FUNDING OPPORTUNITY ANNOUNCEMENT

Ministry of Science & Technology, Government of Indiaand U.S. Department of Energy and

India- U.S.Joint Clean Energy Research and Development Center

Funding Opportunity Number: DE-FOA-0001606

CFDA Number: 81.087

Issue Date:	**July 19, 2016**
Question Due Date:	**July 25, 2016**
Application Due Date:	**August 31, 2016**

Submit Application using the following methods:
http://www.grants.gov(US) and/orJCERDC.PACE@INDOUSSTF.ORG. (India)

FOA Issue Date:	July 18, 2016
Submission Deadline for Questions [Optional]	July 25, 2016
Submission Deadline for Applications:	August 31 , 2016
Expected Date for Selection Notifications:	December 2016
Expected Timeframe for Award Negotiations	January 2017
Anticipated Number of Awards	One
Total Amount to be Awarded	$7.5 Million (Subject to availability of funding)

TABLE OF CONTENTS

PART I – FUNDING OPPORTUNITY DESCRIPTION

Means of Submission	Applications must be submitted electronically through grants.gov to be considered for award. If there are problems completing the registration process or submitting the application, call Grants.gov at 1-800-518-4726 or send an e-mail to support@grants.gov. The Applicant must complete the one-time registration process (all steps) before submitting their first application through Grants.gov (see http://www.grants.gov/web/grants/register.html). We recommend that the Applicant start this process at least three weeks before the application due date. The filled in application may also be e-mailed to **JCERDC.PACE@INDOUSSTF.ORG.**
Total Amount to be Awarded	$7.5 million over the period of performance.
Number of Awards	DOE and Government of India will make no more than 1 award
Types of Funding Agreements	Cooperative Agreement
Period of Performance	5 years
Eligible Applicants	**DOE:**Individuals and Domestic/Foreign Entities (including DOE/NNSA FFRDCs and GOGOs) are eligible to apply as a Prime Recipient or Subrecipient subject to the definitions in Section III.A. Non-DOE/NNSA FFRDCs and non-DOE GOGOs are not eligible to apply as a Prime Recipient. **Government of India:**Please refer Part III (A)
Cost Share Requirement	50%.
Submission of Multiple Applications	Each Applicant may only submit one Application as a Prime Recipient for consideration under this FOA. This limitation does not prohibit Applicants from collaborating as a Subrecipient on other application(s). There is no limit to the number of applications that can include a specific Subrecipient.
Summary	India and the United States launched the Partnership to Advance Clean Energy (PACE) in 2009 under the MOU to enhance cooperation in energy security, energy efficiency, clean energy and climate change. A priority initiative under PACE was to establish the Joint Center for Energy Research and Development (JCERDC) in November 2010. The JCERDC is designed to promote energy innovation by teams of scientists and engineers from India and the United States. The 3 priority areas for cooperation under the 1st phase of the JCERDC included solar energy, 2nd generation biofuels, and energy efficiency of buildings. In 2012, the following 3 consortia were selected; solar research institute for India and the United States (SERIUS); U.S.-India Joint Center for Building Research and Development (CBERD); and Consortium for Development of Sustainable Advanced Lignocellulosic Biofuel Systems. In 2015, India and the United States expanded the work to include smart grid and grid storage and noted the critical importance of expanding clean energy research, development, manufacturing, and deployment, with increases energy access and reduces greenhouse gas emissions.

A. SUMMARY

Energy cooperation is a central element of the U.S.-India Strategic Partnership. Recognizing the need to address climate change, ensure mutual energy security, and build a clean energy economy that drives investment, job creation, and economic growth, India and the United States launched the **U.S.-India Partnership to Advance Clean Energy (PACE)** on November 24, 2009 under the U.S.-India Memorandum of Understanding to Enhance Cooperation on Energy Security, Energy Efficiency, Clean Energy and Climate Change. As a priority initiative under the PACE umbrella, the U.S. Department of Energy (DOE) and the Government of India signed an agreement to establish the **Joint Clean Energy Research and Development Center (JCERDC)** on November 4, 2010. The JCERDC is designed to promote clean energy innovation by teams of scientists and engineers from India and the United States.

The three priority areas for cooperation under the first phase of the JCERDC were Solar Energy, Second Generation Biofuels, and Energy Efficiency of Buildings. The following three consortia were selected for award in 2012:

1. The vision of the **Solar Energy Research Institute for India and the United States (SERIIUS)**, co-led by the Indian Institute of Science at Bangalore (IISc) and the National Renewable Energy Laboratory (NREL), is to create an environment for cooperation and innovation "without borders" to develop and ready emerging and revolutionary solar electricity technologies toward the long-term success of India's Jawaharlal Nehru National Solar Energy Mission and the U.S. DOE SunShot Initiative.

2. The **U.S.-India Joint Centre for Building Energy Research and Development (CBERD)**co-led by CEPT University-Ahmedabad and the Lawrence Berkeley National Laboratory is engaged in collaborative research and innovation in the area of energy efficiency in buildings with measurable results and targeting a significant reduction in energy use in the United States and India. CBERD focuses on the integration of information technology with building physical system technology in commercial and multi-family residential high-rise buildings.

3. The **U.S.-India Consortium for Development of Sustainable Advanced Lignocellulosic Biofuel Systems** co-led by the Indian Institute of Chemical Technology-Hyderabad and the University of Florida-Gainesvilleemphasizes sustainable feedstock cultivation and supply, biochemical conversion technologies for production of second generation biofuels with minimal environmental impact, and analysis of overall sustainability and supply chain of feedstock. The major goal of this project is to develop and optimize selected non-food biomass (high yielding biomass and brown-mid rib (bmr) varieties of sorghum, sweet sorghum, pearl millet, bamboo and switch grass)based advanced biofuels systems and bio-based products like biogas and lignin-based by-products for the U.S. and India.

Recognizing the success of the first call of the JCERDC Program, the United States and India agreed to extend and expand the program, as elaborated in the U.S.-India Joint Statement issued when President Obama and Prime Minister Modi met in New Delhi on January 25, 2015.Both sides renewed their commitment to the U.S.-India Joint Clean Energy Research and Development Center (JCERDC) under PACE-R, a $125 million program jointly funded by the U.S. and Indian Government and private sector. The renewal includes extending funding for three existing research tracks of solar energy, building energy efficiency, and advanced biofuels for five years and launching a new track on smart grid and grid storage technology.Prime Minister Modi and President Obama have since emphasized the critical importance of expanding clean energy research, development, manufacturing and deployment, which increases energy access and reduces greenhouse gas emissions.

