

**Notice of Intent to Issue a Funding Opportunity Announcement
For the
Smart Grid Investment Grant Program**

Introduction

The Department of Energy (DOE) announces its intent to issue a competitive Funding Opportunity Announcement (FOA) to solicit applications for grants for the Smart Grid Investment Grant Program (SGIG). The Smart Grid Investment Grant Program was originally authorized by Section 1306 of the Energy Independence and Security Act of 2007 (EISA; Public Law 110-140) and later modified by the American Recovery and Reinvestment Act of 2009 (Recovery Act; Public Law 111-5). The purpose of the program is to gain the improvements in cost and performance that will come from the deployment of smart grid technology. The program will provide federal assistance to cover up to fifty percent of investments by electric utilities and other entities for projects that promote the goal of deployment, including development of component technologies.

These investments will help implement the necessary digital upgrades to the electric grid enabling it to work more efficiently, as well as making it capable to effectively integrate renewable and energy efficient technologies and demand management practices. In addition to promoting grid modernization, the program will also provide a stimulus to the nation with respect to expanding economic opportunities, creating jobs for American workers, and increasing worker skills.

The Research and Development (R&D) Division within DOE's Office of Electricity Delivery and Energy Reliability (OE) will implement the Smart Grid Investment Grant Program. The program will apply a competitive, merit-based approach for providing funds to organizations for qualifying smart grid investment projects to advance smart grid functions. In addition to providing funds for smart grid projects, DOE will allocate a portion of the funds for projects that deploy Phasor Measurement Unit (PMU) technology within the transmission system infrastructure.

DOE desires to evaluate the cost-effectiveness and other benefits of deployed smart grid technology. Therefore, applicants will be required to collect data that will enable quantitative evaluation of the benefits of the technology. DOE will apply an analytical approach that will be further elucidated within the subsequent formal solicitation for this grant program. Wherever possible, the key variable should be applied using a randomized control trial design. For example, in the case of smart meters the most important data is hour by hour consumption. To determine differences based on pricing mechanisms, the pricing should be assigned randomly (e.g. by lottery); to compare real time usage will require smart meters for both experimental and control groups. Projects should endeavor to include commercial and industrial accounts. This will allow for a "gold standard" evaluation of whether projects achieve their stated goals.

These projects will be funded in accordance with the Recovery Act, which provides guidance and processes for awarding and overseeing funds to effectively manage projects

under the Act. As such, recipients will be required to follow strict requirements for reporting, information collection, budget execution, and risk management. Additionally, applicants and their potential first tier subrecipients should begin planning activities to create or update records of their profiles in Dunn and Bradstreet Universal Numbering System (DUNS), and registering with the Central Contractor Registration (CCR). Applicants not registered in both databases will be precluded from receiving an award. A copy of the applicable Special Provisions is attached to provide greater detail of the requirements for interested applicants.

This Notice of Intent provides information on what types of projects qualify and how they will be evaluated, what entities are eligible to apply, the anticipated levels of federal funding per project, dates for application submission, and other requirements. DOE invites prospective applicants to submit comments that convey concerns or needs for clarification. The comment period, which is discussed in more detail in a later section, will end at 5:00 pm EST on May 6, 2009. After considering the comments, DOE will then issue the Funding Opportunity Announcement currently planned for June 17, 2009.

Funding Range for Projects

As stipulated in the Recovery Act, DOE will provide funding covering up to 50% of qualified investments requested by grant applicants. DOE anticipates providing funds in the range of \$500,000 to \$20,000,000 for smart grid technology deployment grants and \$100,000 to \$5,000,000 for PMU deployment grants.

Draft Program Description

The purpose of the Smart Grid Investment Grant Program is to stimulate the rapid deployment and integration of advanced digital technology that is needed to modernize the nation's electric delivery network for enhanced operational intelligence and connectivity. The electric delivery network for smart grid modernization encompasses the electric transmission and distribution infrastructure that interconnects large generation at one end and consumers' electric loads at the other end, as well as all components and systems in between, including distributed energy resources.

The application of advanced digital technology (i.e., microprocessor-based measurement and control, communications, computing, and information technology) will greatly improve the reliability, security, and efficiency of the electric grid, while minimizing its environmental impact. The enhanced connectivity will call for different applications, systems, and devices to be interoperable with one another, through a combined use of open system architecture, as an integration platform, and commonly-shared technical standards and protocols for communications and information systems.

On June 19-20, 2008, DOE brought together 140 experts, representing various stakeholder groups associated with smart grid technology, at a workshop in Washington, DC. The objective of the workshop was to identify a set of metrics for measuring progress toward implementation of smart-grid technologies, practices, and services. The

announcement for the workshop and results of the discussion are provided in the following documents, which serve to provide additional information on the characteristics of a smart grid:

- Announcement for the Smart Grid Implementation Workshop, June 19-20, 2008, Washington, DC (http://www.oe.energy.gov/DocumentsandMedia/Smart_Grid_Workshop_Announcement.pdf)
- “Metrics for Measuring Progress Toward Implementation of the Smart Grid,” Results of the Breakout Session Discussions at the Smart Grid Implementation Workshop, June 19-20, 2008, Washington, DC, prepared by Energetics, Incorporated, July 31, 2008 (http://www.oe.energy.gov/DocumentsandMedia/Smart_Grid_Workshop_Report_Final_Draft_08_12_08.pdf)

In addition, DOE works closely with the Gridwise Architecture Council to advance the development of interoperability standards enabling electronic devices to communicate and share information. More information on the Gridwise Architecture Council can be found at www.gridwiseac.org.

