Fiscal Year (FY) 2010
Energy Efficient Building Systems
Regional Innovation Cluster Initiative

A joint FOA published by:

The Department of Energy

The Department of Commerce—Economic Development Administration

The Department of Commerce—National Institute of Standards and Technology

The Small Business Administration

The Department of Labor

The Department of Education

The National Science Foundation

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JOINT FEDERAL
FUNDING OPPORTUNITY ANNOUNCEMENT

EXECUTIVE SUMMARY

- **Federal Agency Name**: Department of Energy (DOE), Department of Commerce's (DOC) Economic Development Administration (EDA) and National Institute of Standards and Technology/Manufacturing Extension Partnership (NIST/MEP)), Department of Labor (DOL), Department of Education (ED), Small Business Administration (SBA), and National Science Foundation (NSF)

- **Funding Opportunity Title**: Fiscal Year (FY) 2010 Energy Efficient Building Systems Regional Innovation Cluster Initiative

- **Announcement Type and Date**: Initial announcement of federal funding opportunity (FOA) dated February 8, 2010.

- **Catalog of Federal Domestic Assistance (CFDA) Numbers**: 81.086 Conservation Research and Development; 11.300 Grants for Public Works and Economic Development Facilities; 11.307, Economic Adjustment Assistance; 11.611 Manufacturing Extension Partnership; 59.038 Small Business Development Centers

- **Dates**: Consortia must submit their completed application package pursuant to Section IV no later than May 6, 2010, at 5:00 PM Eastern Time.

- **Funding Opportunity Description**: This joint FOA is the first pilot project of the Interagency Regional Innovation Clusters Taskforce (Taskforce). The Taskforce has been charged with developing a replicable and sustainable model for coordinated federal and regional efforts that foster and use regional innovation clusters to develop and demonstrate sustainable and efficient models for attaining national strategic objectives; create and retain Good Jobs (defined below); eliminate gaps between the supply and demand for workers in specialized fields through training and education; increase regional gross domestic product (GDP); promote innovation in science and technology; and enhance the economic, technological, and commercial competitiveness of the United States on the global stage. Due to the critical roles that basic and applied energy research play in attaining two key national strategic objectives—attaining U.S. energy security and reducing the carbon footprint of the United States—the Taskforce selected Energy Efficient Building Systems Design as the topical focus for its first pilot project. The pilot project will be anchored around a DOE-funded Energy Innovation Hub and will also incorporate elements funded by EDA, SBA, and NIST/MEP.

  This joint FOA invites Proposals from Consortia (defined below) that can demonstrate collaboration among their members, with their E-RIC Partners (defined below), and with federal government agencies to support the development and growth of an energy regional innovation cluster. The energy regional innovation cluster within which the selected Consortium operates must possess various characteristics and is referred to

herein as the E-RIC (as defined below). (Please see the diagram at the end of this Executive Summary for an example of what an E-RIC might look like and how the various participants described in this FOA might function within it.) The E-RIC must operate within a defined geographic region that includes a geographically-bounded, active network of similar, synergistic or complementary organizations engaged in or with the energy efficient building systems and design industry, with active channels for business transactions, communications, and dialogue, that share specialized infrastructure, labor markets and services. The E-RIC region may cross municipal, county, and other jurisdictional boundaries. The E-RIC must include the Hub and should encompass local universities, government research centers, and other research and development (R&D) resources, which shall serve as catalysts of innovation and drivers of regional economic growth. In addition, participants in the E-RIC may have strategic partnerships with entities outside of the geographic region. The E-RIC should leverage the region's unique competitive strengths and seek to nurture networks for business financing, business-to-business sales, education, and workforce development. These networks should work in concert with local governments, venture capitalists, private banks, workforce investment boards, non-profit organizations, institutions of higher education (including community colleges), and other public and private agencies and institutions.

The purpose of the pilot project is to support an E-RIC that will develop, expand, and commercialize innovative energy efficient building systems technologies, designs, and best practices for national and international distribution. Specifically, the Participating Agencies (defined below) seek to identify an E-RIC that will focus on systems-based approaches to designing, building, and operating commercial and residential buildings. The Consortium must demonstrate how it will link the Hub with the other Co-Applicants and with complementary federal and non-federal investments in business development and support, public infrastructure, workforce development, and education, for the purpose of growing and expanding a robust E-RIC that will achieve the goals of this FOA.

Funds available for award from the Granting Agencies

- Department of Energy: Up to $22 million in the first year of the award (with additional amounts of up to $25 million per year for four additional years, subject to availability of appropriations);

- Department of Commerce/Economic Development Administration: Up to $3 million in Public Works and Economic Development funds and up to $2 million in Economic Adjustment Assistance funds for a single award over a period of performance not to exceed 5 years;

- Department of Commerce/National Institute of Standards and Technology (Manufacturing Extension Partnership): Up to $500,000 for a one-year award, with the possibility of adding additional amounts of up to $500,000 per year for

up to two additional years, made available to an existing DOC-funded NIST/MEP Center that will use the additional funds to provide services dedicated to the Consortium's effort to support the E-RIC and transition technology to industry; and

- Small Business Administration: Up to $300,000 in the first year, with three one-year options for renewal grants up to $300,000 per year, made available to an existing SBA-funded Small Business Development Center that will use the additional funds to provide services dedicated to the Consortium's effort to grow the E-RIC.

Consortium Proposals and Co-Applicant Applications

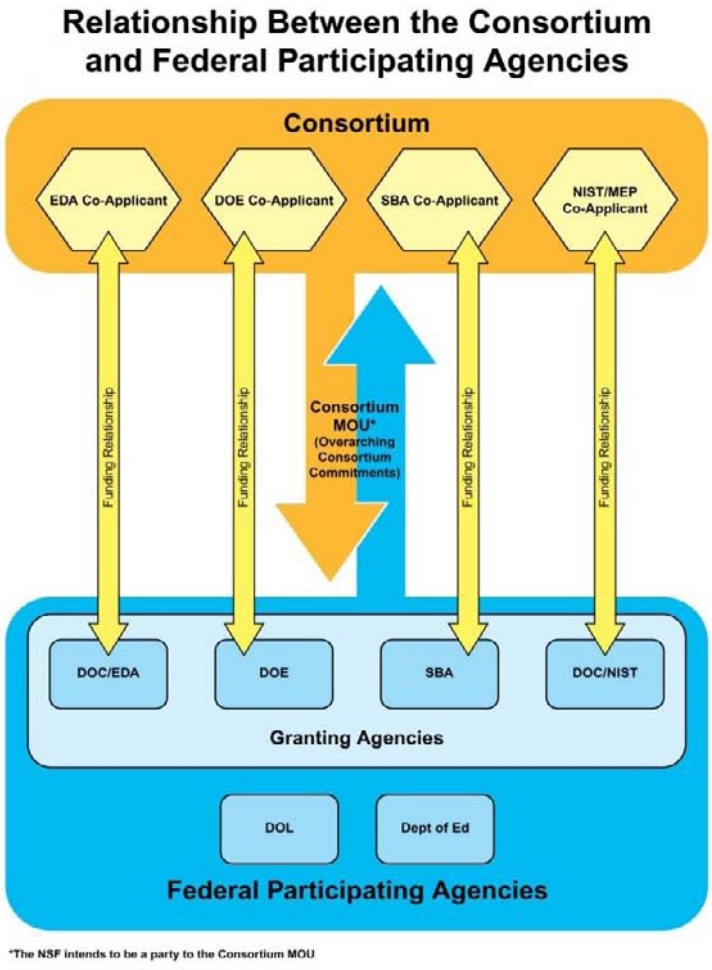
As described in Section V of this FOA, each Consortium will be permitted to submit only one Proposal. **Only one Consortium Proposal** will be selected for funding under this joint FOA. Each Consortium will submit a single Proposal, which shall include four Applications for funding and the Overarching Regional Innovation Cluster Project Narrative (see Section IV for details on this submission) that will explain proposed activities of the Consortium as a whole. The four Applications within the single Proposal from a Consortium shall be as follows: (1) An Application for DOE assistance (submitted by the DOE Co-applicant, which may include one of more entities eligible for DOE assistance); (2) an Application for EDA assistance (submitted by the EDA Co-applicant, which may include one or more entities eligible for EDA assistance); (3) an Application for NIST/MEP assistance (submitted by the NIST Co-applicant); and (4) an Application for SBA assistance (submitted by the SBA Co-applicant, which may include one or more entities for SBA assistance). The Co-applicants within any Consortium must demonstrate in their Proposal that they have entered into a written agreement to operate as a Consortium for at least as long a period as the term of the longest award made under this FOA (see Section IV for further details).

Although they will collaborate as a Consortium, the four Co-applicants will receive separate awards from the applicable federal agencies. The DOE Co-applicant on the winning Proposal will receive the DOE grant funds, the EDA Co-applicant on the winning Proposal will receive the EDA funds, the NIST Co-applicant on the winning Proposal will receive the NIST/MEP funds, and the SBA Co-applicant will receive the SBA funds. (Please see below for the pertinent definitions.)

In addition, DOL, ED, and NSF are committed to supporting collaboration between the Consortium and recipients of funding under complementary, existing programs at DOL, ED, and NSF. DOL encourages workforce investment boards to become E-RIC Partners that will actively participate in the fostering of the E-RIC and can leverage Workforce Investment Act and other appropriate funds to recruit, train and place workers in Good Jobs created within the E-RIC. ED encourages State eligible agencies, and local and regional secondary
and postsecondary educational agencies and institutions receiving funding under the

Carl D. Perkins Career and Technical Education Act of 2006 (Perkins Act) to act as E-RIC Partners and to support allowable career and technical education projects and activities that eliminate gaps between the supply and demand for workers in specialized fields within the E-RIC. ED will provide technical assistance as appropriate to help these E-RIC Partners determine how to facilitate the Consortium's objectives through the allowable use of funds under the E-RIC Partners' existing formula grants or subgrants. Finally, if existing NSF award recipients are also Co-applicants or E-RIC Partners of the winning Consortium, these NSF recipients may be eligible for supplemental funding from NSF.

Please see Section I for more information about the components of this funding opportunity, as well as Section III for detailed information about eligibility requirements.



- **Information Sessions:** The Participating Agencies will hold two information sessions for Consortia wishing to apply for this opportunity. The first will be a conference held in the Washington D.C. metro area in February 2010. This session will be available as a webcast for viewing on the E-RIC website. (See the E-RIC website at www.energy.gov/hubs/eric.htm for the exact time and location.). The second will be a

teleconference held in April 2010. Questions and answers from these sessions will be posted on the E-RIC website at www.energy.gov/hubs/eric.htm within ten (10) business days. Registration information will be posted on www.energy.gov/hubs/eric.htm .

- **Addresses and Designated Points of Contact**: All questions must be submitted via www.energy.gov/hubs/eric.htm .

Selection Notification: Subject to the availability of funding, the successful Consortium should expect to receive selection notification within sixty (60) to ninety (90) days from the closing date of this FOA. The anticipated notices of selection and initial awards will be made in accordance with Section V.G. of this FOA.

Definitions:

1. **Application**: Any Co-applicant's application for funding from one of the Granting Agencies announced through this FOA.

2. **Consortium:** the collective group of Co-applicants presenting a unified Proposal in response to this joint FOA.

3. **Consortium MOU**: The memorandum of understanding, or similar agreement, between the Consortium, the Participating Agencies, and NSF that will reflect long-term commitments of the Consortium to the emergence and successful growth of the E-RIC based on plans and other materials presented in the Consortium Proposal.

4. **Co-applicants (and each, a Co-applicant):** Collectively, each member of the Consortium that is applying for federal funding assistance, anticipated to include the DOE Co-applicant, the EDA Co-applicant, the SBA Co-applicant, and the NIST Co-applicant.

5. **Co-applicant Scope of Work:** The specific portion of the Proposal to be performed pursuant to a specific funding agreement by a specific Co-applicant.

6. **Demonstration and Deployment (D&D):** The *staged model of innovation* as a linear, sequential process beginning with R&D and proceeding to demonstration and finally commercialization is generally refined to capture some two-way or iterative interactions whereby learning in one phase is linked to the other phases. An even more *integrated model of innovation* merges the research, development, demonstration, and deployment (RDD&D) phases by designed interactions between each activity so that no work occurs in isolation. Nonetheless, it is useful to understand and define the stages separately.
   The Office of Management and Budget (OMB) does not provide federal definitions of demonstration and deployment in OMB Circular No. A–11. Federal expenditures in the conduct of demonstration activities are usually (but not always)

categorized as R&D, depending on the nature of the activities. Deployment activities are categorized as non-R&D.

- **Demonstration** activities test scalability and preliminary operating issues to help bring promising technologies closer to market in order to increase chances of adoption by manufacturers. Demonstration projects test new technologies in conditions that approximate real-world applications in order to gain economic and performance data that improve technologies and enhance their potential for commercialization. Demonstration is sometimes referred to as validation of technologies

- **Deployment** is market support that promotes the adoption of a new technology through greater visibility and familiarization. Even if the technological feasibility was proven during the demonstration phase, there may be a variety of barriers that make it difficult for the new technology to compete or gain acceptance in the market and thus achieve wide-scale adoption. Deployment activities that help support market penetration can help a new technology reach a tipping point into widespread commercialization. Deployment activities can take many forms, including education, marketing, communication, market research, policy and incentives, and other non-R&D market conditioning activities, as well as incentives for adoption.

1. **DOE Co-applicant (or Hub Co-applicant):** The entity or entities applying for direct funding from the Department of Energy under this FOA.

2. **EDA Co-applicant:** The entity or entities applying for direct funding from the Economic Development Administration under this FOA.

3. **Energy Regional Innovation Cluster (E-RIC)**: The geographically-bounded, active network of similar, synergistic or complementary organizations, which includes the selected Consortium (and, therefore, the Hub), engaged in or with the energy efficient buildings systems and design industry, with active channels for business transactions, communications, and dialogue, that share specialized infrastructure, labor markets, and services. The E-RIC may be located in a defined geographic region that crosses municipal, county, and other jurisdictional boundaries. The E-RIC should encompass local universities, government research centers, and other research and development (R&D) resources, which shall serve as catalysts of innovation and drivers of regional economic growth. The E-RIC should leverage the region's unique competitive strengths and seek to nurture networks for business financing, business-to-business sales, education, and workforce development. These networks will include the E-RIC Partners and strategic partnerships with similar institutions (some of whom may be located outside of the E-RIC's geographic region) to ensure that the full potential of the E-RIC is realized.

4. **E-RIC Partners:** The public and private entities (i.e., local and regional governments and quasi-public entities, venture capitalists, private banks, workforce

investment boards, institutions of higher education including community colleges, and other public and private agencies and institutions) that have submitted formal Letters of Commitment to collaborate with the Consortium to develop and expand the E-RIC. E-RIC Partners are entities other than the Co-applicants that will work with the Consortium to foster a vibrant E-RIC. E-RIC Partners are not required to be located within the E-RIC's geographic region.

5. **Energy Technologies:** The term *energy technology* refers to the means of locating, assessing, harvesting, transporting, processing, and transforming the primary energy forms found in nature (e.g., sunlight, biomass, crude petroleum, coal, uranium-bearing rocks) to yield either direct energy services (e.g., heat from fuel wood or coal) or secondary forms more convenient for human use (e.g., charcoal, gasoline, electricity). Also included under the heading of energy technology is the means of distributing secondary forms to their end users and the means of converting these forms to energy services (e.g., electricity to light and refrigeration, electricity and gasoline to motive power). A distinction is often made between *energy-supply technologies*, meaning those used to bring energy forms to a point of final use, and *energy end-use technologies*, meaning those applied at this point of use to convert an energy form to a service such as light or motive power.

6. **Good Jobs:** Jobs that increase workers' incomes; narrow wage and income inequality; provide safe and healthy workplaces, particularly in high-risk industries; comply with applicable laws governing wages and overtime pay; are open to all eligible job-seekers; and provide necessary skills and training to prepare workers for success in the high-growth and emerging careers that will result from the Energy Regional Innovation Cluster.

7. **Granting Agencies:** DOE**,** DOC's EDA and NIST, and SBA.

8. **Hub (**or **Energy-Efficient Building Systems Design Hub):** The DOE Co-applicant's fully-integrated, multidisciplinary RD&D program that will create practical, replicable strategies for reducing overall energy consumption in buildings.

9. **NIST Co-applicant:** The NIST/MEP Center applying for direct funding from NIST under this FOA. In conjunction with this FOA, NIST/MEP intends to make one award to an existing NIST/MEP Center. If the E-RIC Region involves coverage areas of more than one NIST/MEP Center, those NIST/MEP Centers should collaborate in developing the Application to NIST/MEP and designate one lead center in the NIST/MEP Application, so that the award shall be for a single NIST Co-applicant Scope of Work and shall be in an amount up to $500,000 per year in total.

10. **Participating Agencies:** Those members of the Interagency Regional Innovation Clusters Taskforce that are participating in the review and selection process described in Section V of this FOA (i.e., DOE, DOC/EDA, DOC/NIST, SBA, DOL, ED).

11. **Proposal**: The collective, unified proposal submitted by a particular Consortium in response to this FOA. A Proposal contains four applications reflecting a DOE Co-applicant's Application for DOE funding, an EDA Co-applicant's Application for EDA funding; an SBA Co-applicant's Application for SBA funding and a NIST Co-applicant's Application for NIST/MEP funding.

12. **Region:** An economic unit of human, natural, technological, capital or other resources, defined geographically. Geographic areas comprising a region need not be defined by political boundaries, but should constitute a cohesive area capable of undertaking self-sustained economic development.

13. **Research and Development (R&D):** Research includes basic and fundamental research that yields discoveries with potential applications to the improvement of energy technologies and applied research and development that is directed at the invention or improvement of specific energy technologies. Development is aimed at converting the fruits of fundamental and applied research into working prototypes of new or improved technologies.

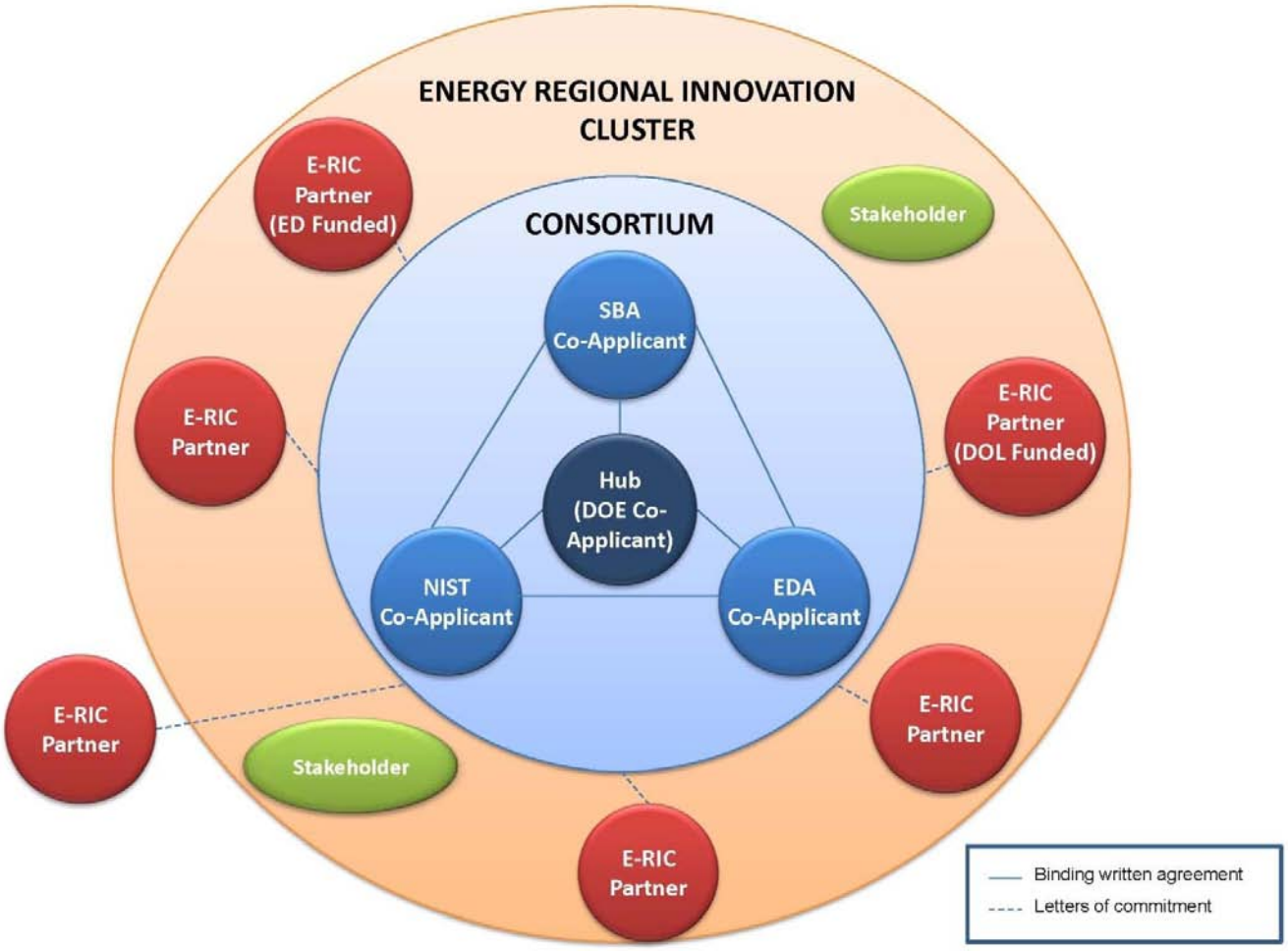
    The Office of Management and Budget (OMB) provides the following federal definitions of basic research, applied research, and development in OMB Circular No. A–11 (2006, Section 84, pp 8–9). Federal expenditures in the conduct of R&D are subcategorized by these three definitions. R&D facilities and major equipment are also reported by OMB as a separate subcategory.

    - **Basic research** is defined as systematic study directed toward fuller knowledge or understanding of the fundamental aspects of phenomena and of observable facts, without specific applications towards processes or products in mind. Basic research, however, may include activities with broad applications in mind.

    - **Applied research** is defined as systematic study to gain knowledge or understanding necessary to determine the means by which a recognized and specific need may be met.

    - **Development** is defined as systematic application of knowledge or understanding, directed toward the production of useful materials, devices, and systems or methods, including design, development, and improvement of prototypes and new processes to meet specific requirements.

