of technologies, disseminating information on their correct implementation, and developing strategies to promote widespread private sector involvement in energy and environmental R&D.

The SBC III program allocated $10 million for electric power transmission and distribution projects that clearly demonstrate broad public benefit. This program funded projects that provided improvements to power reliability, quality, security, and the cost of energy and energy delivery. Also, it supported research that is not utility specific and has broad statewide energy efficiency and reliability benefits. To ensure that its programmatic objectives are satisfied, NYSERDA coordinated efforts between it the New York State Independent System Operator (NYISO) and the New York State Reliability Council (NYSRC) to implement projects that provided significant statewide benefits for electric ratepayers.

Two solicitations were issued under the program, PON 1102 in 2007 and PON 1208 in 2008, resulting in the portfolio of projects listed in Table 1. The program has supported more than thirty projects that have made advancements in establishing uniform statewide diagnostics to assess system reliability, integrating advanced communication, control, and monitoring technologies, deploying remote sensors for continuous monitoring of infrastructure, real-time monitoring of real and reactive power and facilitating the delivery of electricity from renewable generation resources such as wind, hydropower, and geothermal energy. In addition, the program objectives adhere to the Federal Energy Regulatory Commission (FERC) requirements for necessary smart grid functions. In the energy storage category, the program supported technologies in flow batteries, flywheels, stationary batteries and compressed air energy storage systems. In the wide area situational awareness category, projects included the installation of phasor measurement units, reactive power measurement and correction and applications that aid system operations. For the distribution automation category, a smart grid pilot project that will demonstrate an advanced distribution management system was funded. In the demand response category, the program supported innovative demand response solutions for commercial and industrial facilities. Finally, the program supported several research studies to evaluate new technologies, design methodologies, policies and other barriers to implementation of a New York State smart grid.

more information is available at: http://www.nyserda.org/publications/sbcOperatingPlan.pdf

Electric Power Transmission and Distribution Smart Grid Program Projects

Company	Project	Project Type	NYSERDA $	Total Cost $
Premium Power	Zn-Br Flow Battery Demonstration	Demonstration	231,688	463,376
NYPA	Na-S Stationary Battery Demonstration	Demonstration	1,000,000	4,700,000
NY Presbyterian Hospital	Ground Fault Protector Demonstration	Demonstration	110,000	220,000
EPRI	Real-Time Applications of Phasor Measurement Units	Demonstration	744,120	1,495,302
EPRI	Fast Fault Screening Tool for Real-Time Transient Stability Assessment	Demonstration	250,000	500,000
Orange & Rockland	Smart Grid Pilot Project	Demonstration	1,000,000	4,422,000
Consolidated Edison	Super Conductor Demonstration	Demonstration	1,000,000	37,500,000
Innoventive Power	Use of Demand Response to Support NYS Transmission and Distribution Circuits	Demonstration	999,665	2,451,934
NYSEG	Compressed Air Energy Storage Study	Engineering Study	200,000	373,923
Alcoa	NYISO Demand Response Capability Assessment	Engineering Study	165,000	215,000
Clarkson University	Design Methodology for Electric Power Distribution Systems	Engineering Study	190,079	258,209
General Electric	Analysis of the Impact of Proposed Greenhouse Gas Policies on the NY Power Grid	Research Study	200,000	350,250
Pace University	Identification and Development of More Effective Approaches for Engaging Distribution Utilities in the Deployment of DG as T&D Resources	Research Study	148,650	203,003
NETSS	Voltage Dispatch and Pricing Support of Efficient Real Power Dispatch	Research Study	150,000	150,000
JWD Consulting	Installing Flexible Alternating Current Transmission System Devices on the Electric Transmission System Grid	Research Study	182,500	351,000
Columbia University	Micro-grids: Benefits of Small Scale Electricity Networks in NYS	Research Study	134,958	179,944
Beacon Power	Interconnection of a 20 MW Flywheel Regulation Plant to a High Voltage Grid	Demonstration	500,000	4,206,000
NYSEG	Compressed Air Energy Storage Demonstration	Demonstration	1,000,000	125,000,000
Brookfield Power	Dispatchable Green Energy Integration with Intermittent Wind Resources	Demonstration	1,000,000	2,975,725
Central Hudson Gas & Electric	Utilization of Micro-grids for Reliability Improvement and System Reinforcement	Demonstration	371,000	800,000
Clarkson University	Surface-Textured High Voltage Insulators with Super Hydrophobicity	Product Development	200,000	400,401
EPRI	Conceptual Design and Assessment for a Green Urban Network	Engineering Study	194,280	259,280
6-Nines Power	Public Ownership of Energy Storage Systems in NYS	Research Study	76,500	149,365
Power Factor Correction	Local Distribution System Power Factor Correction	Demonstration	200,000	240,950
SMRT Line	Commercial and Regulatory Models for Non-Utility Transmission Infrastructure	Research Study	200,000	430,000
NYISO	New York State Phasor Measurement Network	Demonstration	400,000	800,000
V&R Energy Systems	Prevention of Occurrence of Major Catastrophic Events: Demonstration for Electrical System	Demonstration	300,000	1,250,000
EPRI	Transmission Grid Operation Risk Assessment using Advanced Sensor Technologies	Engineering Study	199,400	349,400
EPRI	Energy Assessment of T&D Losses	Engineering Study	187,500	250,062