DOE intends to follow the progress of smart grid technology according to the following four areas, which reflect the metrics developed at the June 19-20, 2008 workshop:

1. Area, regional, and national coordination regimes: This area involves enhancing coordination among many entities, including balancing areas, independent system operators (ISOs), regional transmission operators (RTOs), electricity market operations, and government emergency-operation centers. Efforts in this area would lead to improved measurements, monitoring, communications, and controls to determine the state and health of the system, as well as to enhance cost-effectiveness, reliability, environmental compliance, and response to disturbances.
2. Distributed energy resource technology: This area includes the integration of distributed energy resources into the electric system. Distributed energy resources encompasses renewable resources (such as, solar and wind resources), nonrenewable and energy efficient resources on or near the loads, storage technologies (for example, advanced battery-based and non-battery-based storage devices), demand-side resources (such as, smart appliances, electric vehicles, plug-in hybrid electric vehicles, and industrial and commercial equipment with smart-grid functions). Innovative approaches for aggregating distributed energy resources are also included in this area.
3. Delivery (transmission and distribution) infrastructure: At the transmission level, this area includes substation automation, dynamic limits, relay coordination, and the associated sensing, communication, and coordination systems. At the distribution level, this area includes distribution automation (for example, feeder-load balancing, capacitor switching, and system restoration), enhancing customer

participation in demand response, and improving power quality to meet the evolving range of customer needs.

4. Information networks: This area involves the application of information technology and pervasive communications technology to enhance network functions. Efforts would include improving interoperability, ease of integration of automation components, and cyber security enhancements.

Phasor Measurement Unit Deployment:

A portion of the funding will be allocated specifically to promote the deployment and integration of phasor measurement unit (PMU) technology. Phasor measurement units are high-speed, time-synchronized digital recorders that measure voltage, current and frequency on the electric power transmission system and calculate voltage and current magnitudes, phase angles and real and reactive power flows. These so-called synchrophasor measurements produced by PMUs are the heart of a network-based, wide-area measurement system that provides data to run analytical applications that provide real-time information and visualization on the status of the grid.

To fully leverage the capabilities of this technology, it is necessary to install and network many of these high-resolution, time-synchronized sensors, collect and analyze their data, and use those data in analysis tools for operating and planning more reliable electric power systems. A critical goal of these grants is to expand the number and coverage of PMUs in each interconnection that feed their output into a network that shares data necessary to detect and mitigate wide-area disturbances. DOE works closely with the North American SynchroPhasor Initiative (NASPI) to advance the application of information and communications systems within the electric power industry. More information on NASPI may be found at www.naspi.org.

To evaluate the cost-effectiveness of proposed PMU technologies, it is desirable to quantitatively evaluate the benefits of systems with and without PMUs, or with different levels of PMU integration.

Smart Grid Goals:

The goal of a smart grid is to collect and provide the optimal amount of information necessary for customers, distributors and generators to change their behavior in a way that reduces system demands and costs, increases energy efficiency, optimally allocates and matches demand and resources to meet that demand, and increases the reliability of the grid. The social benefits of a smart grid are reduced emissions, lower costs, increased reliability, greater security and flexibility to accommodate new energy technologies, including renewable, intermittent and distributed sources.

Draft Eligibility Requirements

Applicants are required to meet the qualifications presented in the below sections regarding smart grid functions and qualifying and non-qualifying investments. Eligible applicants, include, but are not limited to the following:

- Electric utilities, such as investor-owned utilities, municipality-owned utilities, and rural electric cooperatives,
- Load serving entities, or load distribution companies, which provide electricity distribution services,
- Retail distributors or marketers of electricity which sell electricity to consumers,
- System operators which coordinate, control, and monitor the operation of the electrical power transmission systems within a single state or region, and
- Manufacturers of appliances and equipment to enable smart grid functionalities.

National Laboratories and Federally Funded Research and Development Centers are not eligible to receive funding provided through these grants.

Smart Grid Functions:

Applicants should propose projects that support or advance one or more smart grid functions. The term “smart grid function” denotes any of the following functions (per EISA, Section 1306 (d)):

1. The ability to develop, store, send and receive digital information concerning electricity use, costs, prices, time of use, nature of use, storage, or other information relevant to device, grid, or utility operations, to or from or by means of the electric utility system, through one or a combination of devices and technologies.
2. The ability to develop, store, send and receive digital information concerning electricity use, costs, prices, time of use, nature of use, storage, or other information relevant to device, grid, or utility operations to or from a computer or other control device.
3. The ability to measure or monitor electricity use as a function of time of day, power quality characteristics such as voltage level, current, cycles per second, or source or type of generation and to store, synthesize or report that information by digital means.
4. The ability to sense and localize disruptions or changes in power flows on the grid and communicate such information instantaneously and automatically for purposes of enabling automatic protective responses to sustain reliability and security of grid operations.

5. The ability to detect, prevent, communicate with regard to, respond to, or recover from system security threats, including cyber-security threats and terrorism, using digital information, media, and devices.
6. The ability of any appliance or machine to respond to such signals, measurements, or communications automatically or in a manner programmed by its owner or operator without independent human intervention.
7. The ability to use digital information to operate functionalities on the electric utility grid that were previously electro-mechanical or manual.
8. The ability to use digital controls to manage and modify electricity demand, enable congestion management, assist in voltage control, provide operating reserves, and provide frequency regulation.