14. **SBA Co-applicant:** The Small Business Development Center(s) applying for direct funding from the Small Business Administration under this FOA. In conjunction with this FOA, SBA intends to make one award to an existing Small Business Development Center (SBDC). If the E-RIC Region involves coverage areas of more than one SBDC, those SBDCs should collaborate in developing the Application to SBA and designate one lead center in the SBA Application, so that


ENERGY REGIONAL INNOVATION CLUSTER
CONSORTIUM
E-RIC Partner (ED Funded)
Stakeholder
SBA Co-Applicant
E-RIC Partner
E-RIC Partner (DOL Funded)
Hub (DOE Co-Applicant)
NIST Co-Applicant
EDA Co-Applicant
E-RIC Partner
E-RIC Partner
Stakeholder
E-RIC Partner
Binding written agreement
Letters of commitment

Examples of Participating Entities

DOE Co-Applicant (Hub)	EDA Co-Applicant	NIST Co-Applicant	SBA Co-Applicant
• National energy labs • Universities • Private industry labs	• State and local governments • Universities • Regional government coalitions • Nonprofits working with local governments • Tribes	• Pre-designated MEP Centers MEP centers may include: • Nonprofit organizations • Universities • Community colleges • State government organizations	• Pre-designated SBDCs SBDCs may include: • Universities • Nonprofit organizations

E-RIC Partners

(please see the FOA for more examples)

DOL-Funded E-RIC Partners	ED-Funded E-RIC Partners	All Other E-RIC Partners
• Workforce investment boards • One-stop career centers • Registered apprenticeship programs • Community-based organizations • Community colleges	• Community colleges and other postsecondary institutions • Career and technical colleges • Adult education centers • Secondary career and technical programs and schools	• Local, state, and regional government entities • Private sector entities • Nonprofit community organizations • Labor organizations

Stakeholders

• Neighborhood associations and resident community groups • Tenant advocacy groups • Community service organizations	• Local nonprofits and foundations • Local , regional, and state government entities • Community-based organizations	• Private sector (e.g., businesses, venture capitalists, business councils) • Labor organizations

FULL ANNOUNCEMENT TEXT

I. Funding Opportunity Description

A. Overview

The purpose of this FOA is to identify and support an emerging E-RIC that will accomplish the following objectives:

- Develop and demonstrate sustainable and efficient models for attaining national strategic objectives, with a focus on (i) developing, expanding, and commercializing innovative energy efficient building systems technologies, designs, and best practices for national and international distribution and (ii) reducing the carbon footprint of the United States;

- Create and retain Good Jobs;

- Eliminate gaps between the supply and demand for skilled workers in the E-RIC through training and education;

- Increase regional gross domestic product (GDP);

- Promote innovation in science and technology generally and, with respect to the Hub, promote energy efficient building systems, designs and best practices; and

- Enhance the economic, technological, and commercial competitiveness of the United States on the global stage.

The centerpiece of the E-RIC is the DOE Energy Efficient Building Systems Design Hub (Hub). The Hub will focus on research and development of highly efficient building components, systems, and models aimed at reducing energy use, minimizing net greenhouse gas emissions, and catalyzing an industry-wide shift to new technologies. The Hub will work within the Consortium and with the Consortium's E-RIC Partners, among others, to link various combinations of university, industry, national laboratory, non-profit organizations, and local, state, and regional governments, as appropriate, with business incubators and other business accelerators in order to create and/or expand a network of advanced energy technology companies, laboratories, and capabilities that promote economic development and the objectives specified above.

This joint FOA invites Proposals from Consortia that can demonstrate collaboration among their members, with their E-RIC Partners, and with federal government agencies to support the development and growth of an E-RIC. The E-RIC must operate within a defined geographic region that includes a geographically-bounded, active network of similar, synergistic or complementary organizations engaged in or with the energy efficient

buildings systems and design industry, with active channels for business transactions, communications, and dialogue, that share specialized infrastructure, labor markets and services, although such region may cross municipal, county, or other jurisdictional boundaries. The E-RIC must include the Hub and should encompass local universities, government research centers, and other research and development (R&D) resources, which shall serve as catalysts of innovation and drivers of regional economic growth. In addition, participants in the E-RIC may have strategic partnerships with entities outside of the geographic region. The E-RIC should leverage the region's unique competitive strengths and seek to nurture networks for business financing, business-to-business sales, education, and workforce development. These networks should work in concert with local governments, venture capitalists, private banks, workforce investment boards, non-profit organizations, institutions of higher education, including community colleges, and other public and private agencies and institutions.

Ideally, as the E-RIC expands, secondary and tertiary economic and job opportunities will emerge to support the E-RIC directly and indirectly, such as office suppliers, educators, financial services, and food services. As the regional economy affected by the E-RIC grows, additional service providers, such as law firms, business consulting firms, and health care providers, will be needed to cater to the new working communities. As part of the effort, educational and training programs will create pathways for workers in the regional economy to find and retain Good Jobs and provide the skilled workforce needed for the E-RIC to grow and prosper further.

As described in Section V of this FOA, **only one Proposal from a Consortium** will be selected for funding under this joint FOA. Each Consortium will submit **a single** Proposal, which shall contain **four** Applications for funding (one Application from each Co-applicant to the Granting Agency from which it seeks funding), as well as one Overarching RIC Narrative (see Section IV for details on this submission). The four Applications contained in a single Proposal from a Consortium shall be as follows: (1) An Application for DOE assistance (submitted by the DOE Co-applicant – which may include one of more entities eligible for DOE assistance); (2) an Application for EDA assistance (submitted by the EDA Co-applicant – which may include one or more entities eligible for EDA assistance); (3) an Application for NIST/MEP assistance (submitted by the NIST Co-applicant); and (4) an Application for SBA assistance (submitted by the SBA Co-applicant – which may include one or more entities for SBA assistance). The Co-applicants submitting the four Applications that comprise the Proposal shall enter into a written agreement to operate as a Consortium (see Section IV for further details).

Although they will collaborate as a Consortium, each of the four Co-applicants that submits the winning Proposal will receive a separate award from the Granting Agency to which it applied for funding (see diagram in the Executive Summary). In addition, DOL, ED, and NSF are committed to supporting linkages between the Consortium's efforts and complementary, existing programs at DOL, ED, and NSF. DOL encourages workforce investment boards to become E-RIC Partners that will actively participate in the fostering of the E-RIC and can leverage Workforce Investment Act and other appropriate funds to recruit, train, and place workers in Good Jobs created within the E-RIC. ED encourages

State-eligible agencies, and local and regional secondary and postsecondary educational agencies and institutions receiving funding under the Carl D. Perkins Career and Technical Education Act of 2006 (Perkins Act) to act as E-RIC Partners and to support allowable career and technical education projects and activities that eliminate gaps between the supply and demand for workers in specialized fields within the E-RIC. ED will provide technical assistance as appropriate to help these E-RIC Partners determine how to facilitate the Consortium's objectives through the allowable use of funds under the E-RIC Partners' existing formula grants or subgrants. Finally, if existing NSF award recipients are also Co-applicants or E-RIC Partners of the winning Consortium, these NSF recipients may be eligible for supplemental funding from NSF. (See Section I.F. for details on pertinent Labor, Education, and National Science Foundation programs.)

B. Description of DOE Energy Efficient Building Systems Design Hub Requirements and Research Focus

a. Background

The critical challenges that our Nation faces in the 21st Century to its energy, environmental, and economic security are urgent and deeply intertwined. The Department of Energy supports the President's goals of providing for our nation's energy security, growing our economy, and reducing greenhouse gas emissions through the creation of a new energy economy founded on significant changes in the ways we produce and consume energy. These challenges will not be met solely by incremental improvements to existing technologies.

Achieving these goals will require transformational technologies that provide clean, reliable, economic energy solutions that are sustainable in the long term. Orchestrating rapid, transformative changes to the energy system portfolio represents a technological challenge of historic scale. Success will require major national mobilization of basic and applied energy research capabilities, accompanied by commensurate investments in engineering and development necessary to accelerate the deployment of revolutionary energy technologies. Early and close coordination with the private sector to facilitate transition to deployment, a focus on highly collaborative fundamental research and technology development capabilities of peerless quality and significant scale on a specific technological challenge, and constant dialogue with the users of the technology are all essential.

The paths of scientific discovery and technological need to inform each other. Advances in basic sciences create entirely new technology possibilities; likewise, technology development efforts identify key roadblocks that require improved scientific understanding or wholly new approaches. Connecting fundamental research and technology development through forceful and scientifically astute management of an integrated team is essential to rapid achievements.

b. Summary

The Secretary of Energy has identified energy efficient buildings systems design as presenting one of the most critical challenges related to achieving national energy and climate goals; however, this challenge has proven resistant to solution by conventional R&D enterprise structures. In a new R&D structure modeled on DOE's successful Bioenergy Research Centers, the Hub will comprise a highly collaborative team, spanning multiple scientific, engineering, and, where appropriate, economics and public-policy disciplines. By bringing together top talent across the full spectrum of R&D performers – including universities, private industry, non-profits, and national laboratories – the Hub is expected to become a world-leading R&D center in energy efficient buildings systems design.

The Hub will seek to rapidly drive energy solutions to their fundamental limits. The Hub will support cross-disciplinary R&D focused on the barriers to transforming its energy technologies into commercially deployable materials, devices, and systems. The ultimate goal of the Hub will be to advance a highly promising area of energy science and technology to the point that the risk level will be low enough for industry to deploy solutions into the marketplace.

The initial award period is for five years. The Hub will be funded up to $22 million in FY 2010, with up to $10 million of these funds to be devoted to infrastructure start-up for the Hub, including building renovation (but no new construction), lease arrangements, equipment, and instrumentation. It is anticipated that the Hub will be funded at up to $25 million per year for Hub operations in the final four years (FY 2011 – FY 2014) of the initial award period, pending Congressional appropriations.

DOE will use external peer-review of Applications as detailed in this FOA to assist the agency in making its evaluation.

c. Development Requirements

Overview

The Hub will take a holistic, systems approach to science and technology and will act as an integrator of basic and applied research and development. The scientific problems to be addressed by the Hub are inherently interdisciplinary. The Hub will require personnel with varied skills and expertise in disciplines that may include physics, chemistry, materials science, biology, and engineering, among other possible fields.

In addition, it will be critical for the Hub‘s research team to understand in depth the potential roadblocks and bottlenecks that must be overcome in order to implement a sustainable and commercially viable technology. The Hub will need to combine exceptional skill and creativity in general energy technology research with cutting-edge expertise in the specific problems to be addressed, either by including researchers specializing in this field or developing strong partnerships and working relationships with the individuals and institutions, both governmental and nongovernmental, that have been engaged in research on these or related problems. The Hub is also expected to develop enabling technologies to facilitate and accelerate this research.

The Hub is expected to foster and encourage robust interaction with private industry to accelerate technological innovation and reduce the barriers to movement of new technologies to the marketplace. The Hub will support additional analysis and practical efforts aimed at understanding and achieving technology transfer and eventual large-scale commercialization and deployment of cost-effective technologies, including addressing the environmental, economic, and infrastructural dimensions of this challenge.

Infrastructure and Operation

Strategies for development of the Hub may include renovation of existing buildings and leasing buildings. The Hub will be funded at a total of $22 million in FY 2010 and up to $10 million of this total may be devoted to infrastructure start-up for the Hub. Allowable costs include those necessary to house the Hub (including a possible lease for the first five years of the project), to renovate laboratories as needed, and to purchase research equipment and instrumentation. No new construction (new buildings or additions to existing buildings) will be allowed in the Hub award.

The Hub may develop agreements with respect to access to major scientific instrumentation, including DOE user facilities, on an as-needed basis rather than as an integral component of the initial Hub request and budget since funding at DOE user facilities is determined and administered separately from this announcement.

Technical Capabilities and Instrumentation

The Hub will need to include all technical capabilities the DOE Co-applicant considers necessary to implement their proposed approach, including experimental and

computational tools. In order to carry out the proposed research program, the Hub will be expected to develop core capabilities in or have access to the full range of synthetic, characterization, manipulation, and computational capabilities requisite for the development of energy efficient buildings systems. A portion of the research at the Hub may be devoted to developing new technological capabilities for overcoming challenges that cannot be addressed with currently available technologies and instrumentation. Research capabilities and resources to be accessed outside of the Hub should be clearly identified.

Management

DOE recognizes that effective management of scientific facilities, programs, and projects is critical to the success of research. The Hub must have well-designed management plans for the establishment of the Hub as well as for Hub operations. Plans should include provisions for coordination with other basic and applied research and development activities supported by DOE. The Hub's management structure must enable empowered scientist-managers to execute quick decisions to shape the course of research. Management of the Hub's initial establishment, research, technology development, resources (both personnel and physical resources), and scientific data are critical to the success of the Hub's and DOE's missions. In addition, each Hub must have an advisory board that includes industry (private for-profit and non-profit) participation.

Key elements for the successful management of a Hub include:

- A clear lead institution with strong scientific leadership that provides a central location for the Hub;

- To the extent that there is a broader geographic distribution of the Hub participants, a clear commitment to the use of state-of-the-art technology and frequent virtual meetings to enable meaningful long distance collaboration;

- Most importantly, a clear organization and management plan for achieving the collaborative and synergistic goals of a Hub and "infusing" a culture of empowered central research management throughout the Hub.

The Hub will be subject to regular and rigorous peer review of their scientific program and their management structure, policies, and practices. Within DOE, there will be an Energy Innovation Hub Oversight Board that will periodically review the progress of the Hub. This Hub will be managed by DOE's Office of Energy Efficiency and Renewable Energy, which will be responsible for holding the Hub accountable and conducting annual site visit reviews of the Hub. The Hub Oversight Board will consist of the Secretary and/or his designee, the Under Secretaries for Energy and Science, and their senior scientific/technical advisors.

Staffing

The research program of the Hub should be led by internationally-recognized scientists, engineers, economists, and social and policy scholars. A Hub may be composed of diverse institutions including national laboratories, academia and non-profit research institutes, and the private sector. In assembling its research team, the Hub should strive to achieve the synergies that arise when individuals with prominent expertise in different methodologies, technologies, disciplines, and areas of content knowledge tackle a problem together, overcoming impasses by attacking the issue from fresh angles and discovering novel solutions.

Quality Assurance and Information Management

The DOE Co-applicant will be expected to have sound quality assurance plans for all aspects of the Hub proposed programs. National and international standards for quality assurance for the different categories of experimentation to be carried out in the Hub should be identified and plans for qualifying for International Organization for Standardization (ISO) and other certifications should be described in the application as appropriate.

Deliverables / Benchmarks

The work of the Hub will range from basic research to engineering development to an eventual transition to industrial development. The Hub will support cross-disciplinary research and development focused on the barriers to transforming energy technologies into commercially deployable materials, devices, and systems. The Hub will advance highly promising areas of energy science and technology from their early stages of research to the point that the risk level will be low enough for industry to deploy them into the marketplace. Therefore, all of the Energy Innovation Hubs are expected to have deliverables or benchmarks that help focus the objectives of the research to the proposed short, intermediate, and long term goals they are addressing.

Training and Outreach

The Hub should include educational/training programs for students, post-doctoral fellows, and scientists. On-site scientific staff as well as visiting researchers should be included in proposed, regularly available programs. Outreach activities in which the Hub interacts with the public in educational activities are also encouraged, but not required.

Research Integration and Coordination

The DOE Co-applicant should describe plans for integrating the results of their fundamental research and technology development with other basic and applied research and development activities supported by DOE. The Hub may require research and technology capabilities that are beyond the scope of the Hub‘s skills and resources; if so, the application should demonstrate plans for obtaining these additional capabilities, including collaboration with outside scientists. In the course of pursuing a focused R&D plan for the Hub, it is likely (and desirable) that new avenues of basic and applied R&D

will be discovered. To the extent that such new opportunities diverge from the Hubs' primary mission, they should be "spun out" as potential candidates for support from other programs within or outside of DOE.

Collaboration with Industry

The Hub is expected to foster and encourage robust interaction with private industry beyond the scope of R&D directly funded through this FOA. The interactions should aim at accelerating technological innovation and reducing the barriers to movement of new technologies to the marketplace. Examples of this type of activity include (but are not limited to) industry-sponsored research partnerships, research personnel exchanges, industry-sponsored post-doctoral or graduate fellowships, and industry-sponsored seminars and conferences. DOE Co-applicants are encouraged to provide information regarding their plans to create a research environment that promotes collaboration with industry to enable organizational cognizance of industry readiness, technology transfer, and eventual market penetration.

Other Considerations

While capital investment in instrumentation and start-up needs are expected as part of the Hub award, usage and leverage of existing facilities, including DOE's user facilities, is encouraged. DOE user facilities, including light sources, neutron scattering sources, nanoscale science research centers, advanced computational facilities, and other specialized user facilities are considered foundational resources for a vast range of the scientific user community. As such, they are expected to serve as independent resources for the Hub funded under this announcement. Funding for activities at these DOE user facilities is determined and administered separately from this announcement and should not be included in the budget requests of Applications to this announcement.

d. Research Focus: Energy Efficient Building System Design

Buildings are responsible for over 70% of United States electricity consumption, 40% of total U.S. energy consumption, and an equivalent fraction of carbon emissions. However, the development and deployment of energy efficient technology in buildings lags behind that of the transportation and industrial sectors. The reasons for this discrepancy include the wide diversity of energy-consuming and energy-saving technologies in buildings, the complexity of the economic and regulatory environment in which buildings are built and retrofitted, the fragmentation and diversity of the building industry, the misalignment of incentives between various stakeholders, and the intimate connection between human behavior and building energy consumption.

These barriers to improving building energy efficiency interact in complex ways, and without coordinated efforts to address all of them, progress in reducing overall building energy consumption will be slow and inconsistent. This FOA solicits proposals for an Energy-Efficient Building Systems Design Hub that will pursue a research, development, and demonstration (RD&D) program that addresses two areas: (1) systems integration of

energy technologies in buildings, and (2) economic, policy, and behavioral factors influencing building energy consumption.

DOE envisions that its Energy Innovation Hubs will be composed of a large set of investigators spanning science, engineering, and policy disciplines focused on a single critical national need. Each Energy Innovation Hub will address this critical national need by orchestrating an integrated multidisciplinary systems approach to overcoming critical technological barriers to transformative advances in energy technology.[1] DOE intends for the Hub funded through this joint FOA to support a fully integrated RD&D program spanning a range of technical and social science disciplines, with the explicit mandate to develop and demonstrate practical, replicable strategies for reducing overall energy consumption in buildings, both domestic and foreign. Addressing the complexity of energy use in the built environment requires a deeply multidisciplinary approach, in which physical scientists, engineers, behavioral scientists, economists, and regulatory experts work in close collaboration to develop integrated solutions. The Hub supported by these funds will serve as a center of analysis and problem-solving for all aspects of building energy use, without the constraints of traditional disciplinary boundaries.

Systems integration of building energy technologies

The energy consumption of buildings involves a wide range of different technologies. Space conditioning systems (HVAC) deliver heating, cooling, and air circulation/cleansing; lighting systems deliver illumination; water heating and sanitation systems deliver and dispose of water; electrical and gas systems deliver power and fuel; elevators and escalators provide mobility; integrated renewable systems generate power; and envelope systems (windows, walls, and roofing) seal the conditioned environment from the outside. In addition to these installed systems, appliances, electronics and other miscellaneous devices form the plug load of buildings, which includes a wide variety of technologies.

In most buildings, these diverse systems operate largely independently. Space conditioning systems, lacking coordinated controls, can simultaneously heat and cool building air, dramatically increasing energy use. Ventilation systems remove and dump moisture from flue gas and appliances, while separate humidity-control systems introduce water from outside sources. Appliances and electronics operate on entirely self-determined schedules, drawing power even when not performing functions; lighting, HVAC, elevators and other systems often operate at full performance when there are few or no building occupants in the vicinity. Even in buildings that have some degree of coordinated operations, systems are often not commissioned or maintained correctly, which can reduce or eliminate the efficiency benefits that these systems otherwise could deliver.

Enhancing the integration of these diverse systems, expanding their coordinated operation through distributed sensor and control networks, and ensuring they are maintained in optimal working condition, can lead to important efficiency gains. Coordinated operations help prevent conflicting simultaneous operation of heating and cooling systems and unnecessary space conditioning, lighting and mobility services. They also enable

[1] See http://www.energy.gov/hubs/qanda.htm .

maximizing use of natural or ambient conditions and processes for lighting and indoor environmental control, improved predictive maintenance schedules, site-wide analysis of energy-use trends, comparison between multiple buildings, and other operational efficiency improvements that influence energy use as well as affect overall operational costs. In addition, a robust mechanism for maintaining integrated systems so that they operate within appropriate parameters can help ensure that these systems achieve their efficiency potential.

Some possible areas for systems integration and coordination efforts include:

- *Developing a systems approach to whole-building integration*. There is a need for better methods to integrate measurement, simulation, feedback, and controls in real time to optimize building performance. This improved integration into an overall "building operating system" would facilitate automatic fault diagnostics and the detection and remediation of system-level inefficiencies, while delivering optimal building services and indoor environmental conditions. Such approaches could include:

    - Intelligent zoned heating and cooling. Appropriate sensor systems could help track and even anticipate the movement of people into different building zones and modify temperatures accordingly. Cooling and heating systems that are readily scalable to small sizes while maintaining high efficiencies could provide zonal temperature control directly, without the losses associated with ducts in unconditioned spaces and the complications of mechanical duct control.

    - Improved air economizers. Using outside air to provide cooling for data centers and other building areas can significantly reduce energy use. However, to be effective they must be carefully monitored and closely integrated with building HVAC system operation.

    - Energy scavenging/waste heat recovery. Scavenging waste heat as a generation resource can reduce demand for overall building energy consumption and potentially serve as a continuous power source for distributed modular sensor systems.

    - Improved distribution systems. New methods for distributing heating/cooling throughout a building, and between buildings (including district heating systems) could lead to important efficiency improvements over traditional ductwork.

    - Integrated space heating/cooling and water heating systems.

    - Integrated day lighting/lighting/active fenestration. Coordinating building lighting systems with variable windows and skylights can lead to efficiency

gains while delivering constant, high-quality illumination to building occupants.

- Improved integration with the electrical grid. Enhancing the ability of buildings to exchange information with the grid could lead to important efficiency gains. By working within the framework of existing NIST and DOE smart grid efforts, this approach could include efforts towards maximizing the use of distributed energy resources by enabling bi-directional flow to and from building energy storage systems and optimizing the performance of building devices and controllers through external data inputs.

- *Pursuing advances in basic building science and technology*. Core technology advances in building energy systems are needed to underpin system integration at the whole-building level. These needs include efforts in basic materials science to develop improved heating/cooling systems, membranes, working fluids, heat exchangers, insulation, and other materials; efforts in developing cheap and robust suites of sensors for monitoring building conditions; and advanced simulation techniques for full computational tracking and analysis of heat, liquids, gases and power throughout buildings.

- *Involving Stakeholders in the Building Lifecycle Planning and Implementation Process*. The current approaches to building design, construction, commissioning and operation are sequential and segregated. There is a need for tools that can integrate these steps into a more coherent process and enable it to be iterative. These tools must take advantage of advances in communications technology to enable stakeholders involved in all phases of the building lifecycle to interact and cooperate. For such tools, it is important that the impact of changes to the building design can be understood at the system level throughout the lifecycle of a building. These tools should also enable an optimal transition between the design, construction, commissioning and operations phases, including the appropriate transfer and recording of information to allow the development of a data-rich, full-lifecycle building history.