Table 1: Summary of Previous Electric Power Transmission and Distribution Solicitation Awards (PON 1102 & PON 1208)

Regional Greenhouse Gas Initiative Program Objectives

In 2009, New York, and its nine partner states, pioneered the nation's first market-based, mandatory cap-and-trade program by establishing the Regional Greenhouse Gas Initiative (RGGI). This RGGI program is serving as a national model for mandatory greenhouse gas cap and trade regulations. New York is establishing an important precedent, through its RGGI operating plan, to demonstrate how auction proceeds can be invested to stimulate the economy and reduce greenhouse gases. This plan offers resources for reducing emissions which contribute to climate change across the economy. It will invest in the technologies that are needed to achieve emission reductions consistent with the science based goal of stabilizing atmospheric greenhouse gas concentrations at a level adequate to prevent catastrophic consequences due to climate change.

The RGGI program demonstrates how New York can lead the nation in developing and implementing effective and comprehensive greenhouse gas programs. Programs include; a fossil fuel efficiency program that will support the replacement of old, inefficient systems with premium efficiency equipment and reduce the resulting greenhouse gases coming from our homes and businesses; an electric power system improvement program that promotes more electricity from clean, renewable resources that will reduce the climate change impact of the current electric system; a transportation efficiency improvement program that will create new strategies to reduce the amount of miles traveled by cars and introduce new technologies to improve the energy efficient operation of cars, trucks, and trains; a workforce training program to retrain the state's workforce that will expand the ability of New Yorkers to take advantage of job creation opportunities provided by these programs; a program to provide schools with learning opportunities with respect to climate change and its impact on our environment; and a climate smart communities program to aid local governments across the state to initiate and implement greenhouse gas reduction strategies.

RGGI auction proceeds will not be used to replace existing programs or program goals, such as the System Benefits Charge, Renewable Portfolio Standard, Weatherization Assistance Program, Energy Efficiency Portfolio Standard, and various transportation programs. Rather, these programs are designed to create synergies with existing efficiency and clean energy programs and encourage redefinition of program goals in the context of a more comprehensive climate change strategy. The goals of increased energy efficiency, increased renewable energy installation, reduced pollution, and low income weatherization will be enhanced by these complementary resources.

The RGGI program has allocated up to $15 million for three years for the EPTD smart grid program, see Table 2. A major objective of this program is to help reduce greenhouse gas emissions from the electric power sector in New York. It will support a portfolio of diverse projects relating to electric power generation, transmission and distribution systems that reduce greenhouse gas emissions. Implementation of an integrated strategy enabling smart grid functionality will increase penetration of renewable resources and demand management technologies into the electric system. Maintaining a diverse portfolio of efficient generation resources provides a hedge against the rising cost and volatility of any single fuel. A strategic benefit is also realized by not being overly dependent on a single resource for maintaining electric system reliability.

Eligible projects may include the integration of distribution network smart grid technologies that have the potential to provide benefits for utilities and customers. Carbon reductions and energy cost savings are realized through changes in consumer behavior that result from exposure to real-time price signals through the use of advanced meters. Improved system reliability is achieved with the use of improved sensors and controls on the utility distribution network. Strategically deployed micro-grids can improve system reliability by providing power to critical isolated networks throughout the state. Micro-grids can be outfitted with efficient distributed generation systems that satisfy the electric and thermal needs of end-use customers within isolated networks. Large-scale energy storage systems can be integrated with commercial wind farms to stabilize the intermittent characteristic of these renewable resources. Small-scale storage systems may also be used to improve the performance of electric distribution circuits. Also, approximately ten percent of the electric energy produced in New York is lost throughout the transmission and distribution systems. Superconducting cables and components have the potential to significantly reduce overall system

losses while simultaneously increasing asset utilization in networked distribution circuits. The EPTD smart grid program will focus on demonstration projects that can be replicated throughout the state and have the potential to yield significant greenhouse gas reductions.

Table 2 describes the RGGI funding allocation for smart grid projects selected under the demonstration category. All projects awarded under this solicitation will be contracted in accordance with the fund allocation schedule. Three proposal due dates have been established to track the availability of RGGI funds.

Fiscal year	2010	2011	2012	Total
EPTD Smart Grid Program Funding	$5,000,000	$7,500,000	$2,500,000	$15,000,000

Table 2: Summary of EPTD Smart Grid Program RGGI Funding Allocation

more information is available at: http://www.nyserda.org/publications/RGGIOperatingPlan2010.pdf

New York State Smart Grid Consortium Objectives

The New York State Smart Grid Consortium (NYSSGC), consisting of New York State (NYS) utilities, the NYISO, NYS agencies and authorities, universities, and industry representatives, was initiated in 2009 to provide a forum where stakeholders could establish priorities for the research, development and demonstration of a NYS smart grid. The primary objective of the NYSSGC is to coordinate the collective efforts of key energy stakeholders and implement an electric power supply and delivery system that is efficient, secure, and reliable. The NYSSGC includes all facets of the energy sector including generators, utilities, end-use consumers, government, industry, and academia and works collaboratively to ensure the long-term deployment of a smart grid that accommodates a diverse supply of generation resources, enhances overall grid performance and enables customers to reduce costs, energy consumption, and environmental impacts.