Qualifying Investments:

Qualifying smart grid investments may include the following (per EISA, Section 1306 (b)):

1. In the case of appliances covered for purposes of establishing energy conservation standards under part B of title III of the Energy Policy and Conservation Act of 1975 (42 U.S.C. 6291 et seq.), the documented expenditures incurred by a manufacturer of such appliances associated with purchasing or designing, creating the ability to manufacture, and manufacturing and installing for one calendar year, internal devices that allow the appliance to engage in smart grid functions.
2. In the case of specialized electricity-using equipment, including motors and drivers, installed in industrial or commercial applications, the documented expenditures incurred by its owner or its manufacturer of installing devices or modifying that equipment to engage in smart grid functions.
3. In the case of transmission and distribution equipment fitted with monitoring and communications devices to enable smart grid functions, the documented expenditures incurred by the electric utility to purchase and install such monitoring and communications devices.
4. In the case of metering devices, sensors, control devices, and other devices integrated with and attached to an electric utility system or retail distributor or marketer of electricity that are capable of engaging in smart grid functions, the documented expenditures incurred by the electric utility, distributor, or marketer and its customers to purchase and install such devices.
5. In the case of software that enables devices or computers to engage in smart grid functions, the documented purchase costs of the software.

6. In the case of entities that operate or coordinate operations of regional electric grids, the documented expenditures for purchasing and installing such equipment that allows smart grid functions to operate and be combined or coordinated among multiple electric utilities and between that region and other regions.
7. In the case of persons and entities other than electric utilities owning and operating a distributed electricity generator, the documented expenditures of enabling that generator to be monitored, controlled, or otherwise integrated into grid operations and electricity flows on the grid utilizing smart grid functions.
8. In the case of electric or hybrid-electric vehicles, the documented expenses for devices that allow the vehicle to engage in smart grid functions (but not the costs of electricity storage for the vehicle).

Non-Qualifying Investments:

Qualifying smart grid investments do not include any of the following (per EISA, Section 1306 (c)):

1. Investments or expenditures for smart grid technologies, devices, or equipment that utilize specific tax credits or deductions under the Internal Revenue Code, as amended.
2. Expenditures for electricity generation, transmission, or distribution infrastructure or equipment not directly related to enabling smart grid functions.
3. After the final date for State consideration of the Smart Grid Information Standard under section 1307 (paragraph (17) of Section 111(d) of the Public Utility Regulatory Policies Act of 1978), an investment that is not in compliance with such standard.
4. After the development and publication by the Institute of protocols and model standards for interoperability of smart grid devices and technologies, an investment that fails to incorporate any of such applicable protocols or model standards.
5. Expenditures for physical interconnection of generators or other devices to the grid except those that are directly related to enabling smart grid functions.
6. Expenditures for ongoing salaries, benefits, or personnel costs not incurred in the initial installation, training, or startup of smart grid functions.
7. Expenditures for travel, lodging, meals or other personnel costs.
8. Ongoing or routine operation, billing, customer relations, security, and maintenance expenditures.

In addition (as specified in Recovery Act, Section 1604), none of the funds made available may be used by any State or local government, or any private entity, for any casino or other gambling establishment, aquarium, zoo, golf course, or swimming pool.

Smart Grid Benefits Estimation

DOE intends to involve grant participants in an effort to gather data and perform analysis to estimate the project-based and societal benefits of smart grid technology and associated implementation policies. The benefits that DOE is interested in determining include:

- The extent to which smart grid technology influences peak demand reduction through the application of smart devices and how they might affect consumer behavior and enable renewable and distributed energy resources.
- The extent to which generation, transmission and distribution assets are utilized through improved demand-side management and infrastructure investment deferrals.
- The extent to which reliability is improved through the application of smarter sensing, communication and control devices.
- The extent to which a smart grid might lead to reduced emissions of environmental pollutants, e.g., carbon dioxide, and reliance on foreign-supplied fuels.

The benefits estimation effort will involve an analytical approach that will be further described within the subsequent Funding Opportunity Announcement. Grant applicants should submit: 1) a discussion of how the information generated by the funded technologies is used by utilities and customers; 2) an estimate of the public benefits generated by the funded technologies, as well as an explanation of how these estimates were calculated; 3) an enumeration of the deployed technologies, e.g. number of units deployed; and 4) cost per unit of units deployed.

In addition, it is anticipated that the methodology would require that certain grant recipients apply a randomized approach to how smart devices are deployed to minimize demographic and other potential biases. For example, project participants that will deploy smart meter technologies within a utility's territory will need to apply such an approach to minimize potential biases, and they will need to gather data that would allow assessment of the impact of real time pricing on consumption. DOE will incorporate data provided by grant recipients in studies that will result in publications, but institute practices to ensure complete anonymity of data sources. DOE considers that it is important to measure the effectiveness of smart grid technology through this grant program.

Draft Application Requirements

DOE intends to group applications according to smart grid or PMU categories, and applicants will be expected to indicate under which category their project should be considered. In addition, applicants should indicate what smart grid area their project best fits, if they select the smart grid category. An application with a given approach may only be submitted to one area, as shown in Table 1. That is, applicants are not permitted to submit the same application for multiple areas. However, applicants may submit more than one application, each presenting a unique approach for a chosen area.