The Hub will explore these or similar issues of systems integration, coordination, and maintenance; develop new approaches to the problem; and demonstrate them in actual operation in a representative sample of existing buildings. The demonstrations will include full, publicly available documentation of the technical approach, including detailed descriptions of the technologies involved, the release of all software source code, a full accounting of costs, and utility-bill-verified data on energy savings. The Hub will also develop best-practice guidelines for systems integration, coordination, and maintenance based on these demonstrations and other information.

Economic, policy, and behavioral factors influencing building energy consumption

The complicated economic and regulatory environment in which buildings are constructed, operated, and renovated/retrofitted often creates disincentives to the installation or adoption

of high-efficiency systems. On the regulatory front, building codes—including energy, electrical, and fire safety—are generally set at the state and local level. These can vary significantly between jurisdictions and do not always incorporate or allow the most advanced energy efficient technologies. This complexity, particularly the uncertainty about possible conflicts with mandatory code requirements, can lead owners and builders to opt for more conventional, less efficient systems.

Additionally, the process for ensuring that a building complies with building code requirements considers only the designed or predicted energy performance of the building, and not its actual measured performance. When designed performance is compared with measured performance, the data suggest that few buildings operate according to their designed levels of efficiency. Commissioning, which can improve building energy performance to bring it up to the designed level of efficiency, generally loses its effectiveness within a few years, as buildings drift away from their optimal performance parameters.

Reliable data and information about the economics of energy efficient building systems—especially data showing proven savings from previous energy retrofits of similar buildings--are often unavailable to owners, operators, and builders. This lack of information leads to uncertainty and confusion, and can cause owners and builders to forego the installation of efficiency improvements, leading them to opt instead for less efficient alternatives.

While technology advances can improve the efficiency of building operations, the behavior of a building‘s occupants plays an enormous role in the overall energy usage and performance of that building. Occupants often do not understand the operation of lighting, space conditioning and other systems, and consequently set controls to unnecessarily inefficient levels, or defeat sensor/control systems out of frustration because of opaque operating rules. Occupants also are rarely given feedback on the energy consequences of their decisions on the efficiency of the building, resulting in incorrect or poorly calibrated understanding of the impact of their actions. This can result in the ―rebound effect,” in which behavioral changes erase part of the expected efficiency gains from newly installed efficient systems or, perversely, result in greater energy use.

Finally, one additional key challenge is the fragmentation of the buildings community and misalignment of stakeholder incentives. During the design, construction, and commissioning process, targets to reduce energy consumption and align incentives for the various communities involved (owners, architects, engineers, contractors, component suppliers, etc.) are not in place. Different incentives for building owners and building users also contribute to the lack of coordinated and focused efforts to reduce energy consumption.

The Hub will explore economic, policy, and behavioral factors that affect building energy consumption, as well as innovations that can create and align incentives for all building stakeholders to work towards reduced energy consumption in buildings. Some possible areas for these efforts include:

- Development and analysis of innovations in financial instruments, valuations, and performance-based compensation.
- Development and analysis of new approaches to building code development, code enforcement and monitoring, and training of building code inspectors.

- Collection and analysis of information on the effect of regulatory environments on building energy efficiency and advanced energy systems.

- Compilation and analysis of data on proven energy and cost savings from energy-efficiency improvements in a wide variety of buildings.

- Ongoing tracking of regulatory changes and technology advances that impact the costs and performance of building energy systems.

- Research on energy use behavior in buildings, including the decision-making process of building occupants and points of failure in communicating energy use issues to occupants.

- Research on how building occupants, operators and owners understand and make use of energy information, including the potential role of innovative technologies to enable better monitoring of energy use, reduce the information gap about energy use and costs, and promote energy-saving practices.

C. Description of DOC - EDA Assistance Requirements

EDA's mission is to catalyze and foster regional economic development. EDA concentrates its resources on building a new foundation for sustainable economic growth. This foundation builds upon two key economic drivers – innovation and regional collaboration. Innovation puts ideas into action by developing and commercializing new products, services, and technologies for sale in the regional, national, and global marketplace. Regional collaboration requires cooperation across city, county, and even state lines; cross-functional collaboration among government agencies; and collaboration among the private, non-profit, and public sector. EDA funds approaches to economic development that break down barriers to collaboration and that support local and regional efforts to spur economic growth, create jobs, and enhance quality of life. Specifically, EDA strives to support a portfolio of investments that:

- Promote regional development;

- Accelerate innovation, technology transfer, and entrepreneurship to create or expand high-impact, fast-growth businesses;

- Attract private and non-profit capital;

- Create and retain good jobs and increase regional per capita income;

- Foster a globally competitive workforce;
- Increase exports of U.S. products and services; and
- Leverage complementary investments by other federal, state and local entities.

Finally, EDA encourages project proposals that engage the diverse populations of America, including the most disadvantaged and historically underrepresented, to contribute to and reap the benefits of these policies.

EDA's Public Works and Economic Development Program supports the construction or rehabilitation of essential public infrastructure and facilities necessary to generate or retain private sector jobs and investments, attract private sector capital, and promote regional competitiveness, innovation, and entrepreneurship, including investments that expand and upgrade infrastructure to attract new industry, support technology-led development, accelerate new business development, and enhance the ability of regions to capitalize on opportunities presented by free trade. For the purposes of this FOA, Public Works and Economic Development Program funds may be used to construct or upgrade infrastructure to fill a critical need in the E-RIC, including but not limited to a business incubator or network of business incubators; a workforce training facility; laboratory space or other applied research facilities; or publicly-owned infrastructure such as water, sewer, broadband, or rail needed to support manufacturing operations in the E-RIC. EDA encourages the Consortia to consider new, energy-efficient and environmentally beneficial ways of constructing infrastructure, including use of natural vegetation for storm water retention and sewage filtration, green roofs, and on-site water recycling.

EDA's Economic Adjustment Assistance (EAA) Program provides a wide range of technical, planning, and public works and infrastructure assistance in regions experiencing severe, adverse economic changes that may occur suddenly or over time. This program is designed to respond flexibly to pressing economic recovery issues and is well suited to help address challenges faced by U.S. communities and regions. EAA funds may be used for strategic planning and technical assistance, physical infrastructure, or revolving loan funds. For the purposes of this FOA, some illustrations of how Economic Adjustment Assistance funds may be used are:

a. Fund a strategic planning/coordinating body to ensure coordination of E-RIC initiatives related to workforce development, education, infrastructure, regional planning, business development and expansion, business networking, technological research and commercialization, and marketing;

b. Review, update and revise the E-RIC region's Comprehensive Economic Development Strategy(ies) (CEDS) to ensure that all CEDS and other regional planning documents applicable to the E-RIC's region are coordinated, integrated, and reflect the activities of the E-RIC;

c. Fund planning or feasibility studies pertaining to specific E-RIC initiatives under consideration;

d. Fund market or industry research analysis related to the E-RIC;

e. Develop and provide training to state and local officials, members of the strategic planning/coordinating body, private industry representatives, scientists and researchers and others pertaining to best practices in regional innovation cluster development, growth, implementation and management; and

f. Construct or upgrade infrastructure to fill a need in the E-RIC.

Both the Public Works and Economic Development Program and the Economic Adjustment Assistance Program have specific eligibility requirements. (Please see Section III.B. for further information.)

D. Description of DOC – NIST/MEP Assistance Requirements

The objective of the NIST/MEP program is to enhance productivity and technological performance by strengthening the global competitiveness of U.S.-based manufacturing firms. In support of this objective, NIST/MEP provides funding to over 390 manufacturing extension centers and field offices across the United States and Puerto Rico. NIST/MEP Centers provide manufacturing extension services required by manufacturers in their service region by utilizing the most cost effective, local, leveraged resources for those services. NIST/MEP Center specialists provide an array of services to companies, from initial assessments prioritizing opportunities for improvement, to implementation projects guiding companies through process improvements, productivity increases, and growth. NIST/MEP Centers provide companies with access to training resources as well as specific project assistance. Some engagements are short-term classes or basic projects. Other companies engage in multiple projects with their local field specialist, since one improvement project often leads to several others. Centers provide services directly through their field staff, and also engage the resources of local or national third-party specialists. In those cases, the center provides a critical marketing service by reaching out to companies and educating them about available services of which they may not yet be aware. A NIST/MEP Center locator is available at http://patapsco.nist.gov/NIST/MEP/centers-near-you/index.htm .

Pursuant to this joint FOA, NIST/MEP seeks to award one cooperative agreement to an existing NIST/MEP Center to enable that center to develop and operate a Regional Innovation Partnership program. This program will support the additional coordination, planning, and implementation of the cross-functional activities required to support the formation and expansion of firms in the E-RIC. This funding will support meetings with, and outreach to, other economic development organizations, as well as manufacturing, technology, and other supporting businesses. This funding will also leverage mechanisms

to assist firms with developing and marketing energy efficient products, as well as integrating energy efficient processes into their operations.

E. Description of Small Business Administration Assistance Requirements

Pursuant to this joint FOA, SBA seeks to award a cooperative agreement to an existing Small Business Development Center[2] (SBDC) that will enable the SBDC to assist current and prospective owners of small business concerns by:

- Conducting training and educational activities directly related to energy efficiency and providing access to information and resources regarding energy efficiency practices, particularly as relates to green buildings and related technology;

- Evaluating energy efficiency options and opportunities to design or construct high performance green buildings;

- Evaluating options to supplement energy generated from conventional fossil fuel resources with energy generated from renewable sources, such as solar and wind;

- Assisting small business concerns with initiatives to reduce waste and emissions, reduce the use of hazardous materials, and adjust their materials, processes, products, and services to improve their environmental performance; and

- Promoting the development and commercialization of clean technology and renewable energy products, goods, services, and processes through technology assessments; protection and commercialization of intellectual property; strategic alliances; business model development; assistance with attracting investors and other sources of capital; and leveraging the Small Business Innovation Research program under § 9 of the Small Business Act (15 U.S.C. § 638).

F. Description of Other Federal Investments Related to this Award

Although the Department of Labor (DOL), the Department of Education (ED), and the National Science Foundation (NSF) are not making discretionary grant or other funds available as part of this FOA, these agencies are committed to supporting collaboration between the Consortium and recipients of funding under complementary existing programs administered by these federal agencies.

The Department of Labor encourages the public workforce system to be a partner in the E-RIC. Although additional workforce investment resources are not being offered pursuant to this joint FOA, the E-RIC will create many opportunities for workers to find and retain

[2] More than one SBDC may apply for funding only in the event that the E-RIC spans more than one SBDC coverage area.

good jobs in the energy efficient buildings sector. Workforce Investment Boards and One-Stop Career Centers, in partnership with educational institutions in the region, must play a critical role in this effort by developing the skilled workforce needed for the cluster to grow and prosper. This role would include identifying, assessing, and referring candidates to training; providing Workforce Investment Act or other appropriate resources for workers to participate in this training; connecting workers to pre-apprenticeship and Registered Apprenticeship programs; working with employers to develop customized training programs that support the workforce needs of the E-RIC; connecting workers with job opportunities in the cluster; and providing supportive services for qualified individuals.

For purposes of this FOA, and to fully utilize the potential of funding under the Carl D. Perkins Career and Technical Education Act of 2006 (Perkins Act), Co-applicants must look for opportunities to partner with local and regional secondary and postsecondary educational agencies and institutions receiving Perkins funds to support career and technical education programs leading to training targeted by the particular Co-applicant‘s proposal. The Perkins Act is the Department of Education‘s largest formula grant program for secondary and postsecondary career and technical education, providing approximately $1.3 billion dollars annually to states. The Perkins Act supports challenging academic and technical standards so that all students will be prepared for high-skill, high-wage, or high-demand occupations in current or emerging professions. Programs of Study, as described in section 122(c)(1)(A) of the Perkins Act, incorporate secondary education and postsecondary education elements; include coherent and rigorous content aligned with challenging academic standards and relevant career and technical content in a coordinated, non-duplicative progression of courses that align secondary education with postsecondary education to adequately prepare students to succeed in postsecondary education; may include the opportunity for secondary education students to participate in dual or concurrent enrollment programs or other ways to acquire postsecondary education credits; and lead to an industry-recognized credential or certificate at the postsecondary level, or an associate or baccalaureate degree.

If existing NSF award recipients are also Co-applicants or E-RIC Partners of the winning Consortium, NSF will be pleased to consider these recipients for supplemental funding in pertinent NSF competitive award programs. NSF funds research and education in most fields of science and engineering through grants and cooperative agreements to colleges, universities, K-12 school systems, businesses, informal science organizations, and other research organizations throughout the U.S. NSF supports research in renewable energy and energy efficiency through existing programs, which can be accessed at the NSF website, www.nsf.gov . NSF also supports energy-related research through the Emerging Frontiers in Research and Innovation (EFRI) program, the Engineering Research Centers (ERC) program, the Industry/University Cooperative Research Centers (IUCRC) program, and Small Business Innovation and Research (SBIR) programs. Proposals submitted to NSF will be reviewed in accordance with the current (January 2010) NSF Proposal and Award Policies and Procedures Guide, found at www.nsf.gov/pubs/policydocs/pappguide/nsf10_1/nsf10_1.pdf . In particular, Section III-A of the Grant Proposal Guide (NSF 10-01) describes the two NSF Review Criteria, Intellectual Merit and Broader Impacts.

G. Program Authority

The statutory authority for the DOE Hub may be found in Public Law 95-91, U.S. Department of Energy Organization Act; Public Law 109-58, Energy Policy Act of 2005; Public Law 111-85, Energy and Water Development and Related Agencies Appropriations Act, 2010. The implementing regulations are found at U.S. Department of Energy Financial Assistance Rules, codified at 10 C.F.R. 600.

The statutory authorities for EDA's Public Works and Economic Development Program and EDA's Economic Adjustment Assistance Program are sections 201 (42 U.S.C. § 3141) and 209 (42 U.S.C. § 3149) of the Public Works and Economic Development Act of 1965, as amended (42 U.S.C. § 3121 *et seq*.) (PWEDA). Unless otherwise provided in this FOA, applicant eligibility, application procedures, evaluation criteria, selection procedures, and other requirements for all programs are set forth in EDA's regulations (codified at 13 C.F.R. chapter III) and the EDA Co-applicant must address these requirements. EDA's regulations and PWEDA are available at www.eda.gov/InvestmentsGrants/Lawsreg.xml . Please note that EDA funds may not be used directly or indirectly to reimburse any attorneys' or consultants' fees incurred in connection with obtaining investment assistance under this competitive solicitation. (For more information, please see 13 C.F.R. § 302.10.)

The statutory authority for NIST's Hollings Manufacturing Extension Partnership Program is set forth in 15 U.S.C. § 278k.

The Statutory Authority for the SBA assistance offered is the Energy Independence and Security Act of 2007, Public Law 110-140, Title XII, § 1203(c); 13 C.F.R. Part 130.

II. Award Information

Because each Granting Agency will be making a separate award, the specifics regarding award information are provided for each Granting Agency's funding.

A. Funding Availability, Period of Performance, and Type of Award Instrument for the DOE-Funded Hub

DOE anticipates awarding a cooperative agreement or field work authorization under this FOA. A DOE field work authorization will be awarded to a successful DOE/NNSA Federally Funded Research and Development Center (FFRDC). A cooperative agreement will be awarded to any other successful entity including, but not limited to, universities, non-profit organizations, and for-profit organizations.

If determined appropriate, DOE will consider awarding Technology Investment Agreements (TIAs) to a non-FFRDC awardee. TIAs, governed by 10 Part C.F.R. 603, are assistance instruments that DOE can use to increase involvement of commercial entities in research, development, and demonstration programs. DOE can award a TIA as a cooperative agreement or as an assistance transaction other than a cooperative agreement.

In both cases, DOE has greater flexibility in tailoring the terms and conditions of the TIA, which is not subject to all of the requirements of 10 C.F.R. Part 600. Agreement terms are negotiable in areas such as audits and intellectual property rights that may cause concern for commercial firms that usually do not contract with the Government. A non-FFRDC DOE Co-applicant may request a TIA if it believes it will be beneficial to the R&D objectives of the program. After a DOE Co-applicant is selected for award, the Contracting Officer will determine if awarding a TIA would provide benefits to the program that would not likely be realized under another type of assistance award. As described below, DOE will be more amenable to awarding a TIA in support of a proposal from a DOE Co-applicant teaming arrangement that includes cost sharing with the private sector. Such a teaming arrangement could include a DOE/NNSA FFRDC, other Federal agency, or its FFRDC. If the DOE/NNSA FFRDC contractor is a part of a DOE Co-applicant teaming arrangement, the value of, and funding for, the DOE/NNSA FFRDC contractor portion of the work will be made through the work-for-others administrative procedures. Funding for another Federal agency or its FFRDC would be through an interagency agreement under the Economy Act or other statutory authority. Other appropriate contractual accommodations ,such as those involving intellectual property, may be made through the funds in agreement to facilitate the FFRDC‘s participation in the teaming arrangement. If a TIA is awarded, certain types of information described in 10 C.F.R. §603.420(b) are exempt from disclosure under the Freedom of Information Act for five years after DOE receives the information.

DOE anticipates making one award under this announcement. This Hub will be funded at up to $22,000,000 in the first year of the award, with up to $10,000,000 to be used in the first year for the establishment of Hub infrastructure, including building renovation (but no new construction), lease arrangements, equipment, and instrumentation. This Hub will be funded at up to $25,000,000 per year in years 2-5 of the initial award period, pending Congressional appropriations. The maximum amount for an individual award made under this announcement is $122,000,000. There is no minimum amount for an individual award made under this announcement.

DOE will accept only new applications under this announcement.

B. Funding Availability, Period of Performance, and Type of Award Instrument for EDA Assistance

In conjunction with this joint FOA, EDA may make an award funded through (i) its Public Works and Economic Development Program, in an amount up to $3 million, and (ii) its Economic Adjustment Assistance Program, in an amount up to $2 million. There is no minimum funding amount, as the amount depends on the EDA Co-applicant‘s Scope of Work.

The period of performance for the EDA award will depend on the EDA Co-applicant‘s Scope of Work, but may not exceed five (5) years. EDA anticipates funding a single project period with the initial award. However, EDA retains the discretion to fund an initial funding period of one year with the option of renewal for two additional periods.

Funding beyond the initial year is dependent upon satisfactory performance and satisfactory progress in achieving milestones and program goals set forth in the EDA Co-applicant Scope of Work, as determined by EDA and expressed in written notice.

The funding instrument shall be a discretionary grant or cooperative agreement.

The funding periods and funding amounts referenced in this competitive solicitation are subject to the availability of funds at the time of award. The Department of Commerce and EDA will not be held responsible for Application preparation costs if the Public Works and Economic Development Program and/or the Economic Adjustment Assistance Program fail to receive funding or are cancelled because of agency priorities. Publication of this FOA does not obligate the Department of Commerce or EDA to award any specific grant or cooperative agreement or to obligate all or any part of available funds.

C. Funding Availability, Period of Performance, and Type of Award Instrument for NIST/MEP Assistance

In conjunction with this joint FOA, NIST/MEP may make up to one award to an existing NIST-funded Hollings Manufacturing Extension Partnership (NIST/MEP) Center. The minimum award amount is $300,000 per year, and the maximum award amount is $500,000 per year; the actual amount shall be determined by NIST/MEP based on the NIST Co-applicant Scope of Work proposed. If the E-RIC‘s region involves coverage areas of more than one MEP center, those centers should collaborate in planning efforts and designate one lead center, so that the award shall be for a single NIST Co-applicant Scope of Work and shall range from $300,000 to $500,000 per year.

The period of performance shall be one year, but the award may be renewed for up to two additional years. Funding beyond the initial year is dependent upon the availability of funds, satisfactory performance, and satisfactory progress in achieving milestones and program goals set forth in the NIST Co-applicant Scope of Work, as determined by NIST/MEP and expressed in written notice.

The funding instrument shall be a cooperative agreement.

The funding periods and funding amounts referenced in this competitive solicitation are subject to the availability of funds at the time of award. Publication of this FOA does not obligate the Department of Commerce or NIST/MEP to award any specific cooperative agreement or to obligate all or any part of available funds.

D. Funding Availability, Period of Performance, and Type of Award Instrument for SBA Assistance

In conjunction with this joint FOA, SBA may make one award to an existing Small Business Development Center (SBDC). If the E-RIC's region involves coverage areas of more than one SBDC, those centers should collaborate in planning efforts and designate one lead center, so that the award shall be for a single SBA Co-applicant Scope of Work and shall range from $100,000 to $300,000 per year.

The SBA Award will be made for a base project period of twelve (12) months with three, twelve-month option periods. Option periods will be exercised at SBA's discretion and are subject to satisfactory project performance and availability of funds. Actual calendar dates will depend upon the date the award is issued, but the SBA Co-applicant Scope of Work start date is approximately 30 days after award and will cover the base and option years.

III. Eligibility and Cost Sharing Information

A. DOE Hub

All types of domestic entities (defined as any entity incorporated in the United States and having a substantial U.S. presence, as evidenced by having a significant business center and/or significant employment in the U.S.), including DOE/NNSA Federally Funded Research and Development Centers (FFRDC) contractors, are eligible to apply as lead organizations within a DOE Co-applicant, except the following: other Federal agencies, non-DOE/NNSA FFRDC contractors, and non-profit organizations described in section 501(c)(4) of the Internal Revenue Code of 1986 that engaged in lobbying activities after December 31, 1995. DOE may also consider making an award to a collection of entities, under a TIA award. See 10 C.F.R. 603.210, 603.225(b), and 603.515.

Team Arrangements

Entities comprising the DOE Co-applicant who submit an Application as a team must designate a lead organization with strong scientific leadership and a clearly defined central location. Applications must be submitted on behalf of the DOE Co-applicant by the lead organization, and DOE will enter into a prime award relationship with the designated lead organization. The designated lead organization must perform a greater percentage of the effort than any other institution that is part of the DOE Co-applicant or is a subawardee**. If an Application is received in which the designated lead organization is not performing a greater percentage of the effort than that of any other individual team member or subawardee, the Application will be deemed non-responsive and rejected without further review.**

Eligible/Ineligible Entities

With the exception of foreign entities, the definition of Eligible Applicants set forth above applies to all entities comprising the DOE Co-applicant, including the lead organization that actually submits the application (lead organization) and all other institutions that may receive funds through the DOE Award (team members and/or subawardee). Foreign entities and non-DOE/NNSA Federal agencies and their FFRDC contractors may not be the lead organization within the DOE Co-applicant, but may be proposed as a team member and/or subawardee. If awarded, the non-DOE/NNSA Federal agencies and their FFRDC contractor team participants would be funded under an interagency agreement or other statutory authority.

Additionally, non-profit organizations described in section 501(c)(4) of the Internal Revenue Code of 1986 that engaged in lobbying activities after December 31, 1995, may not be the lead organization within the DOE Co-applicant, team members, and/or subawardee, nor may they be involved in any way in an Application.