The work of the JCERDC will be initiated by a U.S.-India consortium[1] with the knowledge and experience to undertake first-rate collaborative research programs. This consortium will help bring together top talent from both countries and is expected to generate key technological advancement through genuine collaboration between U.S. and Indian researchers. Funding will be competitively awarded on the basis of a joint U.S.-India merit review of the applications to ensure genuine collaboration and partnership of the awardees. To keep the focus on international collaborative research and development, management and

[1] The term "consortium" is used to mean any entity with multiple players working collaboratively and could encompass anything from an existing organization to an *ad hoc* teaming arrangement.

administrative expenses will be kept to a minimum. New “bricks and mortar” facilities will not besupported.

B. Joint Clean Energy Research and Development Center (JCERDC)

On November 4, 2010, DOE and the Government of India entered into an Agreement[2] establishing the U.S.-India Joint Clean Energy Research and Development Center. The JCERDC will facilitate joint research and development on clean energy by teams of scientists and engineers from India and the United States, and related joint activities, needed to deploy clean energy technologies rapidly with the greatest impact. To continue the implementation of the Agreement, DOE and the Government of India (through the Ministry of Science and Technology)are launching cooperation in the priority area of **Smart Grid and Grid Storage Technology**.

C. JCERDCStructure & Governance

As per the Agreement, a joint U.S.-India Steering Committee on Clean Energy Science and Technology Cooperation will provide high-level review and guidance for the activities and direction of research conducted under the auspices of the JCERDC. The Steering Committee will meet annually or at such other time as the co-chairs jointly decide.

As per the Agreement, where DOE and the Government of India decide to co-fund a specific project, a Joint Appraisal Committee comprised of an equal number of senior representatives of DOE and the Government of India will determine the terms and conditions under which the co-funded project shall be conducted. Pursuant to Article V.6 of the Agreement, DOE and the Government of India will each establish a secretariat, which will work closely with each other as the principal coordinators of the JCERDC’s communications and activities. The functions of the secretariats are to:

1. Organize the meetings of the Steering Committee and the Joint Experts’ Panel;
2. Help arrange special activities such as teleconferences and workshops;
3. Maintain archival records for the Steering Committee and the Joint Experts’ Panel;
4. Act as a clearing house for JCERDCactivities; and
5. Perform such other tasks as the Steering Committee directs.

The Indian secretariat will be housed with the Indo-U.S. Science and Technology Forum (IUSSTF), New Delhi. DOE’s secretariat will be housed with DOE’s Office of International Affairs, Washington, D.C.

D. Role of Consortia

The work of the JCERDC will be conducted by consortia of Indian and United States researchers with the knowledge and experience to undertake first-rate collaborative research programs. These consortia may consist of entities or individuals from academia, the private sector, non-governmental institutions, national laboratories and others as applicable. Each consortium will need to establish an internal governance structure, which should be clearly described in the application along with a proposed approach forprotection and allocation of intellectual property that may arise from the collaborative research. Each consortium will be required to match the level of funding awarded byDOE and the Government of India through cost sharing (U.S. entities will match DOE awards and Indian entities will match Government of India awards). The total amount of cost-share, including the expected structure of contributions, should be clearly described in the application.

A consortium structure is intended to encourage partnership and create the potential for additional sources of funding to be leveraged with United States and Indian government funds. It is expected that private sector companies will be collectively best placed to understand the near-term research and development (R&D) needs, and the inclusion of potential competitors will enable increased coordination on topics of mutual interest and a broad, industry-wide impact. The consortium, therefore, should ideally include multiple partners from public and private sector companies,national laboratories, universities, and other research, analytic, and nonprofit organizations. Workforce development through universities associated with the consortium is an additional goal associated with this model.

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[2]Agreement between the Department of Energy of the United States of America and the Planning Commission of the Republic of India for Cooperation on a Joint Clean Energy Research and Development Center (Agreement).

E. DOE Funding

As per the Agreement, DOE will fund activities by U.S. entities of a selected consortium in accordance with U.S. laws and regulations. DOE funds cannot be used topay for work conducted by Indian entities within a selected consortium.

F. Government of IndiaFunding

As per the Agreement, the Ministry of Science and Technology, Government of Indiawill fund activities by Indianentities of a selected consortium in accordance with India's laws and regulations. The Ministry of Science and Technology'sfunds cannot be used topay for work conducted by U.S. entities within a selected consortium.

G. Team Arrangements

Entities and individuals are expected to submit applications as teams, with a minimum of two participants from the United States and two participants from India. Each applicant consortium must designate lead organizations from each country as prime award candidates.The designated lead organizations, i.e., the prime award candidates, must perform a greater percentage of the planned R&D than any individual team member or subawardee.Given the restrictions on funding, applications must explain how government funding will be separatelytracked and utilized from cost-share funds provided by applicants.

H. Joint U.S.-India Merit Review Panel Process

AJoint U.S.-India Merit Review Panel (JMRP) will evaluate applicationsto ensure genuine collaboration, partnership of the awardees, and presence of balanced funding opportunities for work between U.S. and Indian researchers. Prior to a comprehensive merit evaluation, DOE and the Ministry of Science and Technology, Government of India will each perform an initial review to determine that (i) the applicant is eligible for an award; (ii) the information required by the announcement has been submitted; (iii) all mandatory requirements are satisfied; and (iv) the proposed project is responsive to the objectives of the Funding Opportunity Announcement. Applications will be reviewed in accordance with the following process:

1. DOE and the Ministry of Science and Technology will separately review submitted applications to ensure compliance with the Funding Opportunity Announcement.
2. A Joint Merit Review Panel consisting of an equal number of U.S. and Indian merit reviewers (subject experts) will evaluate compliant applications in accordance with the criteria identified in Part VII of this Announcement.
3. Each member of the Joint Merit Review Panel will submit his or her individual recommendation regarding the applications to the Joint Merit Review Panel team leader. The team leader will prepare a summary of the recommendations and furnish copies of the summary and the individual recommendations to representatives of DOE and the Ministry of Science and Technology, Government of Indiaand to the Joint Appraisal Committee.
4. The DOE –Ministry of Science and Technology, Government of India Joint Appraisal Committee will rank consortium finalists based on the Joint Merit Review Panel'srecommendations and the Program Policy Factors (See Part VII.B.3) and recommend consortia finalists to the deciding officials for award.
5. DOE and the Ministry of Science and Technology, Government of India each retain the exclusive right to make a final award decision. Funding will be awarded only when a consortium is selected by each government.