Table 1 – Application Categories and Areas

Category	Area
Smart Grid	Area, Regional, and National Coordination Regimes
	Distributed Energy Resource Technology
	Delivery (T&D) Infrastructure
	Information Networks
PMU	PMU Technology Deployment

Applicants should provide the following for each application:

1. A project plan that provides:
 - a. A detailed description of the project to be performed, including an explanation of the various project elements with key milestones and associated schedule. DOE expects the expenditure of goods and services to be completed within a two-year time frame.
 - b. A description of the project team, including:
 - i. The name and qualifications of the project lead (with one-page resume showing the project lead’s background and experience).
 - ii. A description of the project team with a discussion on respective roles and responsibilities and an identification of key personnel assisting the project lead.
 - iii. An identification of each of the significant vendors and what they will provide in terms of goods and services with letters of commitment provided to the lead organization.
 - c. A description of the items in tabular form that will contribute to the cost of the project and when they will be expensed over the duration of the project, including:
 - i. Labor costs.
 - ii. Equipment (including hardware and software) and services that will be purchased for the project, including their actual (if available) or estimated costs.
 - iii. The extent of cost share provided by the applicant, including identifying, if possible, the expenses borne by the applicant versus with the use of government funds.
 - d. A description of how cyber security concerns will be addressed with respect to the use of best available equipment and the application of

procedures and practices involving system design, testing, deployment, operations and decommissioning, including at a minimum:

- i. A description of the cyber security risks at each stage of the system deployment lifecycle,
 - ii. Cyber security criteria used for vendor and device selection,
 - iii. Cyber security control strategies,
 - iv. Descriptions of residual cyber security risks,
 - v. Relevant cyber security standards and best practices, and
 - vi. Descriptions of how the project will support/adopt/implement emerging smart grid security standards.
- e. An identification of decisions requiring external approval, e.g., the allowance of investment expenditures by Public Utility Commissions or other authorities.
 - f. A discussion of potential risks (technical, financial or institutional) that may impact the successful completion of work or impede the schedule, and how they will be addressed.
 - g. Certifications, if required.
 - h. A discussion of how interoperability considerations, as defined by the Gridwise Architecture Council's Decision-Maker's Interoperability Checklist, will be utilized. Additional information is available at: http://www.gridwiseac.org/pdfs/gwac_decisionmakerchecklist.pdf.
 - i. A discussion of the DOE metrics that the applicant will select to track progress against program performance. DOE will provide a representative set of metrics that can be applied for this purpose.

Special Instructions for Applicants Submitting to Smart Grid Areas – With respect to the above, for applications that involve the installation of advanced metering devices, the applicant must describe any and all time-varying or other incentive-rate structures that are currently available or will be offered to customers.

Special Instructions for Applicants Submitting to the PMU Technology Deployment Area – With respect to the above, applications should incorporate project plans that include one or more utilities and/or transmission asset owners on the project team. Applications should also consider an integrated team approach which would include additional organizations, e.g., vendors, academic institutions, consultants, and power plant owners, which bring relevant skills to the project. In addition, DOE strongly urges applicants to participate in the North American Synchronphasor Initiative.

2. A discussion on how and to what extent the project advances smart grid functions.

The applicant should provide a description on how and to what extent the project will advance the adoption and integration of smart grid functions (as defined in Section 1306 (d), EISA) and the program areas defined above. The discussion

should include where the technology will be installed, how it will be applied, and to what extent it will impact or enable smart grid functions.

Special Instructions for Applicants Submitting to the PMU Technology

Deployment Area – With respect to the above, applicants should discuss the extent to which they support the advancement and integration of smart grid functions into the practices of the electric industry, i.e., how well they support interoperability between phasor devices, communications networks, data streams and applications. If appropriate, the discussion should consider:

- a. A description of what devices will be purchased and where they will be installed within a service territory. It is expected that these devices (i.e., measurement, communications and computational systems) must be fully compliant with the Critical Infrastructure Protection (CIP) cyber security standards of the North American Reliability Corporation (NERC), CIP-003 through 009. In addition, they should comply with relevant technical standards, such as those established by the Institute of Electrical and Electronics Engineers, Inc. (IEEE), e.g., the IEEE C37.118 protocol, and the International Electrotechnical Commission (IEC) for high-speed grid condition measurement devices. In addition, the devices should be interoperable and use open architectures that facilitate further interoperability and scalability.
- b. A description of the communication pathway(s) used to enable connectivity to a data collection location, including if the applicant will utilize a phasor data concentrator (PDC) to collect, facilitate storage, and align the PMU data.
- c. A description of efforts that will be undertaken to enable data from synchrophasors and/or PDCs to be visualized. (The applicant may request assistance and training on the use of DOE-developed visualization systems.)
- d. A description of efforts involving NASPInet and phasor data gateways for sharing data outside your service territory.

3. Estimate of Job Creation

The applicant should provide an estimate of the number of jobs created and retained as a result of their grant. DOE plans to provide a standard methodology by which applicants can estimate the extent of job creation. The methodology is being developed by the President's Council of Economic Advisors.

4. Description of How Results will be Evaluated

The applicant should provide a discussion of how they will meet program goals, as well as provide an estimate of benefits and describe the approach that will be used to measure and quantify benefits. Grant applicants should submit: 1) a discussion of how the information generated by the funded technologies is used

by utilities and customers; 2) an estimate of the public benefits generated by the funded technologies as well as an explanation of how these estimates were calculated; 3) an enumeration of the deployed technologies, e.g. number of units deployed; and 4) cost per unit of units deployed. Evaluation of the benefits of the proposed project should include quantitative measures of the effects of the project contrasted with observations of similar areas in which the technology is not implemented. The preferred approach is to use a randomized control trial.