DOE/NNSA FFRDC Contractors

DOE/NNSA FFRDC DOE Co-applicants are eligible to apply for funding under this FOA if their cognizant Contracting Officer provides written authorization and this authorization is submitted with the DOE Application as part of the Budget for DOE/NNSA FFRDC Contractor File. If a DOE/NNSA FFRDC is selected for award, or proposed as a team member, the proposed work will be authorized under the DOE field work authorization system and performed under the laboratory‘s Management and Operating (M&O) contract. The following wording is acceptable for the authorization:

–Authorization is granted for the _____ Laboratory to participate in the proposed project. The work proposed for the laboratory is consistent with or complimentary to the missions of the laboratory and will not adversely impact execution of the DOE/NNSA assigned programs at the laboratory.”

DOE Applications that do not include the required cognizant Contracting Officer written authorization as specified above will be deemed non-responsive and rejected without further review.

If an award is made to a DOE/NNSA National Laboratory, all Disputes and Claims will be resolved in accordance with the terms and conditions of the DOE/NNSA National Laboratory‘s M&O contract in consultation between DOE and the prime awardee within the DOE Co-applicant.

Non-DOE/NNSA Federally Funded Research and Development Contractors (FFRDC)

Non-DOE/NNSA FFRDC contractors are not eligible for a prime award under this FOA, but they may be proposed as a team member on another entity's DOE Application subject to the following guidelines:

Authorization for non-DOE/NNSA FFRDCs. The cognizant Contracting Officer for the

Federal agency sponsoring the FFRDC contractor must authorize in writing the participation of the FFRDC contractor on the proposed project and this authorization must be submitted with the application. The written authorization must also contain a determination that the use of a FFRDC contractor is consistent with the contractor's authority under its award and does not place the FFRDC contractor in direct competition with the private sector, in accordance with FAR Part 17.5.

Value/Funding

The value of, and funding for, a DOE/NNSA FFRDC contractor, a non-DOE/NNSA FFRDC contractor, or another Federal agency's portion of the work will not be included in the award to a successful DOE Co-applicant. DOE will fund a DOE/NNSA FFRDC contractor through the DOE field work authorization system and will fund other non-DOE/NNSA FFRDC contractors and other Federal agencies through an interagency agreement or other statutory authority.

If a TIA is awarded as an assistance transaction other than a cooperative agreement, elements might include shared intellectual property, proprietary access to research results, and other favored relationships consistent with the level of cost sharing and the TIA regulations. DOE Co-applicants should understand, however, that certain information arising out of the Hub will be made publicly available consistent with DOE policy and any relevant provision in the Consortium MOU.

Responsibility: The DOE Co-applicant, if successful, will be the responsible authority regarding the settlement and satisfaction of all contractual and administrative issues, including but not limited to, disputes and claims arising out of any agreement between the DOE Co-applicant and any subawardee.

If an award is made to another Federal agency or its FFRDC, all Disputes and Claims will be resolved in accordance with the terms and conditions of the interagency agreement in consultation between DOE and the prime awardee.

Cost Sharing

For the purposes of cost sharing, the proposed activities of the Hub are divided into two types:

- Basic and applied research and development (R&D)
- Technology demonstration and deployment (D&D)

Cost sharing requirements will be determined and implemented separately for each entity comprising the DOE Co-applicant and not by the total estimated cost of the entire Hub project. For-profit entities are required to provide a minimum of 20% cost share for both R&D and D&D activities. This cost share will be based on the portion of the Hub budget proposed by each for-profit entity within the DOE Co-applicant. For all other non-Federal entities, cost sharing is encouraged, but not required for R&D, and a minimum of 20% is

required for D&D activities. The cost share for D&D activities will be based on the portion of the Hub budget proposed by each entity within the DOE Co-applicant. Cost sharing from state and local government entities is strongly encouraged. All entities must include required cost share in their proposed budgets. **All cost shared funding must come from non-Federal sources.**

These cost sharing requirements are consistent with EPAct 2005, §988. D&D falls under the category of "demonstration and commercial application" specified in EPAct 2005, § 988. However, there is no expectation that a Hub will commercialize the energy technology it develops, but will assist in the deployment of that technology through transfer to industry, which will perform the commercial applications.

Cost sharing is also generally required for TIA awards. To the maximum extent practicable, the non-Federal parties performing the work under a TIA are to provide at least 50% cost sharing in conformance with 10 C.F.R. 600.525 through 10 C.F.R. 600.555. The Contracting Officer will consider the amount of cost sharing proposed in determining if a TIA is the appropriate instrument for a project. The Contracting Officer may accept any cash or in-kind contributions that meet the criteria set forth in 10 C.F.R. 603.530 through 10 C.F.R. 603.555. In addition, the Contracting Officer may consider whether cost sharing is impracticable after assessing the DOE Co-applicant's other commitments to successfully performing the work.

B. EDA Assistance

Pursuant to PWEDA, eligible applicants for, and eligible recipients of, EDA Public Works and Economic Development Program investment assistance, as well as EDA Economic Adjustment Assistance, include a(n): (i) District Organization; (ii) Indian Tribe or a consortium of Indian Tribes; (iii) State, a city or other political subdivision of a State, including a special purpose unit of a State or local government engaged in economic or infrastructure development activities, or a consortium of political subdivisions; (iv) institution of higher education or a consortium of institutions of higher education; or (v) public or private non-profit organization or association acting in cooperation with officials of a political subdivision of a State. *See* section 3 of PWEDA (42 U.S.C. § 3122) and 13 C.F.R. § 300.3. For-profit, private-sector entities are not eligible for investment assistance.

In addition, the EDA-funded project must be located in an area that, on the date EDA receives the Application, meets one (or more) of the following economic distress criteria: (i) an unemployment rate that is, for the most recent 24 month period for which data are available, at least one percentage point greater than the national average unemployment rate; (ii) per capita income that is, for the most recent period for which data are available, 80 percent or less of the national average per capita income; or (iii) has a "Special Need," as determined by EDA. The following criteria are published in accordance with 13 C.F.R. § 301.3(a)(1)(iii) and define what may constitute a "Special Need" (as defined in 13 C.F.R. § 300.3):

1. Closure or restructuring of industrial firms or loss of a major employer essential to the area‘s economy. A region has experienced either:
    a. An actual closure or restructuring of a firm(s) within the past 12 months prior to application, resulting in sudden job losses and meeting the following dislocation criteria; or
    b. A threat of closure that results from a public announcement of an impending closure or restructuring of a firm(s) expected to occur within two years of application; AND
    c. Such actual or threatened closure results in sudden job losses meeting the following dislocation criteria:
        i. For regions with a population of at least 100,000, the actual or threatened dislocation is 500 jobs, or one percent of the civilian labor force (CLF), whichever is less.
        ii. For areas with a population up to 100,000, the actual or threatened dislocation is 200 jobs, or one percent of the CLF, whichever is less.
2. Substantial out-migration or population loss. An EDA Co-applicant seeking eligibility under this criterion will be asked to present appropriate and compelling economic or demographic data to demonstrate the special need.
3. Underemployment, meaning employment of workers at less than full-time or at less skilled tasks than their training or abilities permit. An EDA Co-applicant seeking eligibility under this criterion will be asked to present appropriate and compelling economic and demographic data to demonstrate the special need.
4. Military base closures or realignments, defense contractor reductions-in-force, or Department of Energy defense-related funding reductions.
    a. A military base closure refers to a military base that was closed or is scheduled for closure or realignment pursuant to the base closure and realignment process or other Department of Defense (DOD) process. Unless further extended by the Assistant Secretary, the region is eligible from the date of DOD‘s recommendation for closure until five years after the actual date of closing of the installation.
    b. A defense contractor reduction-in-force refers to a defense contractor(s) experiencing defense contract cancellations or reductions resulting from official DOD announcements and having aggregate value of at least $10 million per year. Actual dislocations must have occurred within one year of application to EDA and threatened dislocations must be anticipated to occur within two years of application to EDA. Defense contracts that expire in the normal course of business will not be considered to meet this criterion.
    c. A Department of Energy defense-related funding reduction refers to a Department of Energy facility that has experienced or will experience a reduction of employment resulting from its defense mission change. The area is eligible from the date of the Department of Energy announcement of

reductions until five years after the actual date of reduced operations at the installation.

5. Natural or other major disasters or emergencies, including terrorist attacks. Unless further extended by the Assistant Secretary, a region that has received one of the following disaster declarations is eligible to apply for EDA assistance for a period of 18 months after the date of declaration:
   a. A Presidentially Declared Disaster declared under the Robert T. Stafford Disaster Relief and Emergency Assistance Act, as amended (42 U.S.C. § 5121 *et seq*.); or
   b. A Federally Declared Disaster pursuant to the Magnuson-Stevens Fishery Conservation and Management Act, as amended (16 U.S.C. § 1861a(a)); or
   c. A Federally Declared Disaster pursuant to the Consolidated Farm and Rural Development Act, as amended (7 U.S.C. § 1961); or
   d. A Federally Declared Disaster pursuant to the Small Business Act, as amended (Pub. L. No. 85-536, 72 Stat. 384 (1958)).
6. Extraordinary depletion of natural resources or other impact attributable to a new or revised federal regulation or policy that will have a significant impact on a community to avoid an extraordinary depletion of natural resources.
7. Communities undergoing transition of their economic base as a result of changing trade patterns. An area certified as eligible by the North American Development Bank (NADBank) Program or the Community Adjustment and Investment Program (CAIP).
8. Other special need. The area is experiencing other special or extraordinary economic adjustment needs, as determined by the Assistant Secretary of Commerce for Economic Development.

For the purposes of this joint FOA, the region eligible for EDA assistance need not be coterminous with the E-RIC‘s boundaries and may be a sub-region within the E-RIC. Furthermore, the EDA-funded project may be in an area that does not meet EDA‘s economic distress criteria if the project will provide substantial direct benefits to an economically distressed area and is located within an EDA-approved Economic Development District. For example, the Consortium may define the E-RIC region as the Greater Nashville Development District, but as part of the EDA Application, the EDA Co-applicant may request EDA assistance to construct infrastructure for an industrial park to manufacture energy efficient HVAC systems in Charlotte, Tennessee. In this example, the Greater Nashville area as a whole may not meet EDA‘s distress criteria, but the EDA project may still be eligible for EDA assistance if it is in Charlotte, Tennessee (an economically distressed community). Alternatively, if the EDA Application requests assistance for a project in Nashville, Tennessee, that provides substantial direct benefit to Charlotte (and Nashville and Charlotte are both within an EDA-approved Economic Development District), that project may also be eligible. EDA Co-applicants are responsible for demonstrating to EDA, by providing statistics and other information, as

appropriate, the nature and level of economic distress in the area in which the proposed project will be located.

Generally, the amount of the EDA grant may not exceed 50 percent of the total cost of the project. Projects may receive an additional amount that shall not exceed 30 percent, based on the relative needs of the region in which the project will be located (when compared with other distressed regions around the country), as determined by EDA. *See* section 204(a) of PWEDA (42 U.S.C. § 3144) and 13 C.F.R. § 301.4(b)(1). In the case of EDA investment assistance to a(n) (i) Indian Tribe, (ii) State (or political subdivision of a State) that the Assistant Secretary determines has exhausted its effective taxing and borrowing capacity, or (iii) non-profit organization that the Assistant Secretary determines has exhausted its effective borrowing capacity, the Assistant Secretary has the discretion to establish a maximum EDA investment rate of up to 100 percent of the total project cost. *See* sections 204(c)(1) and (2) of PWEDA (42 U.S.C. § 3144) and 13 C.F.R. § 301.4(b)(5).

Funds from other federal financial assistance awards are considered matching share funds for the EDA Co-applicant Scope of Work only if authorized by statute, which may be determined by EDA's reasonable interpretation of the statute. *See* 13 C.F.R. § 300.3. The EDA Co-applicant must show that the matching share is committed to the EDA Co-applicant Scope of Work for the award period, will be available as needed, and is not conditioned or encumbered in any way that precludes its use consistent with the requirements of EDA investment assistance. *See* 13 C.F.R. § 301.5.

C. NIST/MEP Assistance

Only existing NIST/MEP Centers are eligible for NIST/MEP investment assistance under this FOA. There is no cost share requirement for the supplemental funds provided to an existing NIST/MEP Center as authorized in 15 U.S.C. 278k(f).

D. SBA Assistance

In order to be eligible for this funding opportunity, the SBA Co-applicant must currently be accredited and funded by SBA as an SBDC. In the event that the E-RIC involves multiple states, two or more SBDCs may jointly apply and participate as a team under the lead of a single named recipient. However, the maximum funding amount provided will be $300,000 regardless of how many SBDCs participate in one RIC plan. Additionally, SBA cannot make more than one award per state under its Energy Independence and Security Act of 2007 authority.

The recipient organization receiving the Cooperative Agreement is required to match funding received on a 1:1 ratio. Cash match in an amount not less than 50 percent of the Federal funding is required. The remainder may be taken in the form of waived indirect and/or in-kind match. No portion of the match may be from Federal sources (except applicable Community Development Block Grant funds). Program income (i.e. fees collected from clients and/or attendees for training) is also excluded from match.

IV. Application and Submission Information

A. Obtaining a Proposal Package

Please read the following instructions very carefully, as these instructions differ from typical FOA instructions.

All forms are available online and may not be requested in hardcopy format. Unless otherwise specified below, all forms must be downloaded from <Grants.gov>. **The Granting Agencies strongly recommend that the Co-applicants use Adobe Acrobat version 8.1.3 to complete the Applications, as the use of other versions may result in errors.**

Please note that although each Co-applicant will be able to download just those forms that they must complete, the Proposal from the Consortium must contain all of these forms, as well as all required narratives (including the Overarching Regional Innovation Cluster Project Narrative), in a single submission. As specified below, the Consortium must submit six (6) copies of a compact disc (CD), with each CD containing all required forms and narratives from all Co-applicants. **Proposals should not be submitted via Grants.gov**. Please note that because the Proposal is not being submitted via Grants.gov, the Co-applicants are not required to obtain a Grants.gov user id and password.

The DOE Co-applicant must do the following to download the required forms to apply for DOE funding:

1. Go to www.grants.gov .

2. Click on _Apply for Grants‘ on the left hand menu. [Note: You will not be submitting an application package through Grants.gov; however, using the Grants.gov _Apply‘ function is necessary in order to access the required forms in a screen-fillable format.]

3. Click on the blue link _Download a Grant Application Package.‘

4. Enter funding opportunity number _ERIC2010‘.

5. Locate the Competition Title _Department of Energy‘.

6. Under the _Instructions & Application‘ column click on _download‘.

7. Click on the blue _Download Application Package‘ link.

8. Save the PDF file to your computer. This package contains only those forms that must be completed by the DOE Co-applicant.

9. In the _Application Filing Name‘ field, enter _[insert Consortium name]—DOE Application‘

10. Under _Mandatory Documents,‘ left click with your mouse on the first form name. Then click on the gray arrow button labeled _Move Form to Complete.‘

11. Continue doing so until all forms listed as _Mandatory Documents‘ have been moved to the _Mandatory Documents for Submission‘ box.

12. If there are any forms listed under _Optional Documents,‘ move these forms to _Optional Documents for Submission‘ if the instructions in Section IV.E. below indicate that you are required to complete these forms.

13. As you complete your package, continue to save your application as you work on it.

14. Once you have completed your application package, Click on the _Check Package for Errors‘ button at the top of the document in order to ensure that all mandatory fields in your application have been completed.

15**. DO NOT click on SAVE & SUBMIT**. Instead, save your application locally to your computer or network. The application package PDF file should be copied to the Consortium Proposal CD.

The EDA Co-applicant must do the following to download the required forms to apply for EDA funding:

1. Go to www.grants.gov .

2. Click on _Apply for Grants‘ on the left hand menu. [Note: You will not be submitting an application package through Grants.gov; however using the Grants.gov _Apply‘ function is necessary in order to access the required forms in a screen-fillable format.]

3. Click on the blue link _Download a Grant Application Package.‘

4. Enter funding opportunity number _ERIC2010‘.

5. Under the _Instructions & Application‘ column click on _download‘ for your appropriate Competition Title (_EDA Construction‘, _EDA Non-Construction‘, or _EDA Construction and Non-Construction‘) depending on whether the EDA Co-applicant is seeking only construction assistance, only non-construction assistance, or both.

6. Click on the blue _Download Application Package‘ link.

7. Save the PDF file to your computer. This package contains only those forms that must be completed by the EDA Co-applicant.

8. In the _Application Filing Name' field, enter _[insert Consortium name]—EDA Application'

9. Under _Mandatory Documents,' left click with your mouse on the first form name. Then click on the gray arrow button labeled _Move Form to Complete.'

10. Continue doing so until all forms listed as _Mandatory Documents' have been moved to the _Mandatory Documents for Submission' box.

11. If there are any forms listed under _Optional Documents,' move these forms to _Optional Documents for Submission' if the instructions in Section IV.F. below indicate that you are required to complete these forms.

12. As you complete your package, continue to save your application as you work on it.

13. Once you have completed your application package, click on the _Check Package for Errors' button at the top of the document in order to ensure that all mandatory fields in your application have been completed.

14. **DO NOT click on SAVE & SUBMIT**. Instead, save your application locally to your own computer or network. The application package PDF file should be copied to the Consortium Proposal CD.

The NIST Co-applicant must do the following to download the required forms to apply for NIST/MEP funding:

1. Go to www.grants.gov .

2. Click on _Apply for Grants' on the left hand menu. [Note: You will not be submitting an application package through Grants.gov; however using the Grants.gov _Apply' function is necessary in order to access the required forms in a screen-fillable format.]

3. Click on the blue link _Download a Grant Application Package.'

4. Enter funding opportunity number _ERIC2010'.

5. Locate the Competition Title _NIST/MEP'.

6. Under the _Instructions & Application' column click on _download'.

7. Click on the blue _Download Application Package' link.

8. Save the PDF file to your computer. This package contains only those forms that must be completed by the NIST Co-applicant.

9. In the "Application Filing Name" field, enter "[insert Consortium name]—NIST Application"

10. Under "Mandatory Documents," left click with your mouse on the first form name, then click on the gray arrow button labeled "Move Form to Complete."

11. Continue doing so until all forms listed as "Mandatory Documents" have been moved to the "Mandatory Documents for Submission" box.

12. If there are any forms listed under "Optional Documents," move these forms to "Optional Documents for Submission" if the instructions in Section IV.G, below indicate that you are required to complete these forms.

13. As you complete your package, continue to save your application as you work on it.

14. Once you have completed your application package, Click on the "Check Package for Errors" button at the top of the document in order to ensure that all mandatory fields in your application have been completed.

15. **DO NOT click on SAVE & SUBMIT**. Instead, save your application locally to your computer or network. The application package PDF file should be copied to the Consortium Proposal CD.

The SBA Co-applicant must do the following to download the required forms to apply for SBA funding:

1. Go to www.grants.gov .

2. Click on "Apply for Grants" on the left hand menu. [Note: You will not be submitting an application package through Grants.gov; however using the Grants.gov "Apply" function is necessary in order to access the required forms in a screen-fillable format.]

3. Click on the blue link "Download a Grant Application Package."

4. Enter funding opportunity number "ERIC2010".

5. Locate the Competition Title –Small Business Administration"

6. Under the "Instructions & Application" column click on "download".

7. Click on the blue "Download Application Package" link.

8. Save the PDF file to your computer. This package contains only those forms that must be completed by the SBA Co-applicant.

9. In the _Application Filing Name' field, enter _[insert Consortium name]—SBA Application'

10. Under _Mandatory Documents,' left click with your mouse on the first form name. Then click on the gray arrow button labeled _Move Form to Complete.'

11. Continue doing so until all forms listed as _Mandatory Documents' have been moved to the _Mandatory Documents for Submission' box.

12. If there are any forms listed under _Optional Documents,' move these forms to _Optional Documents for Submission' if the instructions in Section IV.H. below indicate that you are required to complete these forms.

13. As you complete your package, continue to save your application as you work on it.

14. Once you have completed your application package, click on the _Check Package for Errors' button at the top of the document in order to ensure that all mandatory fields in your application have been completed.

15. **DO NOT click on SAVE & SUBMIT**. Instead, save your application locally to your computer or network. The application package PDF file should be copied to your CD.

16. Download additional required SBA forms (see Section IV.H. below) that are not available on Grants.gov from SBA's website, as directed. Complete these forms and copy these files to the Consortium Proposal CD.

B. Summary of Required Forms and Narratives

Each application for the funding laid out in this joint FOA must contain the following:

1) Overarching Energy Regional Innovation Cluster Project Narrative [prepared jointly by all co-applicants; see Section IV.D.]
2) DOE Hub application forms and narratives [prepared by DOE Hub Co-applicant; see Section IV.E.]
3) EDA application forms and narratives [prepared by EDA Co-applicant; see Section IV.F.]
4) NIST/MEP application forms and narratives [prepared by NIST Co-applicant; see Section IV.G.]
5) SBA application forms and narratives [prepared by SBA Co-applicant; see Section IV.H.]

Please note that all components listed above must be submitted as part of a single application package and may not be submitted separately.

C. Page Limit of Proposal

The entire Proposal (i.e.. all four Applications plus the Overarching Regional Innovation Cluster Project Narrative) must not exceed 350 pages, when printed using standard 8.5" by 11" paper with 1" margins (top, bottom, left, and right). The font must not be smaller than Times New Roman 12-point font. This page limit excludes:

- The cover page, table of contents, and required appendices of the Hub project narrative;
- The copy of the region's Comprehensive Economic Development Strategy (CEDS); and
- The copy of the EDA Co-applicant's Articles of Incorporation and By-Laws (if applicable).

Evaluators will review only the first 350 pages if more than 350 pages are submitted. Do not include any Internet addresses (URLs) that provide information necessary to review the Proposal, because the information contained in these sites will not be reviewed.

D. Overarching Regional Innovation Cluster Project Narrative

This part of the Proposal package explains the relationship between the various agency-specific Applications, and how the Consortium will collectively manage and coordinate E-RIC activities and partnerships. Specifically, this part must contain all of the following:

a. Identification, Description, and Analysis of Region

[Note: EDA has funded the development of a series of tools that Consortia may find helpful when compiling this section. Please see www.eda.gov/PDF/EDA%20Tools.pdf for more information.]

(i) Identify and describe the geographic region that the project proposed by your Proposal will benefit. Your description of the affected region should explain how the region functions (or could function) as a "geographically bounded cluster of similar, synergistic or complementary businesses in the energy efficient buildings sector, with active channels for business transactions and communications across the region, that share specialized infrastructure, labor markets and services"[3]. Include a map delineating the region specified for the E-RIC.

[3] Rosenfeld, 1997.

(ii) Identify existing unique regional assets and competitive advantages in the E-RIC, including, but not limited to, industry-specific infrastructure; R&D facilities; mature and/or start-up firms in the cluster or in the supply chain to firms in this cluster; business incubators focused on firms in this cluster; educational and/or training programs specifically designed to develop a skilled workforce in energy efficient building systems; industry and/or public-private partnerships designed to promote the growth of the cluster; and venture capital funds or other financing mechanisms to capitalize firms in the cluster. Whenever possible, provide qualitative and quantitative data to support claims of regional competitive advantage. Some examples include patents/inventions developed or commercialized by local R&D and tech transfer facilities, as well as local companies; the growth in sales and/or employment of regional firms in the cluster; numbers of workers with specified levels of training (e.g. certificate programs, A.A., B.A., M.S., Ph.D) in relevant fields; awards garnered by faculty and students in relevant fields of study; and the number of new firms in the cluster capitalized within the past year.