The combined strength of the NYSSGC strategically positions it at the focal point of the energy sector to effectively harness a unique set of academic, industry, and commercial resources throughout New York State. This collaborative format represents an innovative approach that has the potential to yield better collective results than would otherwise be achieved by individual company efforts. The consortium provides a key resource for state entities, such as NYSERDA and NYSTAR, for targeting critical statewide smart grid objectives. NYSSGC members pay membership dues which support the administrative expenses and departmental initiatives of the consortium. The EPTD smart grid program will coordinate with the NYSSGC to identify critical technologies that have not been addressed through ARRA funded projects.

The NYSSGC will also play a critical role in fostering the development of a smart grid technology nexus that positions NYS to become a national “hub” and leader in this area. The structure and framework of the NYSSGC are intended to focus the R&D initiatives of government, industry, and universities and set the stage for accelerating the pace of innovation. It will nurture R&D activities on advanced products and applications that are commercially-focused and targeted to address real-world problems.

more information is available at: www.nyssmartgrid.com

New York State Smart Grid Benefits

Smart grid means many things to many people today. It is not a "one size fits all" technology and must be adapted and configured for each region, state, and power utility. Smart grid is a vision for the electric delivery system of the future. The smart grid envisions an entirely transformed electrical infrastructure. It will embody a network of devices that are vast, interconnected, automated, and interactive.

Investment into smart grid infrastructure has the potential to produce substantial benefits for New York State consumers and businesses at many times the cost of those investments. The state will also benefit by being able to achieve energy goals which include increased renewable sources of energy, reduced carbon production from the electric power sector at lower cost; and will enjoy improved power system reliability and greater security of energy. KEMA, a power industry consultant, recently performed a smart grid benefits analysis that shows that an investment of $4.0 billion by NY utilities over the next decade will result in annual savings and avoided costs to state ratepayers of $2.6 billion for at least 5-10 years, while creating over 10,000 jobs. The analysis of costs and benefits yielded a benefit to cost ratio of approximately 2.31, indicating these are sound investments.

Smart grid benefits identified in the KEMA analysis include enabling more cost effective use of both renewable energy and storage; enabling electric vehicles to be used as a means of storing electricity; providing options for consumers to control how they use electricity; reducing energy prices, especially at peak, as a result of peak shaving from demand response programs and dynamic and time of use pricing programs; reducing or eliminating transmission congestion by using storage to match renewable energy delivery to demand; deferring distribution capital investment by the use of distributed energy resources; improving utility operations through reduced losses and improved productivity; reducing the rate and severity of unplanned outages by utilizing advanced conditioned based monitoring equipment; and advanced metering infrastructure that can provide real time measurement of voltages and power factor and improve system operations.

National Smart Grid Initiatives

In Feb, 2009, Congress passed the American Recovery and Reinvestment Act (ARRA) of 2009. This recovery act has three immediate goals create new jobs, spur economic activity and invest in long-term growth. The act plans investment in the domestic renewable energy industry and the weatherizing of seventy five percent of federal buildings as well as more than one million private homes around the country. While many of the recovery act projects are focused more immediately on jumpstarting the economy, others, especially those involving infrastructure improvements, such as the smart grid, are expected to contribute to economic growth for many years.

The U.S. Department of Energy (DOE) recently announced New York State smart grid stimulus funds awards. These projects, listed in Table 3, include the statewide installation of phasor measurement units and capacitors awarded to the New York Independent System Operator (NYISO), several distribution automation projects with Consolidated Edison, a smart grid pilot project with Long Island Power Authority (LIPA), a dynamic thermal rating project with New York Power Authority (NYPA) and a 150 MW below ground compressed air energy storage system with Energy East. DOE has established a smart grid clearinghouse to track the benefits of the ARRA funded smart grid investment and demonstration projects. The EPTD smart grid program supported initial work with these projects which aided in their successful selection for funding by DOE. The EPTD smart grid program continues to work with DOE to support New York State's involvement in the national smart grid initiative.

Company	DOE Category	Project	Stimulus $	Total Cost $
Consolidated Edison	Investment Grant	Distribution System Automation	136,170,899	272,341,798
NYISO	Investment Grant	PMU and Capacitors	37,382,908	75,710,735
LIPA	Demonstration	Smart Grid Pilot	12,496,047	25,293,735
NYPA	Demonstration	Dynamic Thermal Rating	720,000	1,440,000
Consolidated Edison	Demonstration	Secure Interoperable Smart Grid Pilot	45,388,291	92,388,217
Energy East	Demonstration	150 MW Compressed Air Energy Storage	29,561,142	125,006,103

Table 3: Summary of New York State Smart Grid ARRA Awards

Characteristics of a Smart Grid as described by Title XIII of the Energy Independence and Security Act of 2007 include: increased use of digital information and controls technology to improve reliability, security, and efficiency of the electric grid; dynamic optimization of grid operations and resources, with full cyber-security; deployment and integration of distributed resources and generation, including renewable resources; development and incorporation of demand response, demand-side resources, and energy efficiency resources; deployment of real-time, automated, interactive technologies for metering, communications concerning grid operations and status, and distribution automation; deployment and integration of advanced electricity storage and peak-shaving technologies, including plug-in electric and hybrid electric vehicles, and thermal storage air conditioning; provision to consumers of timely information and control options; development of standards for communication and interoperability of appliances and equipment connected to the electric grid, including the infrastructure serving the grid; and identification and lowering of unreasonable or unnecessary barriers to adoption of smart grid technologies, practices, and services. Also, the Secretary of Energy has identified several areas that constitute critical barriers to achieving national energy and climate goals while proving the most resistant to solutions by usual enterprise R&D. To overcome these barriers, DOE plans to launch eight "Energy Innovation Hubs", with these hubs focusing on each area. They include fuels from sunlight, nuclear fuel management, energy efficient building systems, batteries and energy storage, solar electricity, carbon capture and storage, modeling and simulation for nuclear reactors, and electrical smart grid systems. The EPTD smart grid program looks to aid New York in being selected as both an energy storage and a smart grid hub.