Draft Merit Review Criteria

Projects may be evaluated against the following draft/sample merit review criteria:

1. Project Approach and Feasibility

Applications will be evaluated based on the comprehensiveness and completeness of the project plan, including the likelihood that the proposed work can be accomplished within the given budget and schedule with additional merit given to applications that:

- a. Provide a clear and logical work plan, including how technical and institutional issues will be addressed.
- b. Identify the public benefits to be derived, and a clear description(s) of how the benefits of the project will be quantified, including the use of randomization as a means to provide control data.
- c. Provide a comprehensive discussion of how cyber security concerns will be addressed in the project. Cyber security concerns must be addressed at the beginning of any system, component, or application design, and throughout every phase of the engineering lifecycle, including architecture, acquisition, implementation, integration, deployment, operations, maintenance, and decommissioning. Cyber security solutions must be comprehensive and capable of evolving rapidly in response to changes in the threat or technological environment. Discussions should include:
 - i. A description of the methodology(ies) used to identify cyber security risks and the outputs from those assessments. Assessments should consider not only impacts to the mission, but to other smart grid or control functions with which it has interdependency.
 - ii. Descriptions of how cyber security risks will be addressed at each phase of the engineering lifecycle.
 - iii. Descriptions of the capabilities of the component and/or system to be updated to meet future security requirements.
 - iv. Descriptions of how relevant cyber security standards will be utilized at both the technology level and the management and operations of said technologies, including a description of the operational environment where the component and/or system will be used.

- v. A description of how components (hardware and software) and the installed system will be tested to determine the effectiveness of cyber security measures. Testing by an independent, third-party is highly encouraged.
- d. Apply schedules showing rapid expenditure for goods and services and near-term installation of smart grid technology.
- e. Offer the greatest extent of institutional and organizational commitment with consideration given to:
 - i. The qualifications of the project lead and team members.
 - ii. Letters of commitment from vendors or other project participants.
 - iii. Required approvals from regulatory organizations.
 - iv. Required certifications.

Special Instructions for Applicants Submitting to the PMU Technology

Deployment Area – With respect to the above, DOE will give additional merit to applications that apply an integrated team approach and which includes a transmission asset owner and/or utility (or utilities) as team members. The team should be composed of participants that bring relevant skills to the project.

2. Project Impact

Applications will be evaluated based on the overall impact on advancing program goals and achieving public benefits gained by the deployment of smart grid functions within the electric industry. Applications will be evaluated based on the extent that they:

- a. Create the public benefits, including:
 - i. Reduced emissions,
 - ii. Lower costs,
 - iii. Enhanced cost-effectiveness,
 - iv. Increased reliability,
 - v. Greater energy security,
 - vi. Flexibility to accommodate new energy technologies, including renewable, intermittent and distributed sources, and
 - vii. Other public benefits that derive from the project.
- b. Combine multiple applications of smart grid technologies that perform various services or functions for the grid to increase public benefits.
- c. Enable active participation by consumers of electricity.
- d. Address interoperability concerns.
- e. Integrate renewable and distributed energy resources at the distribution level.
- f. Apply cyber security technology and standards.
- g. Utilize dynamic pricing of electricity consumption rather than pay for demand reduction, to the extent applicable.
- h. Devise a randomized assignment mechanism based on key variables.

Special Instructions for Applicants Submitting to Smart Grid Areas – With respect to the above, for applications that involve the installation of advanced metering devices, the applicant will be evaluated based on the extent to which any and all time-varying and other incentive-rate structures will be made available to customers.

Special Instructions for Applicants Submitting to the PMU Technology Deployment Area – With respect to the above, additional merit will be given to projects in which PMUs are installed on the transmission or distribution system of an asset owner and/or utility. Additional merit will progressively be given to those projects that enable the following enhancements:

- a. Connecting PMUs via suitable broadband communications to a data archiving unit, commonly called a phasor data concentrator (PDC).
- b. Installing a visualization system that allows operators to view the data from the PMUs and observe steady state and dynamic conditions on their system.
- c. Connecting the utility's PDC via the new communications architecture, NASPInet, through a Phasor Gateway to the data bus that allow utilities to exchange PMU data for the mutual benefit of the utilities and reliability organizations.

3. Job Creation and Retention

Projects will be evaluated based on the extent to which they create and retain jobs. DOE will provide a standard methodology, currently being developed by the President's Council of Economic Advisors, to perform this calculation.

4. Extent of Cost-Sharing

Applications will be evaluated based on the extent of cost-share proposed. The minimum cost-sharing required is 50%, but applicants may propose to contribute a larger percentage of the project cost.

Draft Program Policy Factors

DOE may apply additional criteria that reflect policy factors in the selection of applications for award. For example, DOE might consider it desirable:

1. To select for award a group of applications which represents a diversity of technical approaches and methods;
2. To select different kinds and sizes of organizations in order to provide a balanced programmatic effort and a variety of different technical perspectives;
3. To select a group of applications with a broad or specific geographic distribution;
4. To select application(s) of less technical merit than other applications(s) if such a selection will optimize use of available funds by allowing more applications to be

supported or diversify technical approaches, and not be detrimental to the overall objectives of the program.

Certifications from State and Local Government Officials

With respect to funds made available to State or local governments for infrastructure investments under the Recovery Act, the Governor, mayor, or other chief executive, as appropriate, will certify by acceptance of this award that the infrastructure investment has received the full review and vetting required by law and that the chief executive accepts responsibility that the infrastructure investment is an appropriate use of taxpayer dollars. Recipient shall provide an additional certification that includes a description of the investment, the estimated total cost, and the amount of covered funds to be used for posting on the Internet. A State or local agency may not receive infrastructure investment funding from funds made available by the Recovery Act unless this certification is made and posted.

Anticipated Schedule

DOE anticipates issuing the FOA on June 17, 2009 and will permit applicants to submit applications on or before three separate due dates with the complete obligation of funds to awards accomplished by September 30, 2010. The three anticipated application due dates are: July 29, 2009; December 2, 2009; and March 31, 2010. DOE cannot predict at this time that funds will remain available beyond awards provided after the first due date.