(iii) Describe existing efforts to integrate the planning and development of research and development activities; technology licensing and commercialization; funding and technical assistance for early-stage firms; the development of linkages between the region's existing manufacturing base and the emerging energy efficient building systems cluster; regional infrastructure upgrades; and workforce training and development. Identify any regional accomplishments stemming from the integration of these activities (and specify the involvement of any Co-applicants or Key Personnel in these accomplishments), and identify any obstacles the region has faced in such integration.

(iv) Describe existing efforts to build and nurture public-private partnerships aimed at growing the cluster and to build partnerships among local governments and between units of local government and state government(s). Identify any regional accomplishments stemming from these partnerships (and specify the involvement of any Co-applicants or Key Personnel in these accomplishments) and identify any obstacles the region has faced in building such partnerships.

(v) Identify the obstacles that prevent the region from further expanding the cluster, including, but not limited to, inadequate research facilities or infrastructure; gaps in workforce training and development; inadequate access to capital; and gaps in the supply chain.

b. Overview of Proposed Project

(i) Identify the DOE Co-applicant, the EDA Co-applicant, the NIST Co-applicant, and the SBA Co-applicant. For each, specify their respective roles and responsibilities in the overall project, provide a brief explanation of each planned Co-applicant Scope of Work, and specify the amount of funding sought. Attach a copy of a written agreement signed by all Co-applicants that reflects a binding commitment to undertake and perform the roles and responsibilities specified in this section. Letters of interest will not be deemed sufficient to meet this requirement.

(i) Describe the Consortium's organizational and management capabilities to successfully implement the Proposal and achieve the objectives of the FOA.

(ii) Provide a detailed year-by-year description of all activities to be undertaken as part of the overall Proposal and specify which proposed activities are to be funded by which federal grants or cooperative agreements.

(iii) Describe how the proposed activities relate to activities already funded by existing federal awards (or which will be funded under future federal awards), as applicable.

(iv) Identify any activities related to the Proposal for which federal resources are not required and private funds or in-kind contributions are available, and specify the type and source of these resources.

(v) Explain how the Proposal will build on the region's existing assets and competitive advantages while removing or mitigating the obstacles to cluster growth that were identified in Section a. of the narrative.

(vii) Explain how the Proposal will mitigate or eliminate obstacles to integrated planning and implementation of research and development activities; technology licensing and commercialization; funding and technical assistance for early-stage firms; the development of linkages between the region's existing manufacturing base and the emerging E-RIC; regional infrastructure upgrades; and workforce training and development.

(viii) Explain how the Proposal will embody best practices in the development and growth of regional innovation clusters (i.e. integration of planning and implementation across E-RIC components, identification and justification for a cohesive evidence-based region, planning for long-term cluster resilience, breadth and depth of participation of E-RIC partners, and leveraged resources). Explain how each Co-applicant will participate and further these best practices.

c. Analysis of Project's Fit with FOA Objectives

(i) Describe how the both the overall Proposal, and each individual Application within the Proposal, contribute to the attainment of *each* of the following goals:

- Develop and demonstrate sustainable and efficient solutions to achieve U.S. energy security objectives, reduce America's carbon footprint, and attain other national strategic objectives;
- Create and retain Good Jobs;
- Eliminate the gap between supply and demand of skilled workers in the E-RIC through job training and education;
- Increase regional gross domestic product (GDP);

- Promote innovation in science and technology generally and, with respect to the Hub, promote energy efficient building systems, designs and best practices; and

- Enhance United States' economic, technological, and commercial competitiveness on the global stage.

d. Proposed Project Performance Tracking and Measurement

(i) Provide a list of proposed performance metrics; this list must contain one or more metrics for each of the FOA objectives (see c above), as well as any other project-specific objectives proposed by the Consortium, and should be designed to enable outside reviewers to determine the Consortium's progress in attaining the FOA and project-specific objectives. For each proposed metric, provide a rationale for inclusion, a suggested data source (along with any required notes about data availability, frequency of data collection, etc.), and a suggested formula/methodology for calculation.

(ii) Provide a proposed means to monitor implementation of RIC best practices (see the first evaluation criterion listed in Section V.E.).

e. E-RIC Partner Involvement Plan

(i) Provide a list of E-RIC Partners. Attach letters of commitment from these E-RIC Partners that specify the nature of each E-RIC Partner's involvement, as well as any formal mechanisms for coordination with the Co-applicants.

(ii) Provide an overview of how the E-RIC Partners will collaborate with the Co-applicants to maximize cluster development, growth, sustainability, and resilience; ensure the active participation of Underrepresented Groups in cluster activities; and integrate the planning and development of research and development activities, technology licensing and commercialization, funding and technical assistance for early-stage firms, the development of linkages between the region's existing manufacturing base and the E-RIC, regional infrastructure upgrades, and workforce training and development.

f. Stakeholder Analysis

(i) Identify and describe all cluster stakeholder groups (excluding the Co-applicants and E-RIC Partners described above, but including the general public, local governments, community groups, foundations, labor organizations, and sources of capital). Provide a brief analysis of each stakeholder group's influence/impact on achieving the Proposal.

(ii) Describe any past or current efforts to engage these stakeholders in planning or implementing cluster initiatives. Discuss any achievements stemming from these efforts, as well as any lessons learned. Describe how any lessons learned from previous efforts are reflected in the Proposal.

(iii) Describe how the Consortium and E-RIC Partners will engage the regional business community in order to encourage their participation and further the objectives of the E-RIC.

g. Communications Plan

(i) Provide a plan for managing communications among the Co-applicants, E-RIC Partners, and stakeholder groups. Specify the frequency, mode, and content of communications. Specify any formal mechanisms that the Co-applicants will put in place to share information related to project schedule, scope, or budget, and to alert fellow Co-applicants to any issues that may affect others‘ performance. Explain how ongoing communications with E-RIC Partners and stakeholders will be managed to maximize cluster development, growth, sustainability, and resilience; ensure the active participation of Underrepresented Groups in cluster activities; and integrate the planning and development of research and development activities, technology licensing and commercialization, funding and technical assistance for early-stage firms, the development of linkages between the region‘s existing manufacturing base and the emerging E-RIC, regional infrastructure upgrades, and workforce training and development.

(ii) Explain how performance measurement data will be collected and stored, and to whom it will be disseminated and in what format.

h. Risk Management Plan/Plan for Cluster Growth, Innovation, and Resilience

(i) Identify risks to the Proposal‘s proposed activities, budget, and schedule and, for each of these identified risks, provide a mitigation strategy.

(ii) Provide a SWOT (Strengths, Weaknesses, Opportunities, Threats) Analysis of the E-RIC. This analysis should consider the rise of foreign competitors, changes in technologies or platforms, possible changes in the housing industry or the market as a whole, potential regulatory issues, opportunities for diversification, future economic shocks or shifts, the emergence of new strategic partners, and any other issues that may affect the E-RIC‘s long-term prospects.

(iii) Identify steps the Consortium and its E-RIC Partners have taken to capitalize on emerging opportunities and regional strengths while mitigating threats and rectifying regional weaknesses.

(iv) Identify steps that the Consortium and its E-RIC Partners will take to periodically re-assess these strengths, weaknesses, opportunities, and threats, and capitalize on emerging opportunities and regional strengths while mitigating threats and rectifying regional weaknesses.

i. Strategy for the Development of a Skilled Workforce

(i) Describe the proposed strategy for recruiting, training, placing, and retaining skilled workers for the E-RIC, including the Hub, and how the proposed strategy will address the workforce needs of the E-RIC.

(ii) Describe the regional labor market analysis on which the strategy is based, including identification of:

- The current and projected employment for the E-RIC;
- The specific occupations in the E-RIC for which workers are currently needed or are projected to be needed;
- The gap between the available workforce and projected demand in employment for the E-RIC; and
- The data sources used for the analysis and the key assumptions on which the analysis was based.

The Consortium should base its labor market analysis on the most current and relevant sources of data available. The Consortium may draw from a variety of resources for this data, including traditional labor market information, such as projections; industry data from trade or industry associations, labor organizations, or direct information from regional employers or industry; information on the regional economy from economic development agencies; and other transactional data, such as job vacancies.

(iii) Describe how the strategy will enable education and training workforce partners, in collaboration with private sector partners, to work cooperatively to address the current and future workforce needs that are key to the growth of the cluster. This description should:

- Identify the existing secondary and postsecondary education and training programs in the region that will be utilized to meet the workforce needs of the E-RIC. At a minimum, this strategy should include coordination with local Workforce Investment Act (WIA) Adult, Dislocated Worker, and Youth programs and the Carl D. Perkins Career and Technical Education Act of 2006 (Perkins Act) program. Additional education and training programs that could be identified by the Consortium include, but are not limited to, WIA State set-aside funds; Registered Apprenticeship programs; discretionary grant awards funded by the Department of Labor through the Recovery Act Green Jobs initiative; and State and locally-funded programs;
- Explain how key education and workforce entities (including labor organizations, adult education centers, workforce investment boards, One-Stop Career Centers, and institutions of higher education, including community colleges and career and technical colleges, and community-based organizations) will be involved as partners for supporting the transition of both youth and adults into education and training programs leading to skilled employment within the cluster. Explain how community-based organizations will be involved as partners to develop the skilled workforce, such as through outreach, provision of employment and supportive services, and programs for youth;
- Explain how the identified existing education and training programs will be coordinated and aligned, both in terms of use of funds and programmatic

objectives, to address the skills and competencies demanded by the occupations in the cluster;

- Explain how both youth and adults will be prepared with the basic skills and knowledge to enter such training through the alignment of programs and curricula in continuous courses of study that span from secondary to post-secondary levels. In your strategy, reference statutory elements of Programs of Study as described in the Perkins Act;
- Identify the industry-recognized degrees, credentials, and certificates that are needed for occupations in the energy-efficiency building sector and will be attained by workers in the identified education and training programs;
- Identify any deficiencies that exist in the capacity of the education and training programs in the region to develop a skilled workforce for the cluster and describe strategies to address those deficiencies; and
- Identify how all employment opportunities in the cluster will be posted on the State Job Bank in the state(s) where the E-RIC is located.

(iv) Describe how the E-RIC will provide employment opportunities for low-income workers, aspiring and incumbent low-skill workers, and other disadvantaged worker populations in the region, such as individuals with limited English proficiency, disconnected youth, and members of Underrepresented Groups (as described in the definitions section of this FOA) . This description should:

- Identify the specific worker populations that will be part of the strategy;.
- Explain how the strategy will promote a diverse workforce in the cluster that reflects the demographics of the population in the region;
- Identify strategies for providing opportunities for these worker populations to receive education and training and to obtain employment in the cluster; and
- Identify the types of obstacles faced by these worker populations, the types of assistance available to those workers, and strategies to help those workers overcome those obstacles.

j. Inclusion Plan

(i) Describe the Co-applicants' track record and commitment to increasing the participation of Underrepresented Groups in engineering and science at the secondary, undergraduate and graduate level, in faculty and positions of academic leadership, and in scientific, technological, and management positions. Whenever possible, include supporting data, such as IPEDS data or Co-applicants' attainment of goals pertaining to participation in the National Science Foundation Louis Stokes Alliance for Minority Participation (LSAMP), Bridge to Doctorate (BD) program and/or Alliance for Graduate Education and the Professoriate (AGEP).

(ii) Describe the DOE, EDA, SBA, and NIST Co-applicants' track record of advancing and broadening the education and economic opportunities of Underrepresented Groups:

- Provide past and current labor market data on the number of individuals from Underrepresented Groups employed in the proposed regional cluster overall, as well as in STEM positions in particular.
- Provide current data on the employment and training of Underrepresented Groups by each of the Co-applicants, and where available and applicable, the E-RIC Partners.
- Provide an overview of past efforts by the Co-applicants and, where applicable and available, the E-RIC Partners. Describe any concrete achievements stemming from these efforts, as well as any obstacles encountered or lessons learned.
- Provide a strategic plan for the recruitment, training, employment, and retention of members of Underrepresented Groups within the E-RIC, particularly in engineering and science at the secondary, undergraduate and graduate level, in faculty and positions of academic leadership, and in scientific, technological, and management positions.
- Provide a forecast of the impact of this strategic plan on the employment of Underrepresented Groups in the proposed regional cluster overall, as well as in STEM occupations in particular. Provide a justification for this forecast, using quantitative data whenever possible.

(iii) Describe the DOE, EDA, SBA, and NIST Co-applicants' track record of, and propose actions for, building direct and deliberate bridges between the region's dynamic commercial centers and historically excluded areas in the region[4] and linking these areas to educational and economic opportunities.

- Identify historically excluded areas in the region. Provide a data-driven justification for categorizing these areas as historically excluded (e.g., data on poverty, educational attainment, per capita income, unemployment and underemployment, outmigration, etc.).
- Describe past efforts by the Co-applicants and/or E-RIC Partners to link these areas, as well as small and disadvantaged businesses in these areas, to economic and educational opportunities. Describe any concrete achievements stemming from these efforts, as well as any obstacles encountered or any lessons learned.
- Provide a strategic plan to link residents of these historically excluded areas, as well as small and disadvantaged businesses in these areas, to educational and

[4] Historically excluded areas are geographically-bounded areas (e.g. census tracts, cities, counties) that face some or all of the following socioeconomic challenges: blight, underinvestment, low per capita income, high poverty, high unemployment, environmental or natural resource degradation, and mass layoffs.

employment opportunities in the proposed regional cluster through recruitment, training, enhanced public transportation, etc.

k. Sustainability/Carbon Reduction Plan

(i) Provide a detailed sustainability plan for both Consortium operations and the E-RIC as a whole. The plan should set forth desired outcomes as well as the processes for achieving them and proposed measures for evaluating success. It should describe how the Consortium and E-RIC will demonstrate and incorporate technologies, programs, business processes, and physical and operational design to reduce the Consortium and E-RIC‘s own use of energy, reduce greenhouse gas emissions, eliminate or reduce waste streams, and adopt sustainable business practices, as well as develop sustainable and efficient solutions to achieve national energy security objectives and reduce the United States‘ carbon footprint. This plan should show the projected primary and secondary environmental impacts of the Consortium's collective programs over a 5-year time horizon, and the plan should demonstrate how the Consortium plans to set and achieve targets related to goals such as: net reductions in regional energy usage, use of renewable energy, minimization or elimination of waste streams, incorporation of life cycle management over materials and products, and incorporation of emerging energy efficiency standards and sustainable business practices. The Consortium should also demonstrate protection of natural areas and use of non-traditional green building and transportation technologies within the E-RIC to minimize primary and secondary adverse impacts on environmental quality.

l. Key personnel

(i) Identify the key personnel who will be primarily responsible for the full performance of each Co-applicant‘s Scope of Work as well as key personnel responsible for the full performance of the Consortium as a whole and enforcement of all agreements made between the Consortium and the Federal Government. For each person identified, describe their role, responsibilities, and authority, as well as the interrelationships between the key personnel.

(ii) Attach résumés (no more than 2 pages each) for each key personnel listed.

E. DOE Hub Application Forms and Narratives

Letters of intent and pre-applications are not required from the DOE Co-applicant for the Hub component of this FOA. A specific entity may not submit more than one Application as a DOE Co-applicant‘s lead organization under this joint FOA. If more than one Application is received from a single lead organization leading more than one DOE Co-applicant, DOE will consider only the first Application received. The remaining Applications will be deemed non-responsive and rejected without further review. However, there is no limitation on the number of Applications in which an organization participates as an E-RIC Partner (see Definitions) or subcontractor.

The DOE Co-applicant must complete and submit the following to apply for the DOE

component of this joint FOA:

a. SF 424 (R&R)

Complete all the required fields in accordance with the pop-up instructions on the form. The list of certifications and assurances referenced in Field 17 can be found on the DOE Financial Assistance Forms Page at http://management.energy.gov/business_doe/business_forms.htm under Certification and Assurances.

b. Research and Related Other Project Information

Complete questions 1 through 6 on this form. Rather than attaching the requested files, please save as three separate, additional files to the Consortium Proposal CD:

- Project Summary/Abstract;
- Project Narrative; and
- Appendices to Project Narrative.

These files must comply with the following instructions:

c. Project Summary/Abstract

The project summary/abstract must contain a summary of the proposed activity suitable for dissemination to the public. It should be a self-contained document that identifies:

- The name of the DOE Co-applicant;
- The Hub Director;
- The Project Director/Principal Investigator(s) for the Hub;
- The title of the Hub project;
- The objectives of the proposed Hub;
- A description of the proposed Hub, including methods to be employed, the potential impact of the proposed Hub (i.e., benefits, outcomes), and, for projects in which multiple entities will collaborate to operate the Hub, the dollar value of the effort to be performed by each entity comprising the DOE Co-applicant over the five-year project period and a brief description of the capacity in which each entity comprising the DOE Co-applicant will be participating; and
- How the proposed Hub activities will be integrated into the activities of the E-RIC (i.e., the how the proposed Hub will be integrated into the projects

proposed by the EDA Co-applicant, NIST Co-applicant, and the SBA Co-applicant).

This document must not include any proprietary or sensitive business information as DOE may make it available to the public after award. The project summary must not exceed 1 page when printed using standard 8.5" by 11" paper with 1" margins (top, bottom, left and right, single spaced), with font not smaller than Times New Roman 12-point font.

d. Project Narrative

The project narrative for the Hub must not exceed 100 pages (excluding the cover page, table of contents, and required appendices), including charts, graphs, maps, photographs, and other pictorial presentations, when printed using standard 8.5" by 11" paper with 1" margins (top, bottom, left, and right). Evaluators will review only the first 100 pages if more than 100 pages are submitted.

Headers/footers containing page numbers and project titles/logos may be inserted within the required 1" margins. The font may not be smaller than Times New Roman 12-point font. Do not include any Internet addresses (URLs) that provide information necessary to review the application, because the information contained in these sites will not be reviewed.

Patentable ideas, trade secrets, proprietary or confidential commercial or financial information, the disclosure of which may harm the applicant, should be included in the project narrative only when such information is necessary to convey an understanding of the proposed project. The use and disclosure of such data may be restricted, provided the applicant includes the following legend on the first page of the project narrative and specifies the pages of the application which are to be restricted:

"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 the DOE Co-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 herein 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 DOE Co-applicant."

To protect such data, each line or paragraph on the pages containing such data must be specifically identified and marked with a legend similar to the following:

"The following contains proprietary information that [insert name of DOE Co-applicant) requests not be released to persons outside the Government, except for purposes of review and evaluation."

The contents of the project narrative are specified in order to ensure that the merit reviewers have the necessary information to conduct proper evaluations. All project narratives are to include the following three components:

1. **Overview of the Proposal Plan**

This section must not exceed five pages and should provide a concise overview summarizing the vision for the proposed Hub including:

(i) Clearly stated short-, intermediate, and long-term goals of the Hub;

(ii) The strategy for developing and operating the Hub;

(iii) How the research and development (R&D) components of the Hub will be integrated into an effective whole;

(iv) How the R&D program will address critical research needs in energy efficient building systems; and

(v) If applicable, the strategy for transitioning Hub activities from R&D into technology demonstration and deployment (D&D).

2. Organization and Management Plan.

This section must provide a clear and substantive plan for the organization and management of the proposed Hub, including:

(i) A comprehensive management plan for a world-leading program that encourages high-risk, high-reward research, development, and demonstration (RD&D) and encourages synergy and cohesion among investigators by infusing a culture of empowered central research management throughout the Hub;

(ii) To the extent that there is geographic distribution of the entities comprising the DOE Co-applicant, a clear plan for the use of state-of-the-art technology and frequent virtual meetings to enable meaningful long distance collaboration;

(iii) An organizational structure that delineates the roles and responsibilities of senior/key personnel to include the percent of time commitment of each senior/key personnel and describes the means of providing external oversight and guidance for research direction and approval of the research program;

(iv) An overview of the scientific, technical and policy-related expertise in the relevant research disciplines required for the Hub;

(v) A description of the relevant experience of the lead institution and senior/key personnel in project, program, and personnel management of diverse teams of scientific, technical and policy-related professionals for projects of comparable magnitude;

(vi) A description of the relevant scientific, technical, and policy-related expertise and experience of the proposed Hub staff in the research disciplines needed for project

success including any plans for collaboration with outside researchers funded by the Department of Energy's programs;

(vii) A description of the major needs and recruiting strategy for additional scientific, technical and policy-related personnel including new senior staff, students, and post-doctoral fellows;

(viii)A description of the proposed Hub's program to provide opportunities to inspire, train, and support leading researchers of the future who have an appreciation for the global energy challenges of the 21st century, including specific plans for education, outreach, and training;

(ix) A description of how the Hub leadership will communicate effectively with researchers of all disciplines and promote awareness of the importance of energy science and technology;

(x) An assessment of the availability of the Hub Director and senior/key personnel, including analysis of their potential involvement in other major projects;

(xi) A description of the roles and responsibilities and prospective membership of an external advisory committee, which must include representation from the appropriate industry(ies);

(xii) A discussion of how the proposed research relates to existing and planned research programs at the lead institution;

(xiii) As appropriate, a description of the quality assurance systems and plans to be implemented within the Hub, including national and international standards for the assessments of relevant properties and performance for technologies developed by the Hub;

(xiv) A description of how the Hub will manage its work across the complete spectrum of basic and applied R&D, technology D&D, and behavioral and economic research; and how interaction with private industry will be managed to accelerate technological innovation, including institutional experience/expertise in these activities and any proposed corporate partnerships; and

(xv) A description of how the Hub will manage intellectual property and information sharing.