I. R&D Priority Area

The JCERDC will undertake R&D in the priority area of smart grids and energy storage for grid applications.

Smart Grids and Energy Storage for Grid Applications:

Distributed Energy Operations. A collaborative smart grid research component would allow both India and the United States to explore and analyze the concept of microgrids to enable optimal integration and utilization of Distributed Energy Resources (DER), including distributed generation, electric vehicles, storage, and demand response. Rooftop solar, small-scale wind, and biomass cogeneration are of particular interest for distributed generation in the Indian context, and could be considered, including through coordination with existing PACE initiatives. A collaborative grid storage research component would work synergistically with the smart grid research program by enabling both India and the United States to explore the contributions of storage to enhanced grid resilience, reliability, efficiency, and performance.

Distribution System Operations. Distribution systems in India exhibit large scale penetration of behind-the-meter generation and small scale battery storage technologies, which are utilized in a largely uncoordinated and inefficient manner. These conditions warrant the study of evolution of utilities to adopt a regulatory framework that includes the concept of the Distribution System Operator (DSO), opening possibilities to perform a wider array of functions than they do presently in order to ensure more optimal utilization of distributed energy resources. Such studies would call upon regulatory reform initiatives in the United States to consider the DSO concept to deal with the issues related to high DER penetration in states such as California and also efforts to deploy storage in a variety of grid configurations to enhance renewable deployment and increase resilience.

A. Objectives

Applications should respond to the following objectives:

Smart Grids Component

The **smart grid research component** would entail detailed analysis of different functions that a DSO would be required to perform in order to ensure optimal utilization and management of distributed energy resources while maintaining safe, reliable and resilient grid operations with greater amounts of DER. The research tasks would be developed to a) design a generalized DSO framework with a minimum set of required functionalities, and b) analysis of DSO operations and functions, and the associated data, communications and control system requirements.

A suite of test-cases would be designed and implemented to study the distribution system needs,operational capabilities, and customer diversity ranging from a) densely populated urban setting, b) sub-urban and rural setting, and c) commercial and large-industrial setting.

Understanding the role of DSOs and microgrid concepts for distribution systems with high penetrations of interconnected generation from renewable energy sources (RES) is a Smart Grids R&D Priority area.The functions that DSOs perform with respect to interconnected generation from DER are related to and defined by distribution management systems (DMS), microgrid energy management systems (uEMS), and distributed energy management systems (DERMS) at multiple levels of complexity, depending on the configuration of the interconnected resources. These are central to the smart grid research component.

Achieving this objective requires identifying technical gaps and proposing solutions to integrating distribution management systems (DMS) and microgrid energy management systems (μEMS). As the R&D objectives are reached, they could be validated by modeling and simulations of proposed solutions.

Thus the objectives are to 1) fill the gaps for the integration of DMS and DER controls; 2) identify interactive functions in DMS and DER controls that support DSO concepts for grid operations; and 3) characterize integrated systems through modeling at the field level.

A related objective may be to conduct a proof-of-concept simulation to evaluate the effectiveness of integrating the control and management systems for microgrids and distribution utilities at a suitable site in the United States and India and structuring a comprehensive demonstration approach and plan.

Another objective of the Smart Grid R&D is to establish a solid foundation for an ongoing information exchange on technical issues related to microgrids and distribution system operations between stakeholders in India and the United States. This can be achieved through a Stakeholder Advisory Group to be formed from both countries.

Grid Storage Component

The grid storage research component envisages establishinga set of “prototypic” models for electrical system topologies and configurations including loads, generation, storage, etc. for India that would be developed in conjunction with Indian academic and research organization utilities, energy storage and smart grid associations, and other governmental entities. A similar set of models for U.S. prototypic systems would be adapted from existing feeder sets assembled for the DOE smart grid program, in conjunction with energy storage and smart grid organizations. It is envisioned that these grid prototypes models would encompass a range of existing or proposed classes of systems, including independent and grid integrated microgrids and resilient system architectures. Thesegrid models should define the optimal location, size, and duration of energy storage in a DER environment to enable greater reliability and efficiency.

It is also envisioned that smart grid embodiments would be included in the suite of grid prototypes or corollary systems (since smart grid embodiments are expected to be important models for effective utilization of storage). These grid prototype models would be reconciled initially to a set of perhaps five (eachlimited set for the United States and India). A suite of analytic tools assembled from existing grid simulation tools would be configured to address the grid prototypes. A suite of test cases would then be identified for each grid prototype, and analyses conducted to determine system response. Attributes of the grid prototypes models would be modified to both encompass a broader array of forecast circumstances (like cloudy day, peak load conditions, solar eclipse day etc.), as well as in order to gain insight on the design sensitivities, optimal sizing, location, and performance particularly as related to energy storage (including sizing, location, performance attributes, etc.). The models and data utilized to drive these simulations would be made available for use by the broader industrial, governmental/private, and academic community.

PART II – DOE AWARD INFORMATION

A. TYPE OF AWARD INSTRUMENT

DOE anticipates awarding cooperative agreements under this Funding Opportunity Announcement. See Part IV.D below for information with respect to an award involving a National Laboratory or Federally Funded Research and Development Center.

B. ESTIMATED FUNDING

DOE expects to award approximately $1,500,000 in the first year of operation (FY 2016), and an additional $1,500,000 per year in support of JCERDC activities in years U.S. FY 2017through FY 2020.[3]

C. MAXIMUM AND MINIMUM AWARD SIZE

Ceiling (i.e., the maximum amount for an individual award made under this announcement):
None.

Floor (i.e., the minimum amount for an individual award made under this announcement):
$1 million per year in expenditures.

D. EXPECTED NUMBER OF AWARDS

DOE anticipates making one award under this announcement. If none of the proposals are found suitable for award, DOE and Ministry of Science and Technology,Government of India have the discretion to make noawards.