Reporting Requirements

As defined by the Recovery Act, Section 1512, grant awardees are required to provide a quarterly report providing information on how funds are expended and estimates of the numbers of jobs created and retained. Additional information on these mandated reporting requirements are presented within Special Provisions, Attachment A. In addition, DOE will require reporting on progress against the project plan and selected program metrics on an annual basis. DOE will provide a set of metrics it would like projects to track within the subsequent Funding Opportunity Announcement.

Comment Period and DOE Responses

Questions and comments will be accepted until 5 pm, EST, May 6, 2009. All questions and comments pertaining to this notice and the draft financial assistance documents should be directed via e-mail to: Smart-Grid.NOIComments@hq.doe.gov. DOE responses and updates, including special announcements regarding grant information, will be posted on Federal Business Opportunities (FedBizOpps) at https://www.fbo.gov/index?s=opportunity&mode=form&id=ebe206ba070c516398e5f68a1ad0979f&tab=core&_cview=0 under solicitation number DE-FOA-0000058A and the website of DOE's Office of Electricity Delivery and Energy Reliability (at <http://www.oe.energy.gov>).

Information Pertaining to the Funding Opportunity Announcement

The FOA will include comprehensive detail about specific program areas of interest, application instructions, and evaluation criteria. The formal FOA will be disseminated electronically through <http://www.grants.gov> and the Department's Strategic Integrated Procurement Enterprise System (STRIPES). Information regarding awards resulting from the FOA will be published on the Internet and linked to the website, www.recovery.gov, maintained by the Accountability and Transparency Board.

Special Provisions

Additional special provisions, such as, certifications required by State and local governments, reporting requirements, and other terms and conditions, are provided in Attachment A.

Additional Information

Additional information about the programs of the Office of Electricity Delivery and Energy Reliability can be obtained at the Office's website at: <http://www.oe.energy.gov>.

ATTACHMENT A

Special Provisions Relating to Work Funded under the American Recovery and Reinvestment Act of 2009 (Mar 2009)

In addition to the above, DOE will include the following terms and conditions for all grants, cooperative agreements and technology investment agreements (new or amended) that apply funds appropriated under the American Recovery and Reinvestment Act of 2009, Pub. L. 111-5 (Recovery Act).

Preamble

The Recovery Act was enacted to preserve and create jobs and promote economic recovery, assist those most impacted by the recession, provide investments needed to increase economic efficiency by spurring technological advances in science and health, invest in transportation, environmental protection, and other infrastructure that will provide long-term economic benefits, and stabilize State and local government budgets in order to minimize and avoid reductions in essential services and counterproductive State and local tax increases. Recipients shall use grant funds in a manner that maximizes job creation and economic benefit.

The Recipient shall comply with all terms and conditions in the Recovery Act relating generally to governance, accountability, transparency, data collection and resources as specified in Act itself and as discussed below.

Recipients should begin planning activities for their first tier subcontractors, including obtaining a DUNS number (or updating the existing DUNS record), and registering with the Central Contractor Registration (CCR).

Be advised that Recovery Act funds can be used in conjunction with other funding as necessary to complete projects, but tracking and reporting must be separate to meet the reporting requirements of the Recovery Act and related Guidance (as issued by DOE). For projects funded by sources other than the Recovery Act, Contractors should plan to keep separate records for Recovery Act funds and to ensure those records comply with the requirements of the Act.

The Government has not fully developed the implementing instructions of the Recovery Act, particularly concerning the how and where for the new reporting requirements. The Contractor will be provided these details as they become available. The Contractor must comply with all requirements of the Act. If the contractor believes there is any inconsistency between Recovery Act requirements and current contract requirements, the issues will be referred to the Contracting Officer for reconciliation.

Definitions

“Covered Funds” means funds expended or obligated from appropriations under the Recovery Act. Covered Funds will have special accounting codes and will be identified as Recovery Act funds in the contract and/or modification using Recovery Act funds. Covered Funds must be reimbursed by September 30, 2015.

“Non-Federal employer” means any employer with respect to covered funds, i.e., the contractor, subcontractor, grantee, or recipient, as the case may be, if the contractor, subcontractor, grantee, or recipient is an employer; and any professional membership organization, certification of other professional body, any agent or licensee of the Federal government, or any person acting directly or indirectly in the interest of an employer receiving covered funds; or with respect to covered funds received by a State or local government, the State or local government receiving the funds and any contractor or subcontractor receiving the funds and any contractor or subcontractor of the State or local government; and does not mean any department, agency, or other entity of the Federal government.

“Recipient” means any entity that receives Recovery Act funds directly from the Federal government (including Recovery Act funds received through grant, loan, or contract) other than an individual and includes a State that receives Recovery Act Funds.

Special Provisions

A. Flow Down Requirement

Recipients must include these special terms and conditions in any subaward.

B. Segregation of Costs

Recipients must segregate the obligations and expenditures related to funding under the Recovery Act. Financial and accounting systems should be revised as necessary to segregate, track and maintain these funds apart and separate from other revenue streams. No part of the funds from the Recovery Act shall be commingled with any other funds or used for a purpose other than that of making payments for costs allowable for Recovery Act projects.

C. Prohibition on Use of Funds

None of the funds provided under this agreement derived from the Recovery Act may be used by any State or local government, or any private entity, for any casino or other gambling establishment, aquarium, zoo, golf course, or swimming pool.