New York State Initiatives

The New York State Energy Plan (SEP), developed in 2009, details key elements on how much energy will be provided by renewable resources; how many vehicles will be replaced by electric / hybrid forms; and, what the electric load growth will be in the future. It sets the time frame for realization of the smart grid vision by 2020 as a period during which to have made sufficient deployment and to have realized significant benefits of future smart grid technologies. Key policy objectives of the SEP are to address the affordability and reliability of energy, improving energy independence and fuel diversity, supporting greenhouse gas emission reductions in energy systems and reducing health and environmental risks associated with energy production. NYSERDA's key research and development objectives to develop a clean energy economy, improve end use efficiency, improve renewable energy usage, increase economic development and increase public education are designed to accomplish the energy plan objectives. Also, in 2009, the governor issued an executive order for the 80 x 50 initiative which aims to reduce greenhouse gases emissions to 80% of 1990 levels, by 2050. This order sets the stage for long term greenhouse gas reductions and provides the framework for using both SBC and RGGI funds to realize this goal. The EPTD smart grid program will aid in achieving the SEP and the 80 x 50 planned objectives by supporting projects focusing on reliability, fuel diversity, emission reductions, energy efficiency, renewable energy, economic development and technology transfer.

Project Categories – Two categories of projects will be considered for funding.

A. Eligibility Requirements

Category A: Demonstration Projects

NYSERDA's share of funding for any project in this category will be limited to a maximum of **$2,000,000** with a proposer cost share **at or above 50% of project cost**. Demonstration projects are solicited that promote smart grid technologies, components and/or systems. Projects both within and outside of the six (Consolidated Edison, Orange and Rockland, New York State Electric and Gas, Rochester Gas and Electric, Central Hudson, and National Grid) regulated electric service territories are eligible for funding under this solicitation. Proposers must clearly identify whether the demonstration project will support either transmission or local distribution operations. **All projects must demonstrate broad public benefit and quantify the reduction of greenhouse gas emissions.**

Category B: Engineering Studies

NYSERDA's share of funding for any project in this category will be limited to a maximum of **$250,000** with a proposer cost share **at or above 30% of project cost**. Engineering studies are solicited that provide the necessary preliminary information in support of potential Category A demonstration projects**.** Category B funds are intended to support costs such as preliminary site assessment, utility interconnection, system applications, etc, associated with larger-scale demonstration projects. The proposing organization need not reside in New York State, however, the engineering study must only evaluate potential sites consistent with Category A requirements.

B. Funding Requirements

Cost sharing can be from the proposer, other team members, and other government or private sources. Contributions of direct labor (for which the laborer is paid as an employee) and purchased materials may be considered "cash" contributions. Unpaid labor, indirect labor, or other general overhead may be considered "in-kind" contributions. NYSERDA will not pay for efforts which have already been undertaken. The proposer or proposing team cannot claim as cost-share any expenses that have already been incurred. Show the cost-sharing plan in the following format:

	Cash	**In-Kind Contribution**	**Total**
NYSERDA	$	$	$
Proposer	$	$	$
Others (list individually)	$	$	$
Total	$	$	$

Attach supporting documentation to support indirect cost rate(s) included in your proposal as follows:

1. Describe the basis for the rates proposed (i.e., based on prior period actual results; based on projections; based on federal government or other independently-approved rates).

2. If rate(s) is approved by an independent organization, such as the federal government, provide a copy of such approval.

3. If rate(s) is based on estimated costs or prior period actual results, include calculations to support proposed rate(s). Calculation should provide enough information for NYSERDA to evaluate and confirm that the rate(s) are consistent with generally accepted accounting principles for indirect costs.

NYSERDA reserves the right to audit any indirect rate presented in the proposal and to make adjustment for such difference. Requests for financial statements or other needed financial information may be made if deemed necessary.

Category A: Demonstration Projects

NYSERDA will contribute up to a maximum of 50% of total project costs within the limits of a total per project cap of $2,000,000. Overall funding for this category will be limited up to $15,500,000. Eligible cost share can include both cash and in-kind contributions. Preference will be given to proposers that provide higher cash contributions towards project costs. External funding partnerships are encouraged to best leverage limited in-state resources. Recoupment may be required for Category A demonstration projects.

Additional programmatic requirements are as follows:

Demonstration projects must be installed within New York State.

Proposals must include a letter of support from all in-state entities responsible for managing, operating, and maintaining the T&D infrastructure impacted by the demonstration project.

A commitment letter from all external funding sources is required for the proposal to be considered responsive. All commitment letters must state whether that organization's funds are fully committed to the proposed project or are awaiting subsequent approval, and must clearly specify the amount of cost share supported by in-kind or cash contributions. Letters of commitment must be written on the organization's letterhead and endorsed by an Officer with signatory authority.