E. PERIOD OF PERFORMANCE

Project periods will be a maximum of five years.

F. TYPE OF APPLICATION

New applications will be accepted under this announcement.

G. STATUTORY AUTHORITY

The Statutory Authority for this award derives from the Department of Energy Organization Act, 42 U.S.C. § 7256(a).

[3] U.S. awards in years FY2016 through FY2020 are subject to the availability of appropriated funds.

PART II(A) – GOVERNMENT OF INDIA AWARD INFORMATION

A. ESTIMATED FUNDING

Ministry of Science and Technology, Government of India expects to award approximately $1,500, 000 (INR 10.20 crores) each year in support of JCERDC activities in years Indian FY 2016 through FY 2021.

B. MAXIMUM AND MINIMUM AWARD SIZE

Ceiling (i.e., the maximum amount for an individual award made under this announcement):
None.

Floor (i.e., the minimum amount under each program/topic area made under this announcement):
US$1million (INR 6.65 crores) per year in expenditures

C. EXPECTED NUMBER OF AWARDS

Government of India envisions selecting a single research consortium to undertake work in each of the two components of smart grid and grid storage technology. If none of the proposals are found suitable for award, DOE and Ministry of Science and Technology, Government of India have the discretion to make noawards.

D. PERIOD OF PERFORMANCE

Project periods will be a maximum of five years.

E. TYPE OF APPLICATION

New applications will be accepted under this announcement.

Section III - ELIGIBILITY INFORMATION FOR UNITED STATES APPLICANTS

A. ELIGIBLE APPLICANTS

1. Individuals

U.S. citizens and lawful permanent residents are eligible to apply for funding as a Prime Recipient or Subrecipient.

2. Domestic Entities

For-profit entities, educational institutions, and nonprofits that are incorporated (or otherwise formed) under the laws of a particular State or territory of the United States are eligible to apply for funding as a Prime Recipient or Subrecipient.

State, local, and tribal government entities are eligible to apply for funding as a Prime Recipient or Subrecipient.

DOE/NNSA Federally Funded Research and Development Centers (FFRDCs) and DOE Government-Owned, Government-Operated laboratories (GOGOs) are eligible to apply for funding as a Prime Recipient or Subrecipient.

Non-DOE/NNSA FFRDCs and non-DOE GOGOs are eligible to apply for funding as a Subrecipient, but are not eligible to apply as a Prime Recipient.

3. Foreign Entities

Foreign entities, whether for-profit or otherwise, are eligible to apply for funding under this FOA. Other than as provided in the "Individuals" or "Domestic Entities" sections above, all Prime Recipients receiving funding under this FOA must be incorporated (or otherwise formed) under the laws of a State or territory of the United States. If a foreign entity applies for funding as a Prime Recipient, it must designate in the Full Application a subsidiary or affiliate incorporated (or otherwise formed) under the laws of a State or territory of the United States to be the Prime Recipient. The Full Application must state the nature of the corporate relationship between the foreign entity and domestic subsidiary or affiliate.

If a Foreign entity wishes to forego this requirement and serve as the Prime Recipient itself, it may submit a waiver request to DOE as part of its Full Application requesting permission to do so. Instructions for submission are given in Section IV.C.8. The waiver request must include the following information:

- Entity name;
- Country of incorporation;
- Description of the work to be performed by the entity for whom the waiver is being requested; and
- Countries where the work will be performed.

In the waiver request, the Applicant must demonstrate to the satisfaction of DOE that it would further the purposes of this FOA and is otherwise in the interests of DOE to have a foreign entity serve as the Prime Recipient. The Contracting Officer may require additional information before considering the waiver request.

4. Incorporated Consortia

Incorporated consortia, which may include domestic and/or foreign entities, are eligible to apply for funding as a Prime Recipient or Subrecipient. For consortia incorporated (or otherwise formed) under the laws of a State or territory of the United States, please refer to "Domestic Entities" above. For consortia incorporated in foreign countries, please refer to the requirements in "Foreign Entities" above.

Each incorporated consortium must have an internal governance structure and a written set of internal rules. Upon request, the consortium must provide a written description of its internal governance structure and its internal rules to the DOE Contracting Officer.

5. Unincorporated Consortia

Unincorporated consortia, which may include domestic and/or foreign entities, must designate one member of the consortium to serve as the Prime Recipient/consortium representative. The Prime

Recipient/consortium representative must be incorporated (or otherwise formed) under the laws of a State or territory of the United States. The eligibility of the consortium will be determined by the eligibility of the Prime Recipient/consortium representative under Section III.A of the FOA.

Upon request, unincorporated consortia must provide the DOE Contracting Officer with a collaboration agreement, commonly referred to as the articles of collaboration, which sets out the rights and responsibilities of each consortium member. This agreement binds the individual consortium members together and should discuss, among other things, the consortium's:

- Management structure;
- Method of making payments to consortium members;
- Means of ensuring and overseeing members' efforts on the project;
- Provisions for members' cost sharing contributions; and
- Provisions for ownership and rights in intellectual property developed previously or under the agreement.

B. COST SHARING

United States Government funding: Cost sharing of at least 50% from a non-Federal entity is required. The cost share is based on the total allowable costs (i.e., the sum of the Government share, including FFRDC contractor costs if applicable, and the recipient share of allowable costs equals the total allowable cost of the project) and must come from non-Federal sources unless otherwise allowed by law. Cost sharing may be considered within the "Program Policy Factors." See Part VII.B.3. Cost sharing requirements are located at 2 CFR 910.130 and 2 CFR 200.306.

C. OTHER ELIGIBILITY REQUIREMENTS

1. FFRDC/National Laboratories

Federally Funded Research and Development Center (FFRDC) Contractors. FFRDC contractors may be proposed as a team member on another entity's application subject to the following guidelines:

Authorization for non-DOE/NNSA FFRDCs. The Federal agency sponsoring the FFRDC contractor must authorize in writing the use of the FFRDC contractor on the proposed project, and this authorization must be submitted with the application. The use of a FFRDC contractor must be consistent with the contractor's authority under its award and must not place the FFRDC contractor in direct competition with the private sector.

Authorization for DOE/NNSA FFRDCs. The cognizant contracting officer for the FFRDC must authorize in writing the use of a DOE/NNSA FFRDC contractor on the proposed project, and this authorization must be submitted with the application. The following wording is acceptable for this authorization.