D. Wage Rates

All laborers and mechanics employed by contractors and subcontractors on projects funded directly by or assisted in whole or in part by and through the Federal Government pursuant to the Recovery Act shall be paid wages at rates not less than those prevailing on projects of a character similar in the locality as determined by the Secretary of Labor in accordance with subchapter IV of chapter 31 of title 40, United States Code. With respect to the labor standards specified in this section, the Secretary of Labor shall have the authority and functions set forth in Reorganization Plan numbered 14 of 1950 (64 Stat. 1267, 5 U.S.C. App.) and section 3145 of title 40 United States Code.

E. Reporting Requirements for Recipients

Not later than 10 days after the end of each calendar quarter, each recipient shall submit a report to the Contractor Officer or to an address or website designated by the Contracting Officer that contains:

1. The total amount of Recovery Act covered funds received from that agency;
2. The amount of Recovery Act covered funds received that were expended or obligated to projects or activities;
3. A detailed list of all projects or activities for which Recovery Act covered funds were expended or obligated including:
 - a. Name of project or activity,
 - b. Contract or agreement number,
 - c. Description of project or activity,
 - d. Evaluation of the completion status of project or activity,
 - e. Estimate of number of jobs created and retained by project or activity in the manner and form prescribed,
 - f. Infrastructure investments made by State and local governments, purpose, total cost, rationale of agency for funding infrastructure investment, name of agency contact, and
 - g. Information on subgrants awarded by recipient to include data elements required to comply with the Federal Accountability and Transparency Act of 2006 (Pub. L. 109-282).
 - h. Description of effectiveness data collected to date and during the preceding quarter.

A Reporting Requirements Checklist for the Recovery Act-Performance Progress Report and Instructions will be provided. This information shall be reported to and published on the Internet at www.Recovery.gov.

Recipients required to report must register with the Central Contractor Registration (CCR) database. Recipients shall ensure that all first-tier sub-recipients have a DUNS number and are registered in the CCR no later than the date the first report is due. Failure to comply with this reporting requirement may result in termination of that part of the award funded by the Recovery Act.

F. Access to Records

With respect to each contract or grant awarded utilizing at least some of the funds appropriated or otherwise made available by the Recovery Act, any representative of an appropriate inspector general appointed under section 3 or 8G of the Inspector General Act of 1988 (5 U.S.C. App.) or of the Comptroller General is authorized:

1. To examine any records of the contractor or grantee, any of its subcontractors or subgrantees, or any State or local agency administering such contract that pertain to, and involve transactions relation to, the subcontract, subcontract, grant, or subgrant; and
2. To interview any officer or employee of the contractor, grantee, subgrantee, or agency regarding such transactions.

G. Publications

An application may contain technical data and other data, including trade secrets and/or privileged or confidential information, which the applicant does not want disclosed to the public or used by the Government for any purpose other than the application. To protect such data, the applicant should specifically identify each page including each line or paragraph thereof containing the data to be protected and mark the cover sheet of the application with the following Notice as well as referring to the Notice on each page to which the Notice applies:

Notice of Restriction on Disclosure and Use of Data

The data contained in pages ---- of this application have been submitted in confidence and contain trade secrets or proprietary information, and such data shall be used or disclosed only for evaluation purposes, provided that if this applicant receives an award as a result of or in connection with the submission of this application, DOE shall have the right to use or disclose the data here to the extent provided in the award. This restriction does not limit the Government's right to use or disclose data obtained without restriction from any source, including the applicant.

Information about this agreement will be published on the Internet and linked to the website, www.recovery.gov, maintained by the Accountability and Transparency Board. The Board may exclude posting contractual or other information on the website on a case-by-case basis when necessary to protect national security or to protect information that is not subject to disclosure under sections 552 and 552a of title 5, United States Code.

H. Protecting State and Local Government and Contractor Whistleblowers

The requirements of Section 1553 of the Act are summarized below. They include, but are not limited to:

Prohibition on Reprisals: An employee of any non-Federal employer receiving covered funds under the Recovery Act may not be discharged, demoted, or otherwise discriminated against as a reprisal for disclosing, including a disclosure made in the ordinary course of an employee's duties, to the Accountability and Transparency Board, an inspector general, the Comptroller General, a member of Congress, a State or Federal regulatory or law enforcement agency, a person with supervisory authority over the employee (or other person working for the employer who has the authority to investigate, discover or terminate misconduct, a court or grand jury, the head of a Federal agency, or their representatives information that the employee believes is evidence of:

- Gross management of an agency contract or grant relating to covered funds;
- A gross waste of covered funds;
- A substantial and specific danger to public health or safety related to the implementation or use of covered funds;
- An abuse of authority related to the implementation or use of covered funds;
- or
- As violation of law, rule, or regulation related to an agency contract (including the competition for or negotiation of a contract) or grant, awarded or issued relating to covered funds.

Agency Action: Not later than 30 days after receiving an inspector general report of an alleged reprisal, the head of the agency shall determine whether there is sufficient basis to conclude that the non-Federal employer has subjected the employee to a prohibited reprisal. The agency shall either issue an order denying relief in whole or in part or shall take one or more of the following actions:

- Order the employer to take affirmative action to abate the reprisal;
- Order the employer to reinstate the person to the position that the person held before the reprisal, together with compensation including back pay, compensatory damages, employment benefits, and other terms and conditions of employment that would apply to the person in that position if the reprisal had not been taken; and
- Order the employer to pay the employee an amount equal to the aggregate amount of all costs and expenses (including attorneys' fees and expert witnesses' fees) that were reasonably incurred by the employee for or in connection with, bringing the complaint regarding the reprisal, as determined by the head of a court of competent jurisdiction.

Nonenforceability of Certain Provisions Waiving Rights and Remedies or Requiring Arbitration: Except as provided in a collective bargaining agreement, the rights and remedies provided to aggrieved employees by this section may not be waived by any agreement, policy, form, or condition of employment, including any predisputed arbitration agreement. No predisputed arbitration agreement shall be valid or enforceable if it requires arbitration of a dispute arising out of this section.