3. Proposed Research and Development

The DOE Co-applicant must provide detailed information regarding the research and development proposed for the Hub. This section, which may be organized into subtasks, must clearly describe the proposed RD&D and:

(i) Briefly describe the scientific, technical and policy-related background, critically evaluate existing knowledge, and specifically identify the gaps in science, technology and policy-related areas that the Hub is intended to fill;

(ii) State concisely the importance of the RD&D described in the application, how the proposed RD&D lies at the forefront in the Hub's topical area, and how the

proposed RD&D will have an impact on developing innovative new energy technology within the purview of the Hub;

(iii) Describe a balanced and comprehensive program of RD&D that, as needed, supports experimental, theoretical, and computational efforts, considers and addresses potential economic, behavioral and policy-related barriers to technology adoption, and develops new approaches in the Hub‘s research topic during the initial project period;

(iv) Delineate proposed benchmarks, including an explanation as to how the benchmarks will ensure that RD&D remains focused on the proposed short-, intermediate and long-term goals and the approach to measuring performance against the stated benchmarks;

(v) State the proposed approach to rapidly reconfigure RD&D thrusts to respond to key challenges and promising developments;

(vi) Delineate plans for external collaborations and partnerships including utilization of DOE user facilities, if applicable;

(vii) Describe the role and intellectual contribution of the Hub Director, each Principal Investigator, and each senior/key person in the Application;

(viii) Enumerate the relevant scientific, technical and policy-related expertise and experience in the research disciplines needed for project success for senior/key personnel in the application;

(ix) Briefly outline the resources available to the proposed Hub including access to existing research space, instrumentation, data sources, and facilities at the lead institution and its partners;

(x) Outline potential scientific and technical obstacles to achieving the research objectives during the initial project period and approaches to be used to overcome them;

(xi) Outline potential economic, behavioral, and policy-related obstacles to the deployment of technologies developed by the Hub and the strategies for developing approaches to overcoming them;

(xii) Describe the performance monitoring systems to be utilized to ensure the Hub is established within the proposed scope, cost, and schedule;

(xiii) Describe the planned approach to information sharing and data management appropriate for achieving the goals of the proposed Hub;

(xiv) Delineate plans to coordinate multiple RD&D efforts, including integrating subsystems into a prototype energy technology system and incorporating results from behavioral and economic analyses;

(xv) Discuss the integration of basic and applied R&D with technology D&D that will lead to an industrial scale application of Hub innovations;

(xvi) Discuss the integration of results from behavioral, economic and policy-related studies with the technology D&D that will enable wide-scale deployment of Hub innovations;

(xvii) If applicable, provide detailed plans to foster and encourage robust interaction with private industry to accelerate technological innovation and reduce the barriers to movement of new technologies to the marketplace; and

(xviii) (Optional) Provide an account of any preliminary studies that may be pertinent to the proposed R&D. Include any other information that will help to establish the experience and competence of the investigators to pursue the proposed project.

e. Appendices to Project Narrative

Although these appendices should comprise a single file on the Consortium Proposal CD, within the document please clearly label each separate appendix.

Appendix 1: Bibliography & References Cited

Provide a bibliography of any references cited in the project narrative. Please provide this information as an appendix to your project narrative. Each reference must include the names of all authors (in the same sequence in which they appear in the publication), the article and journal title, book title, volume number, page numbers, and year of publication. Include only bibliographic citations. The DOE Co-applicant should be especially careful to follow scholarly practices in providing citations for source materials relied upon when preparing any section of the Application.

Appendix 2: Budget Summary

In simple tabular form, provide a high-level summary of the proposed budget for the Hub that includes the following data by year for each DOE Co-applicant participating in the project, beginning with the lead organization of the DOE Co-applicant: institution name, the Hub operating budget for the institution, the Hub equipment budget for the institution, the names and support levels (in months) of the senior/key personnel supported by the Hub at the institution, and the number and type of other personnel supported by the Hub at the institution (i.e., post-doctoral fellows, graduate students, undergraduate students, technical support, administrative support, etc.). Budget information should be presented as both annual funding and the cumulative funding over the five-year initial award period.

Appendix 3: Hub Intellectual Property (IP) Management Plan

Each Hub should include within their Application a proposed IP Management Plan that ensures and facilitates compliance with Federal IP law and policy, the public interest regarding dissemination of scientific reports/results, and the rapid transfer of technology in the topical area of the Energy Efficient Building Systems Hub. The plan should address how the DOE Co-applicant will handle title to inventions and other IP. Unless the DOE Co-applicant requests a Technology Investment Agreements (TIA), the following statutes governing disposition of title to new inventions under Government agreements will be

followed:

i. The Bayh-Dole Act, 35 U.S.C. 200 et seq., requires that universities, non-profits and small businesses that are participating under a funding agreement have the option to retain title to their own employees‘ inventions.

ii. The Federal Non Nuclear Energy Act of 1974, 42 U.S.C. 5908, which governs disposition of title for all other parties, regardless of whether they receive government funding, requires that the Government obtains title to new inventions unless a waiver is granted. DOE regulations at 10 C.F.R. 784 address the factors that are considered in the granting of waivers, including whether the waiver is needed to secure participation, where private investment is being made or will likely be made, the commercial position of the waiver requestor, etc.

iii. Inventions made by employees of an FFRDC will be subject to the M&O contract terms and conditions with respect to ownership of inventions made by lab employees.

iv. The agreement will provide the capability for the Hub to license other forms of IP such as copyright in software and bailment of biological materials.

This FOA allows the DOE Co-applicant to request a TIA. In a TIA the intellectual property rights are not subject to the requirements of the Bayh-Dole Act or 42 U.S.C. 5908 and are negotiable. If the DOE Co-applicant requests a TIA and DOE determines it is appropriate to award a TIA, patent rights will be negotiated pursuant to the guidance set out in 10 C.F.R. 603.840 through 10 C.F.R. 603.875.

The plan should also address a simplified means of IP licensing by the Hub, and should include a discussion on the means to distribute the benefits (royalties and equity) after expenses of any licensing among appropriate team members.

Appendix 4: Hub Site, Acquisition, Design, and Development Plan

Discuss the plans for locating the proposed Hub. This includes identification of the site or sites where the major activities of the Hub will take place and how the site(s) will be acquired (use of space provided by the host institution(s), leased space, or combinations of these and other options) and prepared for use by the Hub. Describe the proposed size, conceptual layout, and development strategy (including summary-level scope, schedule and cost estimates including alteration and/or renovations for the space, i.e., the estimated cost to build out the space) for the space needed to house and support the research program identified in the narrative. Plans for acquisition of major equipment and instrumentation (items costing $1 million or more) should be included.

Appendix 5: Funding Plan

Discuss the strategy for funding the proposed Hub including, but not limited to, cost sharing (if applicable) and DOE funding.

Appendix 6: Project Timetable

This section should outline as a function of time, year by year, all the major activities or phases of the proposed Hub. The successful DOE Co-applicant will be expected to employ standard project management discipline and must use this project timetable to report progress.

Appendix 7: Biographical Sketches

Provide a biographical sketch for the Hub Director, Principal Investigator(s) and each senior/key person listed in Section A on the R&R Budget form, or proposed as a subawardee or consultant, if they meet the definition of a senior/key person. The designation of multiple Principal Investigators, including Principal Investigators employed by teaming partners, is allowed. The biographical information for each person must not exceed two pages when printed on 8.5" by 11" paper with 1" margins (top, bottom, left, and right), with font not smaller than Times New Roman 12-point font. Include:

Education and Training: For undergraduate, graduate, and post-doctoral education and training, provide institution, major/area, degree, and year.

Research and Professional Experience: Beginning with the current position, please list professional/academic positions in chronological order and include a brief description.

Publications: Provide a list of up to 10 publications most closely related to the proposed project. For each publication, identify the names of all authors (in the same sequence in which they appear in the publication), the article title, book or journal title, volume number, page numbers, year of publication, and website address (if available electronically).

Patents, copyrights, and software systems developed may be provided in addition to or in lieu of publications.

Synergistic Activities: List no more than five professional and scholarly activities related to the effort proposed.

Identification of Potential Conflicts of Interest or Bias in Selection of Reviewers: Provide the following information in this section:

> *Collaborators and Co-editors:* In alphabetical order, list all persons, including their current organizational affiliation, who are, or who have been, collaborators or co-authors with you on a research project, book or book article, report, abstract, or paper most closely related to the proposed project during the 48 months preceding the submission of this application. Also, list any individuals who are currently or have been co-editors with you on a special issue of a journal, compendium, or

conference proceedings most closely related to the proposed project during the 24 months preceding submission of this application. If there are no collaborators or co-editors to report, state "None."

Graduate and Post-doctoral Advisors and Advisees: List the names and current organizational affiliations of your graduate advisor(s) and principal post-doctoral sponsor(s) during the last five years. Also, list the names and current organizational affiliations of your graduate students and post-doctoral associates during the last five years.

Appendix 8A: Hub Director Statement of Employment

Hub Director Statement of Employment: For the Hub Director, submit documentation stating that the proposed Hub Director is either currently an employee of the lead DOE Co-applicant, or has committed to accept employment with the lead organization of the DOE Co-applicant, if the DOE Co-applicant receives a Hub award. The statement of employment, or letter of commitment to accept employment, is limited to one page and must be signed by both the Hub Director and an authorized representative of the lead organization of the DOE Co-applicant.

Appendix 8B: Hub Individual Commitment Statements

Individual Commitment Statement: For each senior/key person, including the Hub Director(s) and Principal Investigator(s), provide a current signed and dated commitment statement that reflects their commitment to this project, including their individual level of time commitment, for a minimum period of five years. Multiple personnel representing the same institution may sign the same letter of commitment, as applicable. Each letter of commitment is limited to one page.

Appendix 9: Current and Pending Support

Provide a list of all current and pending support (both Federal and non-Federal) for the Hub Director, Principal Investigator(s) and senior/key persons, including sub-awardees and consultants, for ongoing projects and pending applications. For each organization providing support, show the total award amount for the entire award period (including indirect costs) and the number of person-months per year to be devoted to the project by the senior/key person. Concurrent submission of an application to other organizations for simultaneous consideration will not prejudice its review.

Appendix 10: Hub Facilities & Other Resources

This information is used to assess the capability of the organizational resources, including sub-awardee resources, available to perform the effort proposed. Identify the facilities to be used (Laboratory, Animal, Computer, Office, Clinical, and Other). If appropriate, indicate their capacities, pertinent capabilities, relative proximity, and extent of availability to the project. Describe only those resources that are directly applicable to the proposed

work. Describe other resources available to the project (e.g., machine shop, electronic shop) and the extent to which they would be available to the project.

Appendix 11: Hub Equipment

List major items of equipment already available for the proposed Hub and, if appropriate, identify their location and pertinent capabilities.

Appendix 12: Statement of Conflict of Interest

At the time of submission, the DOE Co-applicant shall include information identifying potential, apparent, or actual organizational and individual conflicts of interest and proposed mitigation. This shall include the DOE Co-applicant, its team members, and senior/key personnel named in the Application. Negative responses are also required. Prior to award, DOE reserves the right to require the submission of a Conflict of Interest Management Plan describing the DOE Co-applicant's approach to managing conflicts of interest.

Appendix 13: Organizational Letters of Commitment

A single organizational letter of commitment is required from each entity comprising the DOE Co-applicant. Each letter of commitment must be current, signed, and dated from an organization participating as DOE Co-applicant and must be signed by the person authorized to commit the organization to a legally binding agreement for this project. Each organizational letter of commitment is limited to one page.

Appendix 14: Other Information

If you need to elaborate on your responses to questions 1-5 on the "Research and Related Other Project Information" document, please provide this information.

f. Hub Research and Related Budget (TOTAL FED + NON-FED)

Complete the Research and Related Budget (Total Federal & Non-Federal) form in accordance with the instructions on the form and the following instructions. You must complete a separate budget for each year of support requested. The form will generate a cumulative budget for the total project period. You must complete all the mandatory information on the form before the NEXT PERIOD button is activated. You may request funds under any of the categories listed as long as the item and amount are necessary to perform the proposed work, meet all the criteria for allowability under the applicable Federal cost principles, and are not prohibited by the DOE funding restrictions in this announcement (See Section IV.K.).

Hub Budget Justification (Referenced in Field K on this form)

Provide the required supporting information for the following costs (See R&R instructions): equipment; domestic and foreign travel; participants/trainees; material and supplies; publication; consultant services; ADP (Automated Data Processing)/computer services; sub-award/teaming agreements/contractual; equipment or facility rental/user fees; alterations and renovations; and indirect cost type. Provide any other information you wish to submit to justify your budget request. If a non-DOE/NNSA Federal agency and/or their FFRDC contractor will serve as a vendor of materials, supplies, equipment, space and/or scientific and technical advisory services to a proposed Hub, submit evidence of the non-DOE/NNSA Federal agency's authority and agreement to provide said items to DOE as part of the budget justification file. The file automatically carries over to each budget year.

Commitment Letters from Third Parties Contributing to Cost Sharing for Hub

If a third party (i.e., a party other than a DOE, SBA, EDA, or NIST Co-applicant) proposes to provide all or part of any proposed cost sharing, you must provide a letter from the third party stating that it is committed to providing a specific minimum dollar amount of cost sharing. The letter should also identify the proposed cost sharing (e.g., cash, services, and/or property) to be contributed. Letters must be signed by the person authorized to commit the expenditure of funds by the entity.

Budget for DOE/NNSA National Laboratory Contractor (if applicable)

If a DOE/NNSA National Laboratory contractor is to perform any portion of the work, the DOE/NNSA National Laboratory must provide a DOE Field Work Proposal in accordance with the requirements in DOE Order 412.1A, Work Authorization System. This order and a sample of the DOE Field Work Proposal (FWP) form are available at www.management.energy.gov/documents/o4121.pdf . For purposes of satisfying this requirement, the DOE Co-applicant is required to submit the DOE FWP face and budget pages (pages 1 and 2 of the sample form) with the Application as part of the Budget for DOE/NNSA National Laboratory Contractor file. Furthermore, the information requested in blocks 1-15 and 17-19 of the sample FWP must be furnished with this Application. The remainder of the information requested in blocks 16, 20, and 21 of the sample form will be required to be submitted through the DOE Work Authorization System by the successful DOE Co-applicant after selection. In addition, include the required cognizant Federal Contracting Officer approval authorizing the participation of the DOE/NNSA National Laboratory as described in Part III.C. This information is required in addition to the budgetary information requested herein (R&R Budget, R&R Subaward Budget, and Budget Justification, as applicable). Save it as a separate document on the Consortium Proposal CD.

g. R&R Sub-award Budget Form

Budgets for Sub-awardees. You must provide a separate cumulative R&R budget for each sub-awardee, including DOE/NNSA National Laboratory Contractors, that is expected to perform work estimated to be more than $100,000. Download the R&R Budget Attachment from the R&R SUBAWARD BUDGET FORM and e-mail it to each sub-awardee that is required to submit a separate budget. If a sub-award is being proposed for a DOE/NNSA National Laboratory Contractor, then you must also submit the appropriate

Field Work Proposal and cognizant Federal Contracting Officer authorization as described above.

If a sub-award is being proposed for a non-DOE/NNSA FFRDC contractor, the required authorization by the cognizant Contracting Officer for the Federal sponsoring agency must be submitted. Budgets for sub-awardees should be saved as separate files to the Consortium Proposal CD.

h. Hub Project/Performance Site Location(s)

Indicate the primary site where the work of the Hub will be performed. If a portion of the project will be performed at any other site(s), identify the site location(s) in the blocks provided.

Note that the Project/Performance Site Congressional District is entered in the format of the 2 digit state code followed by a dash and a 3 digit Congressional district code, for example VA-001. Hover over this field for additional instructions.

Use the Next Site button to expand the form to add additional Project/Performance Site Locations.

i. Disclosure of Lobbying Activities (SF-LLL)

Any DOE Co-applicant that has paid or will pay any funds other than Federal appropriated funds to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the grant/cooperative agreement must complete and submit Standard Form - LLL, "Disclosure Form to Report Lobbying."

j. Designated Responsible Employee for Complying with National Policies Prohibiting Discrimination

Provide the organization name, project title, and the name, title, and phone number of the Designated Responsible Employee for complying with national policies prohibiting discrimination (see 10 C.F.R. 1040.5). There is no required format for this information.

k. Representation of Limited Rights Data and Restricted Software

Please use the form on the DOE Applicant and Recipient webpage at http://management.energy.gov/business_doe/business_forms.htm .

l. Environmental Evaluation Notification Form

Complete and submit this environmental questionnaire, which can be downloaded from http://www.netl.doe.gov/business/forms/451_1-1-3.doc . Please note that although the National Environmental Policy Act (NEPA) process need not be completed at the time the

Proposal is submitted, the NEPA process must be completed prior to taking any action on the proposed project that could have adverse environmental effects or that would limit the choice of reasonable alternatives.

F. EDA Required Forms

The EDA Co-applicant must complete and submit the *Application for Investment Assistance* (Form ED-900), as well as additional Federal grant assistance forms from the Standard Form (SF) 424 family and certain Department of Commerce (CD) forms, as appropriate. The specific SF forms required with the Form ED-900 depend on whether the EDA Co-applicant seeks construction assistance, non-construction assistance, or both. (Public Works funds may only be used for construction activities, while Economic Adjustment Assistance funds may be used for construction, non-construction, or both; please see Section I.C. for further details.) The following will assist the EDA Co-applicant in determining which forms are required.

a. Forms and Documentation Required if *only* Construction Assistance is Requested

An EDA Co-applicant seeking assistance for an EDA Co-Applicant Scope of Work *with only* construction components is required to complete the following:

- Form ED-900 (*Application for Investment Assistance*) (Please note that Form ED-900 advises applicants that these submissions will only be required if EDA determines that the project merits further consideration. However, for purposes of this joint FOA, **all** of these submissions will be required **at the time of application**. **Please see section F.4. below titled "Special Instructions for Completing Form ED-900" for details.**)
- Form SF-424 (*Application for Federal Assistance*)
- Form SF-424C (*Budget Information—Construction Programs*)
- Form SF-424D (*Assurances—Construction Programs*)
- Form CD-511 (*Certification Regarding Lobbying*)

In addition, the Co-applicant may be required to submit to an individual background screening using the form titled *Applicant for Funding Assistance* (Form CD-346) and to provide certain lobbying information using the form titled *Disclosure of Lobbying Activities* (Form SF-LLL). The Form ED-900 provides detailed guidance to help the applicant assess whether Forms CD-346 and SF-LLL are required and how to access them.

b. Forms and Documentation Required if *only* Non-Construction Assistance is Requested

An EDA Co-applicant seeking assistance for a project *without any* construction components is required to complete the following:

Form ED-900 (*Application for Investment Assistance*) (Please note that Form ED-900 advises applicants that these submissions will only be required if EDA determines that the project merits further consideration. However, for purposes of this joint FOA, **all** of these submissions will be required **at the time of application**. **Please see section F.4. below titled "Special Instructions for Completing Form ED-900" for details.**)

- Form SF-424 (*Application for Federal Assistance*)
- Form SF-424A (*Budget Information—Non-Construction Programs*)
- Form SF-424B (*Assurances—Non-Construction Programs*)
- Form CD-511 (*Certification Regarding Lobbying*)

In addition, the Co-applicant may be required to submit to an individual background screening using the form titled *Applicant for Funding Assistance* (Form CD-346) and to provide certain lobbying information using the form titled *Disclosure of Lobbying Activities* (Form SF-LLL). The Form ED-900 provides detailed guidance to help the applicant assess whether Forms CD-346 and SF-LLL are required and how to access them.

c. Forms and Documentation Required if *both* Construction and Non-Construction Assistance is Requested

An EDA Co-applicant seeking assistance for a project *with both* construction and non-construction components is required to complete the following:

- Form ED-900 (*Application for Investment Assistance*) (Please note that Form ED-900 advises applicants that these submissions will only be required if EDA determines that the project merits further consideration. However, for purposes of this joint FOA, **all** of these submissions will be required **at the time of application**. **Please see section F.4. below titled "Special Instructions for Completing Form ED-900" for details.**)
- Form SF-424 (*Application for Federal Assistance*)
- Form SF-424A (*Budget Information—Non-Construction Programs*)
- Form SF-424B (*Assurances—Non-Construction Programs*)
- Form SF-424C (*Budget Information—Construction Programs*)
- Form SF-424D (*Assurances—Construction Programs*)
- Form CD-511 (*Certification Regarding Lobbying*)

In addition, the Co-applicant may be required to submit to an individual background screening using the form titled *Applicant for Funding Assistance* (Form CD-346)

and to provide certain lobbying information using the form titled *Disclosure of Lobbying Activities* (Form SF-LLL). The Form ED-900 provides detailed guidance to help the applicant assess whether Forms CD-346 and SF-LLL are required and how to access them.

All submissions required and specifically mentioned within the "Note on EDA's Application Process" in the Form ED-900 are discussed in more detail within the body of the Form ED-900.

d. Special Instructions for Completing Form ED-900

Because of the unique nature of this funding opportunity, the EDA Co-applicant is advised that the following modifications to the general application instructions for Form ED-900 apply and must be observed:

There are a number of overall instructions and admonitions given in Form ED-900 that the EDA Co-applicant under this joint FOA should disregard. Disregard the instructions below:

*The EDA Co-applicant should disregard the "Instructions for Electronic and Hardcopy Formats." All applications must be submitted on CD as part of a single application package submitted by the Consortium; hardcopy application forms will not be accepted. Also, please note that the Co-applicant should make sure that they have installed Adobe Acrobat Reader 8.1.3 downloading the application package from Grants.gov and completing and saving this package.

***The EDA Co-applicant should disregard the statement in the "Note on EDA's Application Process" that advises applicants that EDA will request the listed materials only after a project has been determined to merit further consideration**." Rather, all documentation that Form ED-900 advises may be submitted at a later date **must be submitted at the time of Proposal submission**. The following list details the required submissions for each type of EDA project:

For all types of projects:

--A copy of the region's Comprehensive Economic Development Strategy (CEDS) or alternate EDA-approved planning document

--Letters of commitment to document non-EDA funding

For construction projects only:

--USGS map of project site

--Letters of commitment from private beneficiaries of the proposed project (see Section B.5 of the ED-900)

--Comments from the metropolitan area review/clearinghouse agency

--A legal opinion and other documentation, as necessary, verifying the applicant's answer to questions regarding project ownership, operation, maintenance, and management

--An engineering report (all required elements are listed in Section M.3 of the ED-900; no special format is required)

--An environmental narrative (To access a sample containing the required elements, go to http://www.eda.gov/PDF/single_app_narrrative_111008.pdf Note: if the EDA Co-applicant is unable to receive final approval by the deadline for Proposal submissions, EDA will accept a letter from the applicable regulatory agencies stating that the project has conditional approval subject to a series of conditions. If the winning Consortium contains an EDA Application with conditional approval from any of the regulatory agencies specified in the environmental narrative, EDA will include these conditions as part of the award.)

--Documented approval from the State Historic Preservation Officer (SHPO) (Note: if the SHPO or Tribal Historical Preservation Officer (THPO) is unable to give final approval by the deadline for Proposal submissions, EDA will accept a letter from the SHPO/THPO stating that the project has conditional approval subject to a series of conditions. If the winning Consortium contains an EDA Application with conditional SHPO/THPO approval, EDA will include these conditions as part of the award.)

For Revolving Loan Fund projects only:

--Revolving Loan Fund Plan

For non-profit applicants only:

--Certificate of good standing from the state

--A copy of the organization's Articles of Incorporation and By-Laws

--Resolution from a general purpose subdivision of government of a state acknowledging that the organization is acting in cooperation with officials of that subdivision

--Comments from a general purpose government entity (construction projects only)

- The EDA Co-applicant should disregard several aspects of the "General Instructions" in Section A of Form ED-900. The EDA Co-applicant should not

contact EDA regional offices for questions regarding this particular funding opportunity, but rather submit questions via the E-RIC website at www.energy.gov/hubs/eric.htm. In addition, the evaluation criteria referenced in the "General Instructions" do not apply for this particular funding opportunity. The EDA Co-applicant should refer to Section V of this FOA for the pertinent evaluation criteria.