Eligible demonstration projects are those that:

Characterize the performance of pre-commercial/innovative technologies.

Utilize commercially available technologies in support of innovative applications.

Represent the first time a technology will be used/evaluated in New York State.

Proposers are encouraged to develop projects that leverage funding with external (outside of New York State) partners such as the United States Department of Energy (USDOE), the Electric Power Research Institute (EPRI), the Edison Electric Institute (EEI), and other R&D organizations.

Proposals that include effective collaboration with local utilities, independent transmission owners and the NYISO are preferred. Endorsement letters from these entities should be included in the proposal.

A cost/"public benefit" analysis is required for all proposals to justify allocation of funds.

An analysis and quantification of greenhouse gas emissions reduced as a result of employing the technology to be demonstrated.

Proposals are encouraged that improve the reliability/security of mission critical facilities.

T&D technology demonstration projects that facilitate interconnection of renewable resources and distributed energy systems, and support local economic development initiatives are encouraged.

Proposals must clearly define the reasons why a project falls under Category A (Demonstration) rather than Category B (Engineering Studies).

Category B: Engineering Studies

NYSERDA will contribute up to a maximum of 70% of total project costs within the limits of a total per project cap of $250,000. Overall funding for this category will be limited up to $1,000,000. Eligible cost share can include both cash and in-kind contributions. Preference will be given to proposers that provide higher cash contributions towards project costs. External funding partnerships are encouraged to best leverage limited in-state resources. Recoupment will **not** be required for Category B engineering studies.

Additional programmatic requirements are as follows:

Category B funds cannot be used to support expenses incurred prior to proposal submission.

Equipment purchases are not eligible for funding under Category B, except for metering/monitoring devices needed to gather relevant preliminary data. Metering/monitoring expenses should be limited to a small percentage of total project cost.

Engineering studies must be completed within 18 months of NYSERDA award notification.

Proposers are encouraged to conduct engineering studies that leverage funding with external (outside of New York State) partners such as the United States Department of Energy (USDOE), the Electric Power Research Institute (EPRI), the Edison Electric Institute (EEI), and other R&D organizations.

Proposals that include effective collaboration with local utilities, independent transmission owners and the NYISO, are preferred. Endorsement letters from these entities should be included in the proposal.

A cost/"public benefit" analysis is required for all proposals to justify allocation of funds.

An analysis and quantification of greenhouse gas emissions reduced as a result of employing the technology studied.

Engineering studies relating to mission critical facilities are encouraged.

T&D related engineering studies that facilitate interconnection of renewable resources and distributed energy systems, and support local economic development initiatives are encouraged.

Project Scope – Projects selected for funding **must**:

Provide quantifiable energy, environmental, and economic benefits in New York State.

Provide cost-sharing by the proposer or third parties:
In the form of cash or in-kind labor, materials, equipment, facilities, and other resources, subject to reasonable and verifiable valuation. Co-funding may be from the proposer or other private or government sources. NYSERDA's funds cannot be used to reimburse or replace normal expenses of other government organizations.

A preferred **50%** of the total cost of the project for *Category A* projects and a preferred **30%** of the total cost of the project for *Category B*. The quality of the proposer's co-funding is examined during the proposal evaluation process. Cash, labor, and materials are considered superior to other types of co-funding. The level of co-funding will be considered an indicator of the proposer's commitment to the success of the project and the type of co-funding offered should be appropriate for the proposer's financial condition and the product's stage of development (degree of risk).

Project Schedule, Phasing and Teaming – The following guidelines should be considered when developing proposals:

Projects are expected to begin, upon contract execution, which should occur within six months of the proposal due date. The project schedule should not exceed 18 months for Category B, 36 months for Category A.
Teaming arrangements are encouraged, where appropriate, to enhance the likelihood of project success. Teams may include commercial firms, industry associations or research organizations, universities, government agencies, end-users, and other stakeholders. **Include letters of interest or commitment from each identified team member in an appendix to the proposal.**

Other Considerations – In addition, note that:

A proposal may be considered **non-responsive** if it fails to comply with the requirements above, the Proposal Requirements of Section II, or the General Conditions of Section IV.

Prior to an award or contracting with a successful proposer, potential contractors may be required to demonstrate: access to financial resources sufficient to perform the proposed work, technical experience and adequate facilities (or the ability to access them), a good performance record, and the ability to qualify for an award under applicable laws and regulations.

Proposal should be limited to 20 pages or less, plus items in the appendix. Suggested page limits for each section are provided below in parentheses. If you believe proprietary information must be submitted to present an adequate proposal, comply with the instructions in Section IV for submitting proprietary material. **Rigid bindings and other elaborate presentation material should not be used – a staple in the upper left corner is preferred.** Your goal as a proposer should be to concisely present the information needed to fully address the evaluation criteria (see Section III). Proposals that grossly exceed the page limits or fail to follow the format guidelines may be rejected as non-responsive.

Proposers must submit one (1) copy of the completed proposal to the attention of Roseanne Viscusi at the address on the front of this Program Opportunity Notice. A completed and signed Proposal Checklist must be attached as the front cover of your proposal, one of which must contain an original signature. **Late proposals and proposals lacking the appropriate completed and signed Proposal Checklist will be returned.** Faxed or e-mailed copies will not be accepted.