Requirement to Post Notice of Rights and Remedies: Any employer receiving covered funds under the Recovery Act shall post notice of the rights and remedies as required therein. (Refer to Section 1553 of the Recovery Act, www.Recovery.gov, for specific requirements of this section and prescribed language for the notices.).

I. Request for Reimbursement

Recipients must provide information with its submission of the SF-270, Request for Advance or Reimbursement, to identify the portion of the request that is associated with Recovery Act projects. If the award will have Recovery Act and non-Recovery Act funds, reimbursement costs must be done by receipt of an SF-270, Request for Advance or Reimbursement, through the Automated Clearing House and the Vendor Invoice Payment Electronic Reporting System (VIPERS).

J. False Claims Act

Recipient and subrecipients shall promptly refer to the DOE or other appropriate Inspector General any credible evidence that a principal, employee, agent, contractor, subgrantee, subcontractor or other person has submitted a false claim under the False Claims Act or has committed a criminal or civil violation of laws pertaining to fraud, conflict or interest, bribery, gratuity or similar misconduct involving those funds.

K. Information in Supporting of Recovery Act Reporting

Recipients may be required to submit backup documentation for expenditures of funds under the Recovery Act including such items as timecards and invoices. Recipient shall provide copies of backup documentation at the request of the Contracting Officer or designee.

L. Availability of Funds

Funds appropriated under the Recovery Act and obligated to this award are available for reimbursement of costs until September 30, 2015.

M. Buy American

As noted in Section 1605 of the Recovery Act (on use of American iron, steel, and manufactured goods):

- (a) None of the funds provided under this agreement derived from the Recovery Act may be used for a project for the construction, alteration, maintenance, or repair of a public building or public work unless all of the iron, steel, and manufactured goods used in the project are produced in the United States.
- (b) Subsection (a) shall not apply in any case or category of cases in which the head of the Federal department or agency (grantor) finds that –
 - (1) Applying subsection (a) would be inconsistent with the public interest;

- (2) Iron, steel, and the relevant manufactured goods are not produced in the United States in sufficient and reasonably available quantities and of a satisfactory quality; or
- (3) Inclusion of iron, steel and manufactured goods produced in the United States will increase the cost of the overall project by more than 25 percent.
- (c) If the head of a Federal department or agency determines that it is necessary to waive the application of subsection (a) based on a finding under subsection (b), the head of the department or agency shall publish in the Federal Register a detailed written justification as to why the provision is being waived.
- (d) This section shall be applied in a manner consistent with United States obligations under international agreements.

Implementing the above provision should follow the forthcoming requirements in the Federal Acquisition Regulations or as otherwise identified by the Contracting Officer.

N. Title to Real Property and Equipment

Title to real property or equipment purchased in whole or in part with Federal funds vests in the recipient subject to the conditions set forth in regulations found at 10 C.F.R. §§ 600.134 (Institutions of Higher Education, Hospitals and Nonprofits); 600.232 (State and Local Governments); 600.321 (For Profits).

O. Intellectual Property

Patent Rights – For awards involving research, development or demonstration, the government will have certain statutory rights in any invention that may be conceived or first actually reduced to practice under a DOE award. 42 U.S.C. 5908 provides that title to such inventions vests in the United States, except where 35 U.S.C. 202 provides otherwise for nonprofit organizations or small business firms. However, DOE may waive all or any part of the rights of the U.S. in such inventions, subject to certain conditions. DOE will consider granting a class patent waiver for inventions arising under this program.

Rights in Technical Data – Normally, a Federal government has unlimited rights in technical data created under a DOE agreement. Delivery, or third party licensing, of proprietary software or data developed solely at private expense will not normally be required, except as specifically negotiated in a particular agreement to satisfy DOE's own needs or to ensure the commercialization of technology developed under a DOE agreement. DOE will explore whether greater protections for data developed under awards under this program may be available.

Cost-Effectiveness Data – Data on the cost-effectiveness of demonstration technologies must be made publicly available on the applicant's web site at the end of the grant period.

P. Certifications by State and Local Government Officials for Infrastructure Investments

With respect to covered funds made available to State or local governments for infrastructure investments under the Recovery Act (as noted within Section 1511), the Governor, mayor, or other chief executive, as appropriate, certifies by acceptance of the award that the infrastructure investment has received the full review and vetting required by law and that the chief executive accepts responsibility that the infrastructure investment is an appropriate use of taxpayer dollars. Recipients shall provide an additional certification that includes a description of the investment, the estimated total cost, and the amount of covered funds to be used for posting on the Internet. A State or local agency may not receive infrastructure investment funding from funds made available by the Act unless this certification is made and posted.

Q. Additional Funding Distribution and Assurance of Appropriate Use of Funds

As noted within the Recovery Act, Section 1607:

- (a) Certification by Governor – Not later than April 3, 2009, for funds provided to any State or agency thereof by the Recovery Act, the Governor of the State shall certify that: (1) the State will request and use funds provided by the Act; and (2) the funds will be used to create jobs and promote economic growth.
- (b) Acceptance by State Legislature – If funds provided to any State in any division of the Recovery Act are not accepted for use by the Governor, then acceptance by the State legislature, by means of the adoption of a concurrent resolution, shall be sufficient to provide funding to such State.
- (c) Distribution – After adoption of a State legislature’s concurrent resolution, funding to the State will be for distribution to local governments, councils of government, public entities, and public-private entities within the State either by formula or at the State’s discretion.