"Authorization is granted for the [Name] Laboratory to participate in the proposed project. The work proposed for the laboratory is consistent with or complementary to the missions of the laboratory, will not adversely impact execution of the DOE/NNSA assigned programs at the laboratory, and will not place the laboratory in direct competition with the domestic private sector."

Cost Share. The applicant's cost share requirement will be based on the total cost of the project, including the applicant's and the FFRDC contractor's portions of the effort.

FFRDC Contractor Effort:

The scope of work to be performed by the FFRDC contractor may not be more significant than the scope of work to be performed by the applicant.

The FFRDC contractor effort, in aggregate, shall not exceed 50% of the total estimated cost of the project, including the applicant's and the FFRDC contractor's portions of the effort.

Responsibility. The 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 applicant and the FFRDC contractor.

2. National Laboratory Contractors

A DOE/NNSA National Laboratory Contractor is eligible to apply for funding under this announcement if its cognizant contracting officer provides written authorization and this authorization is submitted with the application. (This is not required for the National Energy Technology Laboratory since it is a Government Owned/Government Operated (GOGO). If a DOE/NNSA National Laboratory Contractor is selected for award, the proposed work will be authorized under the DOE work authorization process and performed under the laboratory's M&O contract. The following wording is acceptable for the authorization:

"Authorization is granted for the [Name] Laboratory to participate in the proposed project. The work proposed for the laboratory is consistent with or complementary to the missions of the laboratory and will not adversely impact execution of the DOE/NNSA assigned programs at the laboratory."

3. Team Arrangements

Entities and individuals are expected to submit applications as teams, with a minimum of two participants from the United States and two participants from India. Each applicant consortium must designate lead organizations from each country as prime award candidates. The designated lead organizations, i.e., the prime award candidates, must perform a greater percentage of the planned R&D than any individual team member or subawardee. Given the restrictions on funding, applications must explain how government funding will be separately tracked and utilized from cost-share funds provided by applicants. DOE will enter into a prime award relationship with the designated lead organization. All DOE funds will be provided to, and flow through, the lead organization.

4. Limitation on Number of Applications Eligible for Review

Each Applicant may only submit one Application as a Prime Recipient for consideration under this FOA. If an Applicant submits more than one Full Application, DOE will only consider the last timely submission for evaluation. Any other submissions received listing the same Prime Recipient will be rejected and will not be eligible for further consideration.

This limitation does not prohibit Applicants from collaborating as a Subrecipient on other application(s) under this FOA.

There is no limit to the number of applications that can include a specific Subrecipient.

PART III (A) - ELIGIBILITY INFORMATION FOR INDIAN APPLICANTS

A. ELIGIBLE APPLICANTS

Ministry of Science and Technology,Government of India Funding: National laboratories, universities, and academic institutions and research organizations of public and private sector companies in India recognized under SIRO/ DSIR in consortiumare eligible for funding.

B. COST SHARING

Government of India funding will be up to a maximum of 50% of the total cost. Cost sharing for the balance 50% from the consortia partners will be required.

C. TEAM ARRANGEMENTS

Entities and individuals are expected to submit applications as teams, with a minimum of two participants from the United States and two participants from India. Each applicant consortium must designate lead organizations from each country as prime award candidates. The designated lead organizations, i.e., the prime award candidates, must perform a greater percentage of the planned R&D than any individual team member or subawardee. Given the restrictions on funding, applications must indicate the timeline of government fund requirements and explain how government funding will be separately tracked and utilized from cost-share funds provided by applicants.

Ministry of Science and Technology, Government of India through IUSSTF will enter into prime award relationship with the designated lead organization and other participating organization, if required. All Government of India funds will be provided to and flow through lead organization.

PART IV –APPLICATION AND SUBMISSION INFORMATION

A. ADDRESS TO REQUEST AND DOWNLOAD APPLICATION PACKAGE

Application forms and instructions are available at grants.gov and http://www.iusstf.org/story/53-61-Joint-Clean-Energy-Research-and-Development-Center(JCERDC).html

For those applicants who wish to download application forms from grants.gov, the following instructions apply:

To access these materials, go to http://www.grants.gov, select “Apply for Grants,” and then select “Download Application Package.” Enter the Catalog of Federal Domestic Assistance (CFDA) and/or the funding opportunity number located on the cover of this announcement and then follow the prompts to download the application package. Each applicant consortium must register with grants.gov to utilize the system and a DUNS number is required.

B. LETTER OF INTENT AND PRE-APPLICATION

1. Letter of Intent

A Letter of Intent is not required.

2. Pre-application

Pre-applications are not required.

3. Funding Opportunity Announcement Conference

A conference will not be held for this funding opportunity announcement.

C. CONTENT AND FORM OF APPLICATION (Email Submission)

You must complete the mandatory forms and any applicable optional forms in accordance with the instructions on the forms and the additional instructions below. **Files that are attached to the forms must be in Adobe Portable Document Format (PDF) unless otherwise specified in this announcement.**

Applicants shall not include any information that is subject to U.S. export controls (including but not limited to items controlled by the U.S. Department of Commerce Export Administration Regulations)in the application.

Text below highlighted in grey applicable only for US applicants

1. **SF 424 Application for Federal Assistance:** Complete this form first to populate data in other forms. Complete all the required fields in accordance with the pop-up instructions on the form. To activate the instructions, turn on the “Help Mode” (Icon with the pointer and question mark at the top of the form). The list of certifications and assurances referenced in Field 18 can be found on the DOE Financial Assistance Forms Page http://energy.gov/management/office-management/operational-management/financial-assistance/financial-assistance-formsunder Certification and Assurances.

2. **Project/Performance Site Location(s) Form**
   Indicate the primary site where the work 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.

3. Other Project Information Form

Complete questions 1 through 5 and attach the files required below. The files must comply with the following instructions:

- ***Project Summary/Abstract (Field 7 on the Other Project Information Form)***

  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 listing of consortia participants,designated lead organizations, description of priority research projects, methods to be employed, benefits and outcomes of the research, the dollar value of the effort to be performed by each participant, national affiliation of each participant and a brief description of the capacity in which the participant will be participating. This document must not include any proprietary or sensitive business information as DOE or the Government of India may make it available to the public. The project summary must not exceed one page when printed using standard 8.5" by 11" paper with 1" margins (top, bottom, left and right) with font not smaller than Times New Roman 12 point.