Unnecessary attachments beyond those sufficient to present a complete, comprehensive, and effective response will not influence the evaluation of the proposal. Each page of the proposal should state the name of the proposer, the PON number, and the page number. The proposal must be in the following format and should present the items in the sequence indicated below.

Proposal Checklist – Complete **the specific Proposal Checklist attached as part of this PON, and include it as the front cover of the original and each copy of the proposal.**

Note the following: Indicate whether you accept the standard terms and conditions as contained in the attached Sample Agreement. If you do not accept the standard terms and conditions, provide alternate terms with justification based on the risk and benefit to NYSERDA and New York State.

Be sure the individual signing the Proposal Checklist is authorized to commit the proposer's organization to the proposal as submitted.

Proposal Sections – Sections of your proposal should be as follows:

1. Executive Summary (one to two pages) – Briefly summarize your proposal, emphasizing:

The technology or opportunity being addressed, and its significance to New York State.

Your proposed solution and how it will solve the problem

Your proposed solution and how it will solve the problem or exploit the opportunity.
A list of the project team members and their qualifications to do the work.

Include an estimate of market potential and quantify the energy, environmental, and economic benefits to the extent possible.

2. Problem Statement and Proposed Solution (three to four pages) – Describe:

The technology related problem or opportunity being addressed, and its significance to New York State.

Your proposed solution and how it addresses the problem or opportunity, its technical basis, innovative characteristics, and current stage of research and development.

Alternative solutions, and why your proposed solution is superior.

If this proposal addresses a subsequent phase of a previously funded NYSERDA project, the results of the earlier phase(s) and current project status.

3. Proposed Work Scope and Schedule (three to four pages) – Provide:

Technical or performance goals for proposed product or system.

A list of major tasks to be accomplished and a three- or four-sentence description of each. Typical task titles may include, but are not limited to, the following: project management and reporting, requirements definition, preliminary design, fabrication, testing, final design, and demonstration. (Note: NYSERDA will expect to receive written progress reports and a final report, and have occasional project meetings, as part of the project management task. These activities should be considered when developing your cost estimates.)

The duration of the project and timing of major milestones, such as design reviews, test result reviews, completion of working prototypes, and the start of metrics reporting to NYSERDA, showing progress toward project objectives and goals.

If applicable, a brief description of additional phases, beyond the proposed work, that will be necessary to fully achieve commercialization, and their anticipated duration.

4. Proposer Qualifications (two to four pages, depending on team size) – Identify:

Proposer and any other team members and major subcontractors. Provide a chart showing the relationship between team members. (Note: Subcontracts of $25,000 or more are subject to competitive bid procedures except where the proposal identifies a specific subcontractor as an integral participant in the proposed work; see Sample Agreement).

Project Manager and other key individuals.

Qualifications of all entities named above, including relevant experience and references.

5. Project Benefits (two to three pages) – Outline benefits as follows:

Quantify the following direct benefits to New York State to the extent possible:

Energy benefits - electricity savings, peak demand reduction, or savings in other energy inputs

Environmental benefits - reduced emissions

Economic benefits - capital investment, creation or retention of jobs in New York State, and the creation and use of intellectual property

Identify any other meaningful or tangible benefits.

6. Budget – A Contract Pricing Proposal Form (CPPF), with associated instructions, is provided as Attachment C to this PON. **Each proposal must include a completed CPPF and also a cost-sharing table identifying the allocation of funding by task.** Use the following format (expand table as needed):

Cost-Sharing: It is preferred that projects contain non-NYSERDA funding of at least 50% of the total cost of the project for Category A, projects and 30% preferred for Category B. Cost sharing can be from the proposer, other team members, and other government or private sources. Contributions of direct labor (for which the laborer is paid as an employee) and purchased materials may be considered "cash" contributions. Unpaid labor, indirect labor, or other general overhead may be considered "in-kind" contributions. NYSERDA will not pay for efforts which have already been complete. The proposer or proposing team cannot claim as cost-share any expenses that have already been incurred.

Attach supporting documentation to explain indirect cost (overhead) rates included in your proposal as follows:

Describe the basis for the rates proposed (i.e., based on prior period actual results; based on projections; based on federal government or other independently-approved rates). If rates are approved by an independent organization,

such as the federal government, provide a copy of such approval. If rates are based on estimated costs or prior period actual results, include calculations to support proposed rates. Calculation should provide enough information for NYSERDA to evaluate and confirm that the rates are consistent with generally accepted accounting principles for indirect costs.

NYSERDA reserves the right to audit any indirect rate presented in the proposal and to make adjustment for such difference. Requests for financial statements or other needed financial information may be made if deemed necessary

7. Appendices – Include any resumes, company qualifications, or ancillary information which is deemed necessary to support your proposal. If appropriate, also include:

All proposals must include a **technology overview** that provides a comprehensive description of the overall project objectives. System/process drawings, data tables and figures that effectively supplement the project description are encouraged.

Proposers must prepare a **milestone payment schedule (MPS)** that clearly identifies each task, start date, completion date, and the amount of NYSERDA funds requested upon successful completion of each task. This schedule must also define the specific matching cost share associated with each task. NYSERDA will only accept invoices for completed tasks - funds are not allocated to cover expected/anticipated costs. Proposals that effectively monitor on-going progress and identify scheduled opportunities for NYSERDA to determine if further investment is warranted are preferred.