- Directly below the "General Instructions" in Section A, Form ED-900 prompts applicants to indicate the type of investment assistance sought. The EDA Co-applicant should complete this portion of Form ED-900 as follows:

    - In general, the EDA Co-applicant should select either "Public Works," "Economic Adjustment," or "Revolving Loan Fund." (Note: technically, Revolving Loan Fund Assistance is a subset of Economic Adjustment Assistance; however, for the purposes of completing this form, select "Revolving Loan Fund Assistance" if you are applying for this type of assistance; the form will then allow you to populate all required sections for both Economic Adjustment Assistance and Revolving Loan Fund Assistance.)

    - If the EDA Co-applicant is applying for both Public Works and Economic Adjustment Assistance, select "Economic Adjustment," since all sections required for both programs (except for Section L, which is only required if requesting Revolving Loan Fund Assistance) will be enabled.

    - If the EDA-Co-applicant is applying for both Public Works and Economic Adjustment Assistance to include Revolving Loan Fund assistance, select "Economic Adjustment" and then print out an extra copy of the ED-900, complete Section L in black ink, and scan and upload a copy of Section L as an attachment. If applying for assistance under more than one program, clarify this in the answer to question A.2.

Following are modifications to specific sections of Form ED-900 for purposes of this joint FOA.

- Question A.1. Enter "See section _____ of the RIC narrative."

- Question A.2. In addition to describing the EDA Co-applicant Scope of Work, specify the names of the other Co-applicants in your Consortium.

- Question A.4. Enter "See section _____ of the RIC narrative."

- Question A.6. Enter "See section _____ of the RIC narrative."

- Question B.1. Specify the region that is eligible for EDA assistance. In most cases, this will be a subset of the region identified in the RIC narrative.

- Question E.3. Enter '"See section _____ of the RIC narrative." (Note: The EDA Co-applicant will not be prompted to answer this question if you select "Public Works" as the type of assistance sought.)

- Section K. Answer "yes" to the question "Are you applying for a strategy grant under 13 C.F.R. 307.3?" if you are requesting funds for strategic planning or coordination activities; if you are only requesting construction and/or Revolving Loan Fund assistance, select "no." (Note: The EDA Co-applicant will not be prompted to answer this question if you select "Public Works" as the type of assistance sought.)

G. NIST/MEP Required Forms and Narrative

The NIST Co-applicant must complete and submit the following:

- Form SF-424 (*Application for Federal Assistance*)

- Form SF-424A (*Budget Information—Non-Construction Programs*)

- Form SF-424B (*Assurances—Non-Construction Programs*)

- Form CD-511 (*Certification Regarding Lobbying*)

- SF-LLL,(*Disclosure of Lobbying Activities*)

- CD-346 (*Applicant for Funding Assistance*) (if applicable, see Form ED-900 to determine if required)

- A Partnership Center Narrative and Budget Narrative. This narrative should describe how the NIST Co-applicant will encourage:

  (1) The participation of individuals from industry, universities, State governments, and Federal agencies in cooperative technology transfer activities, as well as efforts to make new manufacturing technology developed within the Energy Hub and E-RIC usable by United States-based companies.

  (2) The successful implementation of advanced technology and techniques developed by the DOE Co-applicant and/or E-RIC Partners;

  (3) The proper documentation and leveraging of a particular advanced technology or process;

  (4) The successful sharing or dissemination of information related to manufacturing technologies among industry, universities, non-profit economic development organizations and state governments; and

(5) Efforts to maximize economic, environmental, societal and innovation impact in the context of regional, state, and national challenges (provide a market analysis; quantitative measures for job and business creation, and technology transfer; and competitive benchmarks).

- A Management, Governance, and Organization Plan. This Plan should articulate roles and responsibilities, including commitment of partners (timeframe, funding, role, contribution); evidence-based decision making protocols; a sustainability plan (including all out-years).

H. SBA Required Forms and Narrative

The SBA Co-applicant must complete and submit the following:

- Form SF-424 (*Application for Federal Assistance*). Provide for initial year. Also include separate SF-424s for each optional year budget period.
- Form SF-424A (*Budget Information—Non-Construction Programs*)
- Budget Detail Worksheet (pages A9-A11). Provide for initial year. Also include separate SF-424s for each optional year budget period (download form from www.sba.gov/aboutsba/sbaprograms/sbdc/funding/sbdc_forms.html .
- Indirect Cost Rate Agreement. If more than one Small Business Development Center is applying as an SBA Co-applicant, only submit an Indirect Cost Rate Agreement for the lead center claiming indirect costs.
- Form SF-424B (*Assurances—Non-Construction Programs*)
- SF-LLL (*Disclosure of Lobbying Activities*)
- SBA Form 1623 (*Certification Regarding Debarment, Suspension, and Other Responsibility Matters, Primary Covered Transactions*)
- *Certification Regarding Drug-Free Workplace Requirements*
- SBA Form 1711 (*Certification Regarding Lobbying SBA Form 1711*)
- *Cash Match and Program Income Certification*
- SBA Form 1224 (*Cost Sharing Proposal SBA*)
- Technical narrative, with appendices as applicable. Provide a strategic plan to provide counseling, training and technical assistance relating to:
    - Technology licensing;
    - Technology transfer;

- Commercialization and deployment of energy technology;
- Funding and technical assistance for early stage firms;
- Education and workforce training and development; and
- Export assistance

The technical narrative should cover the base year as well as up to three option years. Planned milestone accomplishments for the base year (download template from www.sba.gov/aboutsba/sbaprograms/sbdc/funding/sbdc_forms.html)

I. Submission Method, Date, and Time

The Consortium must submit six (6) copies of a compact disc (CD), with each CD containing all required forms and narratives from all Co-applicants. **Proposals should not be submitted via Grants.gov**.

Proposals must be received NO LATER THAN 5:00 PM Eastern Time on May 6, 2010, at the following address:

Maureen Klovers
Economic Development Administration
Department of Commerce
Room 7019
1401 Constitution Ave. N.W.
Washington, DC 20230

Proposals shall be submitted in sealed envelopes or packages labeled with 'Fiscal Year (FY) 2010 Energy Efficient Building Systems Regional Innovation Cluster Initiative,' and the name of the Consortium. The CDs must be labeled with the Consortium name and verified as virus-free. **The Granting Agencies will not review any Proposals submitted on CDs on which viruses are detected.**

Consortia have three options for submission:

- Hand delivery to the address specified above;
- Submission by U.S. Mail. Please note that submission through the U.S. Mail is not encouraged due to ongoing irradiation and screening processes. Department of Commerce mail security measures may delay receipt of United States Postal Service mail for up to two weeks. Therefore, communities that submit paper submissions are advised to use guaranteed overnight delivery services; or
- Submission by a commercial carrier service. Please note that Consortia electing to submit Proposals by means other than the U.S. Mail, including commercial courier services, assume full responsibility for ensuring that Proposals are

received at the address specified above by 5:00 p.m. Eastern Time on May 6, 2010.

Any Proposal received at the address specified above after 5:00 p.m. Eastern Time on May 6, 2010, will not be considered unless it is received before award is made and:

- The Proposal was sent by registered or certified U.S. Mail not later than 5:00 p.m. Eastern Time on May 1, 2010; or

- The Proposal was sent by commercial carrier service not later than 5:00 p.m. Eastern Time on May 3, 2010.

A revised Proposal must be labeled with the phrase 'Revised Proposal' on both the sealed envelope/package and on the CDs. In the event that the Government receives multiple Proposals from the same Consortium in response to this FOA, it will only review the Proposal marked 'Revised Proposal.' In the event that none of the multiple submissions from a single Consortium are labeled 'Revised Proposal,' the Government will evaluate the Proposal that was received last.

J. Intergovernmental Review (Executive Order 12372)

The EDA Co-applicant is subject to the requirements of Executive Order 12372, "*Intergovernmental Review of Federal Programs*," which requires consultation with State and local government in accordance with 13 C.F.R. §302.9. To find out more about a State's process under Executive Order 12372, the EDA Co-applicant may contact their State's Single Point of Contact (SPOC). Names and addresses of some States' SPOCs are listed on the Office of Management and Budget's (OMB) home page at www.whitehouse.gov/omb/grants/spoc.html.

K. Funding Restrictions

DOE Funding Restrictions

The Hub will be funded at a total of $22 million in FY 2010 and up to $10 million of this total may be devoted to infrastructure start-up for the Hub. Allowable costs include those necessary to house the Hub (including a possible lease for the first five years of the project), to renovate laboratories as needed, and to purchase research equipment and instrumentation. No new construction (new buildings or additions to existing buildings) will be allowed in the Hub award.

Although DOE funds are restricted in this manner, EDA funds may be used to fund new construction carried out by an eligible EDA Co-applicant.

EDA Funding Restrictions

EDA funds awarded cannot necessarily pay for all the costs that the recipient may incur in the course of carrying out the project. EDA allowable costs are determined in accordance with the following regulations (incorporated by reference at 15 C.F.R. parts 14 and 24): (i) 2 C.F.R. part 220, "*Cost Principles for Educational Institutions (OMB Circular A-21)*"; (ii) 2 C.F.R. part 225, "*Cost Principles for State, Local and Indian Tribal Governments (OMB Circular A-87)*"; (iii) 2 C.F.R. part 230, "*Cost Principles for Nonprofit Organizations (OMB Circular A-122)*"; and (iv) Federal Acquisition Regulation Subpart 31.2, "*Contracts with Commercial Organizations*," codified at 48 C.F.R. § 31.2. Applicable administrative requirements and federal cost principles are incorporated by reference into the terms and conditions of each EDA award. Generally, costs that are allowable include salaries, supplies and other expenses that are reasonable and necessary for the completion of the EDA Co-applicant Scope of Work. Indirect costs are not allowed on construction projects under the (i) Public Works and Economic Development Facilities and (ii) Economic Adjustment Assistance Programs.

Funding Restrictions for NIST/MEP

The NIST funding periods and funding amounts referenced in this notice and request for proposals are subject to the availability of funds. The Department of Commerce and NIST will not be held responsible for Proposal preparation costs. Publication of this notice does not obligate the Department of Commerce or NIST to award any specific grant or cooperative agreement or to obligate all or any part of available funds. No funding is anticipated at this time to provide further support beyond the award period to any SBA Co-applicant Scope of Work that may be funded pursuant to this FOA.

Funding Restrictions for SBA

SBA funds awarded cannot necessarily pay for all the costs that the recipient may incur in the course of carrying out the project. SBA allowable costs are determined in accordance with the following regulations: (i) 2 C.F.R. Part 220, "Cost Principles for Educational Institutions (OMB Circular A-21)"; (ii) 2 C.F.R. Part 225, "Cost Principles for State, Local and Indian Tribal Governments (OMB Circular A-87)"; (iii) 2 C.F.R. Part 230, "Cost Principles for Nonprofit Organizations (OMB Circular A-122)"; and (iv) Federal Acquisition Regulation Subpart 31.2, "Contracts with Commercial Organizations," codified at 48 C.F.R. § 31.2. Applicable administrative requirements and federal cost principles are incorporated by reference into the terms and conditions of each SBA award. Generally, costs that are allowable include salaries, supplies and other expenses that are reasonable and necessary for the completion of the SBA Co-applicant Scope of Work.

V. Proposal Review Information

A. Technical Merit Evaluation Criteria for DOE Evaluation of the DOE Co-applicant's Application

(i) Scientific and Technical Merit of the Project (25%)

- The degree of innovation - the extent to which Hub RD&D activities are at the forefront of energy efficient buildings science, technology and policy studies.
- The likelihood of the proposed approach to drive down costs of energy efficient building technologies.
- The adequacy of the work plan in identifying barriers and risks, and proposing approaches to overcome them.
- The extent to which the work plan is clearly stated, organized, and achievable, and technically feasible. Adequacy of proposed tasks, milestones, deliverables, performance metrics, decision points, etc.
- The degree to which the Hub provides opportunities to inspire, train, and support leading scientists and policy experts of the future who have an appreciation for the global energy challenges, including specific plans for education, outreach, and training.

(ii) Qualifications of Personnel and Adequacy of Resources (25%)

- Capabilities, experience, qualifications and credentials of key Hub personnel.
- Adequacy of the letters of commitment for each Hub member's participation and/or cost share.
- Adequacy of infrastructure and resources proposed to support achievement of the proposed Hub objectives, including the capabilities of the lead DOE Co-applicant and participants to comprehensively address all aspects of the proposed project.

(iii)Management/Integration Plan (25%)

- Adequacy of the plan to integrate multiple RD&D efforts, including basic science, engineering development, technology demonstration and transfer, and policy-related research.
- Extent to which the Hub management plan ensures that multiple investigators throughout the Hub will communicate and coordinate their research efforts.

- Extent to which the organizational structure includes central RD&D management structure that will clearly delineate the roles and responsibilities of key personnel.

- The adequacy of the proposed approach for external guidance, including plans for the Hub's external advisory committee.

(iv) Technology and Innovation Transfer Plan (25%)

- The adequacy of the Intellectual Property (IP) Plan to describe proposed guidelines, principles, and strategies governing IP associated with the Hub.

- Comprehensiveness of plan to disseminate results of research to industry.
- Adequacy of the plan to foster and encourage robust interactions with industry to accelerate technological innovation and reduce the barriers to moving new technologies into the marketplace.
- Likelihood that the project will result in technology deployment and commercial development.
- Clarity of explanation of intended market impact.
- Extent to which proposed work will enhance or expedite manufacturing, testing and evaluation of energy efficient building technologies.
- Adequacy of plan to disseminate results of economic, policy and behavioral factors research, including policy innovation in finance, regulatory frameworks and communications.

In addition, the DOE technical merit review will also consider the following unweighted program policy factors:

- Potential for the Hub to successfully integrate its activities with the E-RIC.
- Potential for the Hub to have access to and collaboration with research groups in related fields.
- Potential for the Hub to attract additional pre-eminent researchers and managers beyond the initial staff involved in the Application.
- Potential for the Hub to demonstrate a new paradigm for the management of integrated programs of research, development and demonstration.
- Extent to which Hub personnel have experience working with federal, state, or local organizations with policy-making responsibilities affecting buildings.
- Total amount of DOE funds available.

B. Technical Merit Evaluation Criteria for EDA Evaluation of EDA Co-applicant's Application

i. Qualifications of EDA Co-applicant's key personnel to perform the proposed project

ii. Quality of EDA Co-applicant's proposed management, and the extent to which the proposed project effectuates EDA's investment priorities, which are:

- **Collaborative Regional Innovation**. Initiatives that support the development and growth of innovation clusters based on existing regional competitive strengths. Initiatives must engage stakeholders; facilitate collaboration among urban, suburban and rural (including Tribal) areas; provide stability for economic development through long-term intergovernmental and public/private collaboration; and support the growth of existing and emerging industries.
- **Public/Private Partnerships**. Investments that use both public and private sector resources and leverage complementary investments by other government/public entities and/or non-profits.
- **National Strategic Priorities.** Initiatives that encourage job growth and business expansion in clean energy; green technologies; sustainable manufacturing; information technology (e.g., broadband, smart grid) infrastructure; communities severely impacted by automotive industry restructuring; natural disaster mitigation and resiliency; access to capital for small and medium sized and ethnically diverse enterprises; and innovations in science, health care and alternative fuel technologies.
- **Global Competitiveness**. Investments that support high growth businesses and innovation-based entrepreneurs to expand and compete in global markets.
- **Environmentally-Sustainable Development**. Investments that encompass best practices in 'environmentally sustainable development,' broadly defined, to include projects that enhance environmental quality and develop and implement green products, processes, and buildings as part of the green economy.
- **Economically Distressed and Underserved Communities**. Investments that strengthen diverse communities that have suffered disproportionate economic and job losses and/or are rebuilding to become more competitive in the global economy.

iii. The extent to which the EDA Co-applicant's proposal for EDA funding reflects an outstanding, high quality, and meaningful contribution to the Consortium's overall Proposal and evaluation under Section V.E. of this FOA.

iv. Feasibility of proposed project and project readiness. EDA may consider past performance of the EDA Co-applicant with respect to the receipt of and the performance of prior awards of federal assistance under this factor

v. Quality and amount of local match and/or related private investment offered as part of the project.

C. Technical Merit Evaluation Criteria for NIST Evaluation of NIST Co-applicant's Application

i. The extent to which the Application proposes to utilize innovative or collaborative approaches to developing and operating a Regional Innovation Partnership program;

ii. The extent to which the Application proposes to improve the competitiveness of industries in the region in which the MEP Center is located; and

iii. The extent to which the Application proposes to contribute to the long-term economic stability of the region.

D. Technical Merit Evaluation Criteria for SBA Evaluation of SBA Co-applicant's Application

i. Availability of subject matter expertise and sufficient capacity and ability to train and advise entrepreneurs on starting, converting, or developing businesses that perform or support: the design and construction of high performance green buildings, the use of renewable energy sources, the development and commercialization of clean technology, and/or energy efficient practices;

ii. Need for project services among entrepreneurs in the targeted region, as documented by statistics, demographics, case studies, research, etc.;

iii. Ability to assist entrepreneurs in securing financing for activities related to the design and construction of high performance green buildings, the use of renewable energy sources, the development and commercialization of clean technology, and energy efficient practices;

iv. Project design and methodology that facilitate easily traceable, accurate reporting of project outcomes and deliverables;

v. Intent and capability to provide project services to the entire E-RIC, either individually or jointly in collaboration with neighboring SBDC networks in cases where the E-RIC boundaries extend beyond the SBDC's normal coverage area; and

vi. Commitment to working with other Consortium members to fully integrate its delivery of project services into the broader E-RIC.

E. Technical Merit Evaluation Criteria for Energy Regional Innovation Cluster

a. Demonstration of Regional Innovation Cluster (RIC) Best Practices (20%)

The extent to which the proposed project embodies best practices in the development and growth of regional innovation clusters. Specifically, the interagency panel will evaluate the Consortium's:

1. **Integration of Planning and Implementation across E-RIC Components**. The degree to which the application reflects an integrated approach with respect to the planning and implementation of all of the following:
    - Existing and proposed basic and applied research and development activities;
    - Technology licensing;
    - Technology transfer;
    - Commercialization and deployment of energy technology;
    - Funding and technical assistance for early-stage firms;
    - The development and support of the region's existing manufacturing base for the purpose of cultivating relationships with the emerging energy efficient building systems cluster;
    - Regional infrastructure upgrades;
    - Business and job creation; and
    - The development, support, and coordination of education and training programs that meet the needs of aspiring workers and employers in the region, including, but not limited to, efforts to coordinate with the Workforce Investment Act program, Registered Apprenticeship program, and the Perkins program, especially by including all elements of Programs of Study as defined by section 122(c)(1)(A) of the Perkins Act in proposed career and technical education plans.
2. **Identification and Justification for a Cohesive, Evidence-Based Region**. The strength of the arguments and data justifying the creation and location of the proposed innovation cluster in the specified region, including evidence that the region can support the cluster initiative and is uniquely positioned to succeed.
3. **Planning for Long-Term Cluster Resilience**. The degree to which Consortium demonstrates an understanding of how the E-RIC may grow, change and develop over time, in terms of new strategic alliances, diversification of focus, new capital investment resources, accommodation of new trends and technologies, and resilience in the face

of an economic downturn or unanticipated events. The degree to which the Consortium demonstrates a deep understanding of short and long-term project risks and articulates a proactive strategy to predict, monitor, mitigate, and manage risks.

4. **Breadth and Depth of Participation of E-RIC Partners**. The degree to which the Consortium demonstrates the participation and commitment of a broad spectrum of regional innovation cluster partners, including the local STEM (Science, Technology, Engineering, and Math) community (with an emphasis on scientists and engineers engaged in research and development related to energy efficiency in buildings), community organizations, local and state agencies, economic development organizations, universities, institutions of higher education including community and technical colleges, Registered Apprenticeship programs, agencies and institutions providing secondary education (including career and technical education programs), One-Stop Career Centers, workforce investment boards, foundations, venture capitalists, private banks, industry associations, private sector firms, and labor organizations.
5. **Stakeholder Consultation and Buy-In**. The degree to which the Consortium's Stakeholder Analysis indicates robust consultation of local government entities, the general public, private sector firms, foundations and community organizations, labor organizations, sources of capital and other stakeholders not directly involved as E-RIC Partners, and the degree to which the proposed scope of work reflects input from Stakeholders. The extent to which the surrounding community has demonstrated support for the proposed project.
6. **Leveraged Resources**. The interagency panel will consider the type, nature, and amount of leveraged resources (both monetary and in-kind) provided by state and local governments, as well as foundations, non-profits, institutions of higher education, and the private sector as applicable; the strength of the commitment to provide these resources; and the breadth and depth of these resources, as well as how well these resources are targeted to support the cluster. Specifically, the interagency panel will consider:

- The extent to which the proposed project will be integrated with ongoing federal investments in the areas of energy research, economic and business development, education, and workforce development.
- The type and amount of state and local match (including in-kind support), in addition to the amount of private sector investment pledged, proposed for the overall project as evidence of the level of commitment of the aforementioned E-RIC Partners.

b. Long-Term Economic Benefit (20%)

The extent to which the proposed project demonstrates the potential for substantial long-term[5] economic benefits for the region and for the nation as a whole. Specifically, the interagency panel will consider:

i. The likelihood that the project will result in a substantial net gain in long-term regional employment and regional GDP;

ii. The likelihood that the project will stem job losses and stabilize distressed communities;

iii. The likelihood that the project will result in a substantial net gain in _high impact' businesses and other profit generators[6] as well as opportunities for the service industries that support these businesses;

iv. The likelihood that the project will generate substantial, commercially-exploitable intellectual property or other forms of innovation;

v. The likelihood that exploitable intellectual property and innovation can and will be commercially developed and deployed;

vi. The extent to which the project will support and expand the region's existing manufacturing base, allow for the re-purposing of idle; manufacturing assets as needed, and create new products and markets for U.S. manufacturing firms;

vii. The likelihood that the project will result in a substantial increase in U.S. exports of products and services;

viii. The quality of the jobs expected to be created by the federal investment (and related non-federal investments) in the cluster, either directly or indirectly;

ix. The extent to which the project will create career advancement opportunities for individuals at all educational levels and promote lifelong learning;

x. The likelihood that workforce development components of the proposed project will lead to substantial numbers of participants in training programs being placed in jobs related to the cluster, and the likelihood that the wages of these workers will increase substantially as a result;

xi. The probability that the project will enable the cluster to become self-sustaining in the long-term, even in the absence of a significant future infusion of federal funds.

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[5] For the purposes of this FOA, _long-term' effects are those expected to occur over the next decade. This is consistent with the BLS use of the term _long term' in its employment forecasts.

[6] For the purposes of this FOA, _high impact businesses' refers to those that double their sales within four years. Source: Small Business Administration. —High Impact Firms: Gazelles Revisited." http://www.sba.gov/advo/research/rs328tot.pdf .

c. Commitment, Competency, and Track Record of E-RIC Personnel (20%).