- ***Project Narrative (Field 8 on the Other Project Information Form)***

  The project narrative must not exceed 50 pages, 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 ONLY REVIEW THE NUMBER OF PAGES SPECIFIED IN THE PRECEDING SENTENCE.** A cover page and table of contents must be included at the beginning of the project narrative but neither will count against the page limit. Furthermore, information required to be submitted in the requested appendices are not subject to the project narrative page limit. Headers/footers containing page numbers and project titles/logos may be inserted within the required 1" margins. The font must not be smaller than Times New Roman 12 point. 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. See Part XI.D for instructions on how to mark proprietary application information.

  The project narrative must include the following sections and are specified in order to ensure that the merit reviewers have the required information to conduct a proper and complete evaluation as identified in Section VII – Application Joint Review Information, B. Criteria:

  Project Objectives– This section should provide a clear, concise statement of the specific objectives/aims of the proposed project. A successful application will include a comprehensive and systematic approach, including a description of tasks necessary to achieving the program objectives related to the eligible technologies. (Section VII, B2 - Scientific and Technical Merit Review Criteria applies to this section.)

  Merit Review Criterion Discussion/Scientific and Technical Approach – This section should be formatted to address the objectives and each of the merit review criteria listed in Section VII. - Application Joint Review Information, A.Objectives and B.Criteria for the proposed project. Provide sufficient information so that reviewers will be able to evaluate the application in accordance with these merit review criteria. DOE AND THE GOVERNMENT OF INDIA WILL EVALUATE AND CONSIDER ONLY THOSE APPLICATIONS THAT ADDRESS SEPARATELY EACH OF THE MERIT REVIEW CRITERIA. (Section VII, B2 - Scientific and Technical Merit Review Criteria applies to this section.)

  Project Coordination and Management Plan – The plan should describe the organization's structure of the project as it pertains to the designations of multiple Principal Investigators, and include the following:

  (1) how the consortium will effectively manage and monitor progress of the individual research efforts; (2) procedures and plans for communications both within the consortium and outside the consortium; (3) a list of topic areas and projects considered for possible subawards; (4) strategies to promote the transfer of the results of the selected projects to relevant constituencies in India and the U.S. through cyber-meetings, forum, etc.; (5) the process for making decisions on scientific/technical direction; (6) a proposed intellectual property plan for the protection and

allocation of any intellectual property arising from the R&D collaboration*; and (7)Objective Wise Activities & Timelines(Section VII, B2 – Technical Approach, Management Plan and Understanding of Project Objectives Merit Review Criteria applies to this section.)

*Intellectual Property Rights (IPR) are subject to Annex I, Intellectual Property (IPR Annex), of the Agreement on Science and Technology Cooperation between the Government of the United States of America and the Government ofIndia (S&T Agreement) and the respective standard IPR provisions of the Parties. The IPR Annex to the S&T Agreement will provide the guiding principles for the IPR allocation and sharing mechanism. The IPR allocation and sharing mechanism is to be mutually worked out and agreed upon by the Parties and consortium members in conformity with their organizations' policies, the respective Government agencies' laws and regulations, and in accordance with Annex I of the S&T Agreement. (Refer to the Appendices / Reference Material Section).

Roles of the Participants/Consortium – This section should describe the roles and the work to be performed by each participant/investigator, business agreements between the applicant and participants, and how the various efforts will be integrated and managed. For each Director and relevant consortium members, provide a list of experiences working on clean energy. This section should include a discussion on the Principal Investigators' roles and administrative, technical, and scientific responsibilities for the project and commitment of the designated lead to the other participating consortium members; and procedures for resolving conflict and the authority or process within a consortium to resolve funding issuesthat may arise in the implementation of R&D activities. (Section VII, B2 – Applicant/Team Capabilities, Experience, Organization, Facilities and Management Capabilities Review Criteria applies to this section.)

This concludes the requirements for the 50-page Project Narrative. The following additional information must also be provided by Applicants.

Attachment Files- Applicants must submit the following additional files with their application. This information may be consolidated into one document with the appropriate Appendix header for each topic area and attached in field 12 – Other Attachments of the R&R Other Project Information form. This information is not counted in the project narrative page limitation.

- **Appendix 1: Biographical Sketch**
  Provide a biographical sketch for each Consortium Director 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 biographical information for each person must not exceed three 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. Please provide this information as an appendix to your project narrative.Include:

  Education and Training: Undergraduate, graduate and postdoctoral training, provide institution, major/area, degree, and year.

  Research and Professional Experience: Beginning with the current position list, in chronological order, professional/academic positions with 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 substituted for 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:List in alphabetical order 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 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 during the 24 months preceding submission of this application. If there are no collaborators or co-editors to report, state "None.".

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

- **Appendix 2: Current and Pending Support (requirement for U.S. and Indianentities or individuals)**
  Provide a list of all current and pending support (both Federal and non-Federal for U.S. entities; and central, state and other national and international organizations for Indian entities) for the Director, and senior/key persons, including subawardees and consultants, for ongoing projects and pending applications as an appendix to the project narrative. 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 3: 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. Applicants should be especially careful to follow scholarly practices in providing citations for source materials relied upon when preparing any section of the application. In order to reduce the number of files attached to your application, please provide the Bibliography and References Cited information as an appendix to your project narrative.

- **Appendix 4: 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. In order to reduce the number of files attached to your application, please provide the Facility and Other Resource information as an appendix to your project narrative.

- **Appendix 5: Equipment(Equipment is generally defined as an item with an acquisition cost greater than $5,000 in the U.S. context pursuant to 2 C.F.R. § 200.33and $2,500 (INR 1,50,000) in the Indian context, and a useful life expectancy of more than one year.)**
  List major items of equipment already available for this project and, if appropriate, identify location and pertinent capabilities. In order to reduce the number of files attached to your application, please provide the Equipment information as an appendix to your project narrative.

- **Appendix 6:Cost Sharing/Third Party Commitment**
  Each third party contributing to cost sharing is required to submit a funding commitment document(letters are acceptable) that identifies: (1) the name of the organization; (2) the proposed dollar amount to be provided; (3) the amount as a percentage of the total project cost; and (4) the proposed cost sharing – cash, services, or property. For projects with multiple cost sharing partners please summarize in a table format. Please provide this information as an appendix to your project narrative.

- **Appendix 7: Statement of Conflict of Interest (Only applicable to U.S. Laboratories functioning as the U.S. lead for the consortium.)**
  At the time of submission, the applicant shall include information identifying potential, apparent, or actual organizational and individual conflicts of interest and proposed mitigation. This shall include applicants, their team members, and senior/key personnel named in the application. Negative responses are also required. Prior to award, DOE and the Government of India reserve the right to require the submission of a Conflict of Interest Management Plan describing the applicants approach to managing conflicts of interest.

- **Appendix 8: Statement of Project Objectives (SOPO)**
  The application must contain a single, detailed Statement of Project Objectives that addresses how the project objectives will be met. The Statement of Project Objectives must contain a clear, concise description of all activities to be completed during project performance and follow the structure discussed below. **The Statement of Project Objectives may be released to the public by DOE and the Government of India in whole or in part at any time.**It is therefore required that it shall not contain proprietary or confidential business information.The Statement of Project Objectives is generally less than 10 pages in totalfor the proposed work.[4]Applicants shall prepare the Statement of Project Objectives in the following format:

  TITLE OF WORK TO BE PERFORMED

  (Insert the title of work to be performed. Be concise and descriptive.)

  A. OBJECTIVES

  Include one paragraph on the overall objective(s) of the work. Also, include objective(s) for each phase of the work.

  B. SCOPE OF WORK

  This section should not exceed one-half page and should summarize the effort and approach to achieve the objective(s) of the work for each Phase.

  C. TASKS TO BE PERFORMED

  Tasks, concisely written, should be provided in a logical sequence and should be divided into the phases of the project, as appropriate. This section provides a brief summary of the planned approach to this project. An outline of the Project Management Plan (referenced in Task 1.0 below and required to be submitted with your application) is provided later in this Part.

  PHASE I

  Task 1.0 – Project Management and Planning

  (Description includes work elements required to revise and maintain the Project Management Plan and to manage and report on activities in accordance with the plan.)

  Subtask 1.1

  (Description)

  Task 2.0 - (Title)

  PHASE II (Optional)

  Task 3.0 - (Title)

  D. DELIVERABLES

  The Recipient shall provide a list of project deliverables. These reports shall also be identified within the text of the Statement of Project Objectives.

[4]The Statement of Project Objectives will not be counted as part of the overall page number of an application.

- **Appendix 9: Organizational Letters of Commitment**
  A single organizational letter of commitment is required from each organization participating as a team member. Each letter of commitment from an organization participating as a team member must be signed by the person authorized to commit the organization to a legally binding agreement. Each organizational letter of commitment is limited to one page.

- **Appendix 10: Industry Partner Information (Only applicable to Indian partners.)**
  Indian Industry partners should provide information on the shareholding pattern of the company, indicating names and addresses of foreign shareholders, overseas corporate bodies, and shares held by Non-Resident Indians; as well as the registration certificate of the company.

- **Appendix 11:Other Attachments**
  If you need to elaborate on your responses to questions 1-5 on the "R&R Other Project Information" document, please provide this information as an appendix to your project narrative.

Budget for DOE/NNSA National Laboratory Contractor, if applicable (requirement for U.S. entities or individuals).

If a DOE/NNSA National Laboratory contractor is to perform any portion of the work, you 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 athttp://energy.gov/sites/prod/files/maprod/documents/o4121a1.pdfFor purposes of satisfying this requirement, applicants are 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. through 15. and 17. through 19. of the sample FWP must be furnished with the 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 applicant after selection. In addition, include the required cognizant Contracting Officer approval authorizing the participation of the DOE/NNSA National Laboratory as described in Part IV.D. This information is required in addition to the budgetary information requested herein (Budget, Subaward Budget, and Budget Justification, as applicable). Use up to 10 letters of the DOE/NNSA National Laboratory name (plus.pdf) as the file name and attach to the R&R Other Project Information form in Field 12 – Add Attachments.

4. Budget File - SF 424 A Excel, Budget Information - Non-Construction Programs File (applicable only to U.S. applicants)

You must provide a separate budget for each year of support requested and a cumulative budget for the total project period. Use the SF 424 A Excel, "Budget Information - Non Construction Programs" form, which is also available on the DOE Financial Assistance Forms Page at http://energy.gov/management/office-management/operational-management/financial-assistance/financial-assistance-forms You may request funds under any of the Object Class Categories 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 funding restrictions in this announcement. Save the information in a single file named "SF424A.xls," and click on "Add Optional Other Attachment" to attach.

Budget Justification

You must justify the costs proposed in each Object Class Category/Cost Classification category (e.g., identify key persons and personnel categories and the estimated costs for each person or category; provide a list of equipment and cost of each item; identify proposed subaward/consultant work and cost of each subaward/consultant; describe purpose of proposed travel, number of travelers, and number of travel days; list general categories of supplies and amount for each category; and provide any other information you wish to support your budget). Provide the name of your cognizant/oversight agency, if you have one, and the name and phone number of the individual responsible for negotiating your indirect rates. If cost sharing is required, you must have a letter from each third party contributing cost sharing (i.e., a party other than the organization submitting the application) stating that the third party is committed to providing a specific minimum dollar amount of cost sharing. In the

budget justification, identify the following information for each third party contributing cost sharing: (1) the name of the organization; (2) the proposed dollar amount to be provided; (3) the amount as a percentage of the total project cost; and (4) the proposed cost sharing - cash, services, or property. By submitting your application, you are providing assurance that you have signed letters of commitment. Successful applicants will be required to submit these signed letters of commitments. The budget justification for the SF-424A is in Excel format. The sample format form PMC 123.1 is provided. Save the budget justification information in a single file named "BudgetJustification.pdf," and click on "Add Optional Other Attachment" to attach.

5. Subaward Budget Form (applicable only to U.S. applicants)

You must provide a separate budget (i.e., budget for each budget year and a cumulative budget) for each subawardee that is expected to perform work estimated to be more than $100,000 or 50 percent of the total work effort (whichever is less). Use the SF 424 A Excel for Non Construction Programs. Save each Subaward budget in a separate file. Use up to 10 letters of the subawardee's name (plus .xls) as the file name (e.g., ucla.xls or energyres.xls), and click on "Add Optional Other Attachment" to attach.

INDIAN APPLICANTS ARE REQUIRED TO COMPLETE THE BUDGET APPLICATION FORM PROVIDED.

6. Project/Performance Site Location(s)

Indicate the primary site where the work 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.

7. Disclosure of Lobbying Activities (SF-LLL) (not required for Indian applicants)

If applicable, complete SF- LLL. Applicability: If any funds other than Federal appropriated funds have been paid or will be paid 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, you must complete and submit Standard Form - LLL, "Disclosure Form to Report Lobbying."

8. Critical Energy Infrastructure Information

To the extent applicable, please do not include Critical Energy Infrastructure Information (CEII) in application materials. See definition in 18 C.F.R. § 388.113(c)(1). Please note that the award terms may require that any models developed by awardees do not contain or constitute CEII.

Application Checklist

	Application Content Checklist	Format
1.	SF-424 Application for Federal Assistance – U.S. Applicants Only	Form
2.	Project/Performance Site Location(s)	Form
3.	Other Project Information	Form
4.	Project Summary/Abstract (Field 7)	PDF
5.	Project Narrative (including required Appendices) (Field 8)	PDF
6.	Budget Information	
	a. SF-424A Budget Information – Non-Construction Programs – U.S. Applicants Only	Form
	b. Budget Justification (PMC 123.1) - U.S. Applicants Only	Excel
	c. Budget Application Form - Indian Applicants Only	Form
	d. Budget Subawardee - U.S. Applicants Only (if applicable)	Excel
	e. Budget (DOE/NNSA National Laboratory)- U.S. Applicants Only (if applicable)	Excel
7.	SF-LLL Disclosure of Lobbying Activities –U.S. Applicants Only (if applicable)	Form

Required Appendices Checklist

Your application must include the following in a single PDF document:

1. Biographical Sketch
2. Current and Pending Support (requirement for U. S. and Indian entities or individuals)
3. Bibliography and References Cited
4. Facilities and Other Resources
5. Equipment
6. Cost Sharing/Third Party Commitment
7. Statement of Conflict of Interest (Only applicable to U. S. Laboratories functioning as the U. S. lead for the consortium)
8. Statement of Project Objectives
9. Organizational Letters of Commitment
10. Industry Partner Information (Indian Applicants Only)

D. SUBMISSION FROM SUCCESSFUL APPLICANT

If selected for award, DOE or the Government of India reserves the right to request additional or clarifying information for any reason deemed necessary, including, but not limited to:

- Indirect cost information
- Other budget information
- Name and phone number of the Designated Responsible Employee for complying with national policies prohibiting discrimination (See 10 CFR 1040.5)
- Representation of Limited Rights Data and Restricted Software, if applicable
- Cost Sharing Contributions
- Environmental Evaluation Notification Form, if applicable
- Conflict of Interest Management Plan

E. SUBMISSION DATES AND TIMES

1. Pre-application Due Date

Pre-applications are not required.

2. Application Due Date

Applications must be received by (31st August, 2016), not later than 8:00 PM Eastern Time. Late submissions may not be reviewed. You are encouraged to transmit your application well before the deadline.

F. INTERGOVERNMENTAL REVIEW(Applicable only for U.S. applicants)

This program is not subject to Executive Order 12372 – Intergovernmental Review of Federal Programs.

G. FUNDING RESTRICTIONS(Applicable only for US applicants)

Cost Principles.Costs must be allowable in accordance with the applicable Federal cost principles referenced in 2 CFR Part 200 and 2 CFR 910.352. For For-Profit Entities, the Cost Principles contained in 48 CFR 31.2 (Contracts with Commercial Organizations) must be followed in lieu of the Cost principles contained in 2 CFR 200.400 through 200.475. See 2 CFR § 910.352.

Pre-award Costs.Recipients, other than DOE/NNSA National Laboratory contractors, may charge pre-award costs to an award resulting from this announcement that were incurred within the ninety (90) calendar day period immediately preceding the effective date of the award, if the costs are allowable in accordance with the applicable Federal cost principles referenced in2 CFR Part 200 and 2 CFR § 910.352. Recipients must obtain the approval of the Contracting Officer for any pre-award costs that are for periods greater than this 90-day calendar period prior to incurrence of such costs.

Pre-award costs are incurred at the applicant's risk. DOE is under no obligation to reimburse such costs if for any reason the applicant does not receive an award or if the award is made for a lesser amount than the applicant expected.

H. OTHER SUBMISSION AND REGISTRATION REQUIREMENTS

1. Where to Submit

The complete application package is provided with this FOA. Forms, certifications and questionnaires to be completed are contained in the Appendices. The remainder of the application documents are self-created. The forms may also be downloaded and saved from grants.gov to create your application package.

Once your application is completed, submit the files identified in Part VIhttp://www.grants.gov/, and JCERDC.PACE@INDOUSSTF.ORG

2. Application Receipt Notices

Applicants will receive email notification confirming receipt of their emailed application. This does not constitute acceptance of an application as compliant with all the FOA requirements. Applicants will receive a second email notification once the application has been reviewed for compliance with all of the FOA requirements.

PART V - APPLICATION JOINT REVIEW INFORMATION

A. Objectives

The JCERDC will undertake R&D in the priority area of smart grids and energy storage for grid applications.

Smart Grids and Energy Storage for Grid Applications:
Distributed Energy Operations. A collaborative smart grid research component would allow both India and the United States to explore and analyze the concept of microgrids to enable optimal integration and utilization of Distributed Energy Resources (DER), including distributed generation, electric vehicles, storage, and demand response. Rooftop solar, small-scale wind, and biomass cogeneration are of particular interest for distributed generation in the Indian context, and could be considered, including through coordination with existing PACE initiatives. A collaborative grid storage research component would work synergistically with the smart grid research program by enabling both India and the United States to explore the contributions of storage to enhanced grid resilience, reliability, efficiency, and performance.

Distribution System Operations. Distribution systems in India exhibit large scale penetration of behind-the-meter generation and small scale battery storage technologies, which are utilized in a largely uncoordinated and inefficient manner. These conditions warrant the study of evolution of utilities to adopt a regulatory framework that includes the concept of the Distribution System Operator (DSO), opening possibilities to perform a wider array of