All proposals must include a detailed **statement of work (SOW)** consistent with the MPS outlined above. The SOW must define all of the objectives and deliverables associated with each task. The SOW will form the basis/structure of the contractual agreement with NYSERDA, and it is recommended that all terminology/language be reviewed by the proposing organization's counsel prior to submission. Prior review will help expedite subsequent contract execution.

A **technology transfer plan (TTP)** must be prepared. This plan shall outline an effective strategy for educating the broader community as to the public benefits resulting from broad application of this technology. NYSERDA will work with its Contractors to address any/all proprietary issues associated with technology demonstration projects. Describe any other actions to promote the new technology, such as the presentation of technical papers, development of case studies and/or information dissemination.

A **cost/public benefit analysis** must be completed that identifies why the demonstration project is worthy of public funds. The analysis should focus on the broader/commercial statewide application of the technology in its justifying arguments.

An **analysis and quantification** of greenhouse gas emissions reduced as a result of employing the technology is required.

A **permitting plan** is required for all demonstration projects. The permitting plan must list all of the requisite federal, state, and local permits and identify expected dates for obtaining these permits. The proposal must include a completed **SEQRA application** in order to be eligible for funding.

Each proposal must include a **monitoring plan** that identifies the specific information/data to be monitored in order to benchmark project success. Demonstration projects should include all of the necessary instrumentation and data archiving capabilities to effectively assess technology performance.

All proposals must identify **team qualifications** and provide resumes for all key project personnel

Describe how the success of the project can be measured or verified, and how and for how long these metrics will be provided to NYSERDA.

Project Timeline: Provide a multi-year timeline (e.g., graph) showing the paths, activities, milestones, resources, timing to take the technology from its current state of development to commercial deployment, and cost sharing in relation to total costs.

Letters of Interest or Commitment – If you are relying on any other organization to do some of the work, provide services or equipment, or share in the non-NYSERDA cost, include a letter from that organization describing their planned participation. Also include letters of interest or commitment from businesses or other organizations critical to the future commercialization, demonstration, or implementation of the project. **Absence of letters of interest or commitment will be interpreted as the proposer not having support from the identified parties**.

Exceptions to the Terms and Conditions – If you do not accept the standard terms and conditions (including the recoupment provisions) as contained in the attached Sample Agreement, provide alternate terms with justification based on the risk and benefit to NYSERDA and New York State.

III. PROPOSAL EVALUATION

Proposals will be reviewed by a Technical Evaluation Panel (TEP) and will be scored and ranked according to the following criteria, **listed in order of importance**. After the proposals are reviewed, NYSERDA will issue a letter to each proposer indicating the proposal evaluation results. Proposers receiving favorable evaluations will be invited to enter into contract negotiations with NYSERDA. The proposer will be required to submit a detailed statement of work, budget, and schedule, and may also be asked to address specific questions or recommendations of the TEP before contract award.

Evaluation Criteria in Order of Importance for Category A & B

Note: Each category will be evaluated separately

1. Proposed Project – How significant are the energy efficiency and environmental improvements? How are best practices and advanced concepts utilized to obtain this efficiency level? Is the proposed project likely to be utilized in other applications? Is the proposed work technically feasible, innovative, and superior to alternatives? Is the work strategy sound in accomplishing New York State smart grid objectives detailed in the front of this solicitation?

2. Project Benefit – Will a significant part of the work on the project take place in New York? How significant are the energy, environmental, and economic benefits to New York State? What are potential greenhouse gas benefits? Are there additional significant benefits? Is proposer willing to provide dissemination of information and technology transfer through hosting of open house showcasing events, seminars, journals and other similar efforts?

3. Proposer(s) – To what degree does the team have relevant and necessary technical and business background and experience? How firm are the commitments and support from essential participants, co-funders, and related businesses and other organizations? Does the team enable or provide total product and service offerings that have potential for wide impact? Is the implementation or technology transfer strategy well-conceived and appropriate for the stage of development?

4. Project Schedule and Cost – Is the overall project schedule and cost justified based on the expected benefits? Relative to the project cost, how significant is the potential deployment opportunity? How appropriate are the proposer's co-funding contributions (sources and amounts) with respect to the degree of risk, potential to benefit from the work, and financial status of the organization?

5. Other Considerations – Proposals will be reviewed to determine if they reflect NYSERDA's overall objectives, including: risk/reward relationships, similar ongoing or completed projects, the general distribution of NYSERDA projects among industries and other organizations, and the distribution of projects within New York State.

Proprietary Information - Careful consideration should be given before confidential information is submitted to NYSERDA as part of your proposal. Review should include whether it is critical for evaluating a proposal, and whether general, non-confidential information, may be adequate for review purposes. The NYS Freedom of Information Law, Public Officers law, Article 6, provides for public access to information NYSERDA possesses. Public Officers Law, Section 87(2)(d) provides for exceptions to disclosure for records or portions thereof that "are trade secrets or are submitted to an agency by a commercial enterprise or derived from information obtained from a commercial enterprise and which if disclosed would cause substantial injury to the competitive position of the subject enterprise." Information submitted to NYSERDA that the proposer wishes to have treated as proprietary, and confidential trade secret information, should be identified and labeled "Confidential" or "Proprietary" on each page at the time of disclosure. This information should include a written request to exempt it from disclosure, including a written statement of the reasons why the information should be exempted. See Public Officers Law, Section 89(5) and the procedures set forth in 21 NYCRR Part 501 www.nyserda.org/about/nyserda.regulations.pdf. However, NYSERDA cannot guarantee the confidentiality of any information submitted.

Omnibus Procurement Act of 1992 - It is the policy of New York State to maximize opportunities for the participation of New York State business enterprises, including minority- and women-owned business enterprises, as bidders, subcontractors, and suppliers on its procurement Agreements.

Information on the availability of New York subcontractors and suppliers is available from:

Empire State Development

Division For Small Business

30 South Pearl Street

Albany, NY 12245

A directory of certified minority- and women-owned business enterprises is available from:

Empire State Development

Minority and Women's Business Development Division

30 South Pearl Street

Albany, NY 12245

State Finance Law sections 139-j and 139-k - NYSERDA is required to comply with State Finance Law sections 139-j and 139-k. These provisions contain procurement lobbying requirements which can be found at http://www.ogs.state.ny.us/aboutogs/regulations/advisoryCouncil/StatutoryReferences.html

The attached Proposal Checklist calls for a signature certifying that the proposer will comply with State Finance Law sections 139-j and 139-k and the Disclosure of Prior Findings of Non-responsibility form includes a disclosure statement regarding whether the proposer has been found non-responsible under section 139-j of the State Finance Law within the previous four years.

Tax Law Section 5-a - NYSERDA is required to comply with the provisions of Tax Law Section 5-a, which requires a prospective contractor, prior to entering an agreement with NYSERDA having a value in excess of $100,000, to certify to the Department of Taxation and Finance (the "Department") whether the contractor, its affiliates, its subcontractors and the affiliates of its subcontractors have registered with the Department to collect New York State and local sales and compensating use taxes. The Department has created a form to allow a prospective contractor to readily make such certification. *See,* ST-220-TD (available at http://www.tax.state.ny.us/pdf/2007/fillin/st/st220td_507_fill_in.pdf). Prior to contracting with NYSERDA, the prospective contractor must also certify to NYSERDA whether it has filed such certification with the Department. The Department has created a second form that must be completed by a prospective contractor prior to contacting and filed with NYSERDA. *See,* ST-220-CA (available at http://www.tax.state.ny.us/pdf/2006/fillin/st/st220ca_606_fill_in.pdf). The Department has developed guidance for contractors which is available at http://www.tax.state.ny.us/pdf/publications/sales/pub223.pdf.

Contract Award - NYSERDA anticipates making one (or multiple, as it applies to solicitation) award under this solicitation. It may award a contract based on initial applications without discussion, or following limited discussion or negotiations pertaining to the Statement of Work. Each offer should be submitted using the most favorable cost and technical terms. NYSERDA may request additional data or material to support applications. NYSERDA will use the Sample Agreement to contract successful proposals. NYSERDA reserves the right to limit any negotiations to exceptions to standard terms and conditions in the Sample Agreement to those specifically identified in the submitted proposal. NYSERDA expects to notify (proposers/applicants) in approximately (10) weeks from the (proposal due date/receipt of an application) whether your (proposal/application) has been selected to receive an award.

Limitation - This solicitation does not commit NYSERDA to award a contract, pay any costs incurred in preparing a proposal, or to procure or contract for services or supplies. NYSERDA reserves the right to accept or reject any or all proposals received, to negotiate with all qualified sources, or to cancel in part or in its entirety the solicitation when it is in NYSERDA's best interest. NYSERDA reserves the right to reject proposals based on the nature and number of any exceptions taken to the standard terms and conditions of the Sample Agreement.

Disclosure Requirement - The proposer shall disclose any indictment for any alleged felony, or any conviction for a felony within the past five years, under the laws of the United States or any state or territory of the United States, and shall describe circumstances for each. When a proposer is an association, partnership, corporation, or other organization, this disclosure requirement includes the organization and its officers, partners, and directors or members of any similarly governing body. If an indictment or conviction should come to the attention of NYSERDA after the award of a contract, NYSERDA may exercise its stop-work right pending further investigation, or terminate the agreement; the contractor may be subject to penalties for violation of any law which may apply in the particular circumstances. Proposers must also

disclose if they have ever been debarred or suspended by any agency of the U.S. Government or the New York State Department of Labor.

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If Recoupment is required, include the following in the General Conditions after "Contract Award:"

Recoupment - For any new product development projects requesting NYSERDA funding over $50,000, NYSERDA will require a royalty based on sales of the new product developed. NYSERDA's standard royalty terms are 1.5% of sales for products produced in New York State (for a period of fifteen years or until the Contractor pays NYSERDA an amount equal to the amount of funds paid by NYSERDA to the Contractor, whichever comes first) and 5% of sales for products produced outside of New York State (for a period of fifteen years or until the Contractor pays NYSERDA an amount equal to three times the amount of funds paid by NYSERDA to the Contractor, whichever comes first).

V. ATTACHMENTS

Attachment A - Proposal Checklist

Attachment B - Disclosure of Prior Findings of Non-Responsibility Form

Attachment C - Contract Pricing Proposal Form

Attachment D - Statement of Work Outline

Attachment E - Sample Agreement