The extent to which the Consortium can demonstrate the active involvement of personnel with a strong commitment to the project, each of its components, and the partnerships it encompasses, and the degree to which it commits personnel with demonstrated expertise and success in project management, basic and applied R&D, education, workforce development, and business and economic development. Specifically, the interagency panel will evaluate the:

1. **Strength of Key Personnel within Project Components and in the E-RIC as a Whole**. The interagency panel will evaluate each Consortium's key personnel and consider the leadership team of each Co-applicant identified in the application. Specifically, the interagency panel will evaluate:

   - The extent to which the senior leadership team for all project components, as well as the E-RIC as a whole, have proven track records of success in project, program, and personnel management in efforts of equivalent or greater magnitude and complexity;
   - The extent to which key personnel for the project demonstrate expertise and familiarly with the region's current economic landscape, as well as existing and potential resources in the region, including the business and finance communities, institutions of higher education including universities and community colleges, and workforce development resources;
   - The degree to which the Co-applicants demonstrate success linking R&D communities to business commercialization opportunities; and
   - The degree to which the Co-applicants' key personnel demonstrate past success in counseling and training entrepreneurs, growing emerging clusters, and closing workforce skill gaps.

2. **Coordinated and Effective Management of the E-RIC.** The interagency panel will evaluate the Consortium's plan for the management and coordination of the E-RIC as a whole, as articulated by the various sections of the Overarching RIC Narrative, including but not limited to the Overview of the Proposed Project, E-RIC Partner Involvement Plan, Proposed Project Performance Tracking and Measurement, Communications Plan, and Risk Management Plan, as well as each Co-applicant's past success in similar endeavors. Specifically, the interagency panel will evaluate:

   - The degree to which the Co-applicants identified in the application, as well as the identified E-RIC Partners, have a proven track record of success in collaborating to attain specific regional goals in the areas of energy research and commercialization, economic/business development, workforce development, and education;

- The degree to which the Consortium demonstrates a thoughtful plan for the effective, and coordination of each components of the project to achieve the stated goals of this E-RIC, and the degree to which this plan clearly identifies roles, responsibilities, and a strategy for communication, coordination, and issue resolution among the E-RIC Partners;
- The degree to which the Proposal reflects evidence-based best practices in the development and commercialization of research, and in the establishment and/or expansion of businesses to increase regional GDP, create jobs, and facilitate the conversion of excess manufacturing capacity for new industry and product development; and
- The degree to which each Co-applicant's performance-monitoring and management systems are adequate to ensure all project components are achieved within the scope, cost, and schedule proposed in the application.

3. **Coordinated and Effective Data Collection and Information Sharing.** The interagency panel will evaluate:

- The degree to which the planned approach to data sharing and data management is appropriate for monitoring and reporting progress towards achieving the goals of the E-RIC, and for contributing to a culture of continuous improvement.
- The extent to which the Consortium's proposed self-evaluation measures for assessing the progress of the regional innovation cluster's creation and establishment reflect careful consideration of the objectives set forth in Section I of this FOA.
- If partners are geographically dispersed, the degree to which the Co-applicants and E-RIC Partners demonstrate a commitment to using state-of-the-art technology and virtual meetings to enable meaningful long-distance collaboration.

d. Commitment to Inclusion (15%)

The degree to which the Consortium and its E-RIC Partners demonstrate a commitment to the inclusion of Underrepresented Groups, as well as historically excluded geographic areas. Specifically, the interagency panel will consider:

i. The degree to which the Consortium as a whole, as well as each Co-applicant, demonstrate a track record of advancing the educational and economic opportunities of Underrepresented Groups. The degree to which the Consortium has provided a clear plan that demonstrates how the Consortium as a whole, and each Co-applicant as applicable, will broaden educational and economic opportunities for Underrepresented Groups as well as small and disadvantaged businesses and increase the number of

members of Underrepresented Groups in ‗Good Jobs' within the cluster. The degree to which the plan demonstrates that the Co-applicants, where applicable, are committed to the inclusion of Underrepresented Groups in engineering and science at the secondary, undergraduate and graduate level, in faculty and positions of academic leadership, and in scientific, technological, and management positions throughout the cluster. The degree to which the Consortium's Inclusion Plan includes appropriate outcome measures and demonstrates a clear and effective strategy for achieving these outcomes.

ii. The degree to which the Consortium members demonstrate a track record of building direct and deliberate bridges between the region's dynamic commercial centers and historically excluded areas in the region, to include inner cities and rural areas as applicable, and linking these areas to educational and economic opportunities.

e. Commitment to Developing a Skilled Workforce (15%)

The degree to which the Consortium and its education, workforce, and employer partners demonstrate a clear, comprehensive, and effective strategy for the recruitment, training, placement, and retention of a skilled workforce for the regional innovation cluster. Specifically, the committee will consider:

i. The extent to which the labor market analysis contained in the strategy is complete and comprehensive, makes extensive and appropriate use of data to analyze both current conditions as well as future needs, and clearly identifies and analyzes gaps between current and projected demand in employment in the regional innovation cluster;

ii. The extent to which the proposed strategy addresses the deficiencies in the existing education and training capacity of the region to develop a skilled workforce, including both the training needs of the Hub and the regional innovation cluster, and the preparation of students at the secondary and postsecondary level to enter into such training;

iii. The extent to which the proposed strategy appropriately involves 1) key educational and workforce entities in the region (including labor organizations, Registered Apprenticeship programs, adult education centers, workforce investment boards, One-Stop Career Centers, and institutions of higher education including community colleges and career and technical colleges) as partners for building strong career pathways for youth and adults, and 2) community-based organizations to provide outreach, employment and supportive services, and other services for youth and adult workers;

iv. The extent to which the proposed strategy aligns existing secondary and postsecondary education and training programs, coordinating both the use of funds and programmatic objectives, including, but not limited to, Workforce Investment Act programs, Registered Apprenticeship programs, and Programs of Study as described in the Carl D. Perkins Career and Technical

Education Act of 2006 programs, especially by including all elements of Programs of Study as defined by section 122(c)(1)(A) of the Perkins Act in proposed career and technical education plans;

v. The extent to which the proposed strategy will provide workers with the skills and related industry-recognized degrees, credentials, or certificates needed for employment, and will reflect close coordination with private sector employers;

vi. The extent to which the strategy will promote a diverse workforce reflecting the demographics of the region‘s population and provide employment opportunities in the regional innovation cluster for low-income workers, aspiring and incumbent low-skill workers, and other disadvantaged workers while addressesing the obstacles of these worker populations to attaining and retaining employment;

vii. The extent to which the strategy identifies clear goals and objectives for effective outreach to recruit workers from underserved communities, to include outreach to schools serving census tracts with high levels of poverty, schools with high levels of free lunch eligible students, and/or census tracts with high levels of unemployment; and

viii. The demonstration of a commitment to listing all job openings at the Hub and the regional innovation cluster on the Job Bank in the state in which the cluster is located.

f. Demonstration of Environmental and Energy Security Objectives (5%)

The interagency panel will evaluate:

i. The extent to which the application presents a clear and specific plan that demonstrates a likelihood of generating and commercializing break-through technologies that assist in attaining American energy security, reducing America‘s carbon footprint, and attaining other national strategic objectives; and

ii. The extent to which the Consortium and the E-RIC demonstrate and incorporate technologies, programs, business processes, and physical and operational design to reduce the Consortium and E-RIC‘s own use of energy, reduce greenhouse gas emissions, eliminate or reduce waste streams, and adopt sustainable business practices, as well as the extent to which the Consortium and E-RIC demonstrate protection of natural areas and use of non-traditional green building and transportation technologies to minimize adverse impacts on environmental quality.

g. Feasibility of the Project Budget and Adequacy of Facilities (5%)

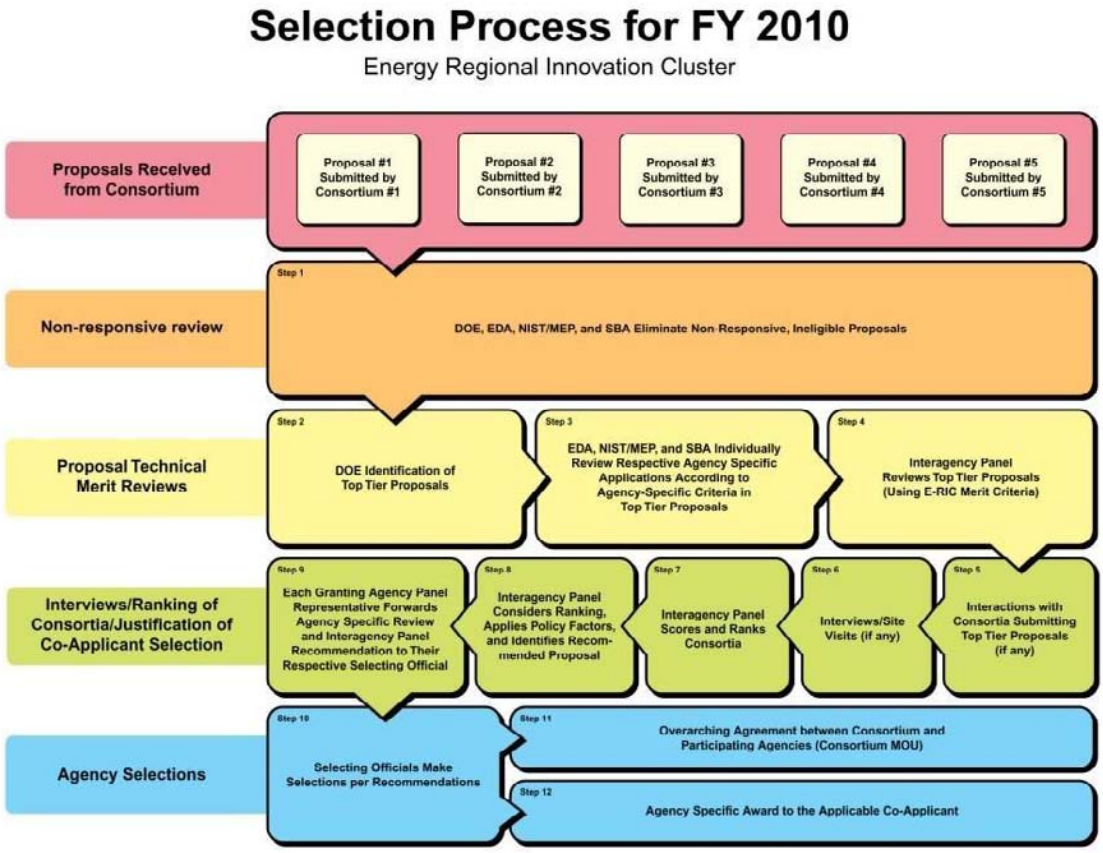
The interagency panel will evaluate:

i. The feasibility of the project budget of each Co-applicant, including but not limited to the reasonableness and the allowability of project costs and the

feasibility of accomplishing the Co-applicant Scope of Work in the target geographic region, within the budget provided, within the period of performance; and

ii. The likelihood that the proposed facilities for the E-RIC meet the needs of the proposed E-RIC.

F. Evaluation and Selection Procedures



Proposals received in response to this FOA will be reviewed and selected in accordance with the following process:

Non-responsiveness Review

1. *Phase 1: Initial eligibility and responsiveness review.* The Granting Agencies will conduct an initial eligibility and responsiveness review to determine if the submitted Proposals (a) contain all required items for submission, as specified in Section IV of this FOA, and (b) include agency-specific Applications that meet the relevant agency-specific eligibility criteria, as specified in Section III of this FOA.

Technical Merit Reviews

2. *Phase 2: DOE review of the Hub-specific portion of the Proposal.* In this phase, DOE will review only those Proposals that were determined to be eligible and responsive during the prior phase of review. DOE will review the Hub-specific portion of the Proposal provided by the DOE Co-Applicant (see Section V.B. for the Hub-specific criteria against which Proposals in this phase will be reviewed). DOE will conduct this merit review in accordance with the nonbinding guidance provided in the "Department of Energy Merit Review Guide for Financial Assistance and Unsolicited Proposals." This guide is available under Financial Assistance, Regulations and Guidance at http://www.management.energy.gov/documents/meritrev.pdf. Following this merit review, DOE will apply the DOE-specific program policy factors and identify the top tier of DOE Co-applicants based on the Hub evaluation criteria and the program policy factors. The Proposals associated with this top tier ("Top Tier Proposals") will continue to Phase #3.

3. *Phase 3: EDA, NIST/MEP, and SBA review of Proposals.* Representatives from the Granting Agencies other than DOE will perform an agency-specific review of their respective Applications for funding contained within the Top Tier Proposals. This review will assess the quality of the Applications based on the agency-specific criteria set forth in this FOA.

4. *Phase 4: Technical merit review of Consortium Proposals by interagency panel*. In this phase, an interagency review panel composed of representatives from the Participating Agencies will review all Top Tier Proposals. In this phase, the interagency review panel will evaluate each Top Tier Proposal based on the E-RIC evaluation criteria listed in Section V.E.

5. *Phase 5: Interactions with Consortia Submitting Top Tier Proposals.* The interagency panel may interact with Consortia that submitted Top Tier Proposals as identified in Phase #2. In these interactions, Consortia may be notified of any shortcomings identified in Phases #2, #3, or #4 and be given the opportunity to submit supplemental materials to address these shortcomings. The interagency panel may elect to skip this phase; however, if the interagency panel elects to interact with any Consortium, it will interact with all Consortia submitting Top Tier Proposals.

6. *Phase 6: Interviews and Site Visits.* The interagency panel may elect to conduct interviews and/or site visits with the Consortia that submitted Top Tier Proposals. These interviews may be used to verify information

contained within the Proposal, as well as within any supplemental materials provided, and to clarify any remaining ambiguities. Interviews may be in-person or via tele- or video-conference, and the interagency panel may request the E-RIC Partners identified in the Proposal to participate. If the interagency panel elects to conduct interviews with any Consortium, it will conduct interviews with all Consortia submitting Top Tier Proposals. Site visits will be conducted at the interagency panel's discretion.

7. *Phase 7: Interagency Panel Scores and Ranks Consortia.* The interagency panel will then review the Top Tier Proposals, along with the results of any interviews or site visits and any supplementary materials submitted by the Consortia pursuant to Phase #5, and rate the Top Tier Proposals based on the E-RIC evaluation criteria in Section V.E. Proposals that either a) are deemed 'unsatisfactory' on the E-RIC evaluation criteria or b) are deemed 'unsatisfactory' for funding by any Granting Agency on the basis of its agency-specific evaluation will be eliminated from further consideration. The interagency panel will then assign scores to the remaining Proposals based on the E-RIC evaluation criteria, which may be informed by the agency-specific technical merit reviews from EDA, NIST/MEP, and SBA.

   If all Top Tier Proposals are eliminated in Phase #7, the interagency panel will not proceed to Phase #8. In this case, each Granting Agency may rely upon its own analysis and use the funds available under the FOA to fund any eligible Co-applicant it so chooses, or make no selection at all.

8. *Phase 8: Interagency Panel Identification of Recommended Proposal.* The interagency panel will then apply the following policy factors (listed in order of importance) to the remaining Top Tier Proposals:

   - Quality of science and technology research and development set forth in the Proposal;
   - Likelihood of superior attainment of the goals for this pilot project, as set forth in Section I.A. of this FOA;
   - Likelihood of significant economic impact on a severely distressed community, as measured by significantly higher unemployment rates or significantly lower per capita income than the nation as a whole;
   - Prior award performance of Co-applicants;

- Adequacy of information necessary for the funding agencies to make a National Environmental Policy Act (NEPA) determination and draft necessary documentation before recommendations for funding are made to obligate funds.

The first policy factor ("quality of science and technology research and development set forth in the Proposal") will be given the greatest weight.

The interagency panel will determine, based on its ranking and the above policy factors, which Proposal it will recommend (the "Recommended Proposal") for funding to the Granting Agencies. The interagency panel will recommend funding the top-ranked Proposal from Phase #7 unless the panel recommends another Top Tier Proposal on the basis of the application of the above policy factors. Each Granting Agency's representative on the interagency panel will recommend to their agency's Selecting Official that their agency fund their respective Co-applicant from the Recommended Proposal.

Negotiation and Selection Process

9. *Phase 9: Recommendation to Agency Selecting Officials and Agency Award Selections.* The interagency panel members representing Granting Agencies will then forward to their respective Selecting Officials (i) a memorandum recommending the selection of the Recommended Co-Applicant for award together with (ii) the Recommended Proposal and the ranking of the Top Tier Proposals by the interagency panel. Although it is anticipated that the Selecting Officials will be guided by their respective staff's recommendation, each Selecting Official does retain the right to not make an award in conjunction with this FOA.

10. *Phase 10: Negotiation of Consortium MOU and Final Awards.* After the selected Proposal has been identified but prior to awards, the interagency panel will engage in negotiations with the Consortium in order to establish a collective agreement among all Consortium Co-applicants and all agencies involved in the interagency panel regarding certain matters proposed in the Consortium's Proposal. The Consortium MOU will establish the long-term commitments of the Consortium as a whole to the management and facilitation of the E-RIC. Each Selecting Official may also enter into individual discussions with its selected recipient in order to negotiate and finalize a satisfactory award instrument consistent with the terms in the Consortium MOU. Such discussions may entail (1) conforming modifications to the project budget or Co-Applicant Scope of Work to meet Participating Agency requirements; or (2) special terms and conditions that may be required.

Any Granting Agency may enter into negotiations with its selected recipient for any reason it deems necessary, including but not limited to: (1) the budget is not appropriate or reasonable for the requirement; (2) only a portion of the Application is selected for award; (3) a Granting Agency needs additional information to determine that the Co-applicant is capable of complying with the requirements in this FOA or the Granting Agency's applicable regulations; and/or (4) special terms and conditions are required. Failure to resolve satisfactorily the issues identified by the applicable Granting Agency will preclude award to its selected recipient. In the event that negotiations with the selected recipient cannot be resolved to the Granting Agency's satisfaction, the Granting Agencies reserve the right to select an alternate Consortium using the results from Phases #7 and #8 in this section.

G. Anticipated Notice of Selection and Award Dates

Subject to the availability of funding, successful Co-applicants should expect to receive notification of selection for negotiation within sixty (60) to ninety (90) days from the closing date of this FOA. Each Co-applicant award will have an estimated start date between August 1, 2010, and September 30, 2010. *See* section. II of this FOA for award funding availability and duration.

If the selected DOE Co-applicant is a non-FFRDC, an Assistance Agreement issued by the DOE Contracting Officer is the authorizing award document for the DOE award made pursuant to this FOA. It normally includes either as an attachment or by reference: (1) Special Terms and Conditions; (2) Applicable program regulations, if any; (3) the Application as approved by DOE/NNSA.; (4) DOE assistance regulations at 10 C.F.R. Part 600 and, if applicable, the Government wide Research Terms and Conditions, and DOE Agency Specific Requirements; (5) National Policy Assurances To Be Incorporated As Award Terms; (6) Budget Summary; and (7) Federal Assistance Reporting Checklist, and Instructions, which identifies the reporting requirements. If the selected DOE Co-applicant is a DOE/NNSA FFRDC contractor, DOE/NNSA will fund the DOE/NNSA contractor through the DOE field work authorization system. DOE/NNSA FFRDC contractors participating as team members will be funded directly by DOE/NNSA through the DOE field work authorization system. Non-DOE/NNSA FFRDC contractors and other Federal agencies will be funded under an interagency agreement.

H. Modifications to the FOA

Notices of any modifications to this FOA will be posted on Grants.gov and at www.energy.gov/hubs/eric.htm . You can receive an email when a modification or an announcement message is posted by registering with Grants.gov as an interested party for this FOA. It is recommended that you register as soon after release of the FOA as possible to ensure you receive timely notice of any modifications or other announcements.

VI. Award Administration Information, Administrative and National Policy Requirements

A. DOE Requirements

The administrative requirements for DOE grants and cooperative agreements are contained in 10 C.F.R. Part 600 (See: http://ecfr.gpoaccess.gov). Grants and cooperative agreements made to universities, non-profits and other entities subject to OMB Circular A-110 are subject to the Research Terms and Conditions located on the National Science Foundation web site at www.nsf.gov/bfa/dias/policy/rtc/index.jsp .

The DOE Special Terms and Conditions for Use in Most Grants and Cooperative Agreements are located at http://management.energy.gov/business_doe/business_forms.htm . The National Policy Assurances To Be Incorporated As Award Terms are located at DOE http://management.energy.gov/business_doe/business_forms.htm .

The standard DOE financial assistance intellectual property provisions applicable to the various types of recipients are located at http://www.gc.doe.gov/financial_assistance_awards.htm .

Either a cooperative agreement or DOE Field Work Authorization may be awarded under this announcement. If the award is a cooperative agreement, the DOE Specialist and DOE Project Officer will negotiate a Statement of Substantial Involvement prior to award. DOE may also consider awarding a Technology Investment Agreement (TIA). A TIA, like a cooperative agreement, also requires substantial Federal involvement in the technical or management aspects of the project and a Statement of Substantial Involvement will also be negotiated prior to the award of any TIA. See 10 C.F.R. 603.105(a).

DOE reserves the right to require the awardee to obtain written approval of the Contracting Officer prior to placement of any subcontracts(s).

B. DOC Requirements Applicable to Both EDA and NIST/MEP Awards

The Department of Commerce Pre-Award Notification Requirements for Grants and Cooperative Agreements, which govern both NIST/MEP and EDA awards and are contained in the Federal Register Notice of February 11, 2008 (73 Fed. Reg. 7696), are applicable to this FOA. These requirements may be accessed by entering the *Federal Register* volume and page number provided in the previous sentence at the following Internet website: www.gpoaccess.gov/fr/index.html .

The uniform administrative requirements for Department of Commerce grants and cooperative agreements are codified at 15 C.F.R. parts 14 and 24, as applicable. Funds awarded cannot necessarily pay for all the costs that the recipient may incur in the course of carrying out the project. DOC allowable costs are determined in accordance with the

following regulations (incorporated by reference at 15 C.F.R. parts 14 and 24): (i) 2 C.F.R. part 220, *"Cost Principles for Educational Institutions (OMB Circular A-21)*"; (ii) 2 C.F.R. part 225, *"Cost Principles for State, Local and Indian Tribal Governments (OMB Circular A-87)*"; (iii) 2 C.F.R. part 230, *"Cost Principles for Nonprofit Organizations (OMB Circular A-122)*"; and (iv) Federal Acquisition Regulation Subpart 31.2, *"Contracts with Commercial Organizations*," codified at 48 C.F.R. § 31.2. Applicable administrative requirements and federal cost principles are incorporated by reference into the terms and conditions of each EDA and NIST/MEP award.

C. SBA Requirements

Except to the extent modified by the terms of this FOA, the general and administrative requirements for SBA awards are set forth in 13 C.F.R. Part 143 and the applicable OMB circulars. Specific award requirements can be found in the Energy Independence and Security Act of 2007, Public Law 110-140, Title XII, Section 1203(c) and 13 C.F.R. Part 130. The uniform administrative requirements for Small Business Administration grants and cooperative agreements are codified at 13 C.F.R. Part 143 and 2 C.F.R. Part 215, as applicable.

D. DOL Requirements

Information on the laws and regulations administered by the Department of Labor, including the laws governing wages and fringe benefits, working conditions and equal opportunity under federal contracts are available at http://www.dol.gov/compliance/audience/fedcontractor.htm#applicable_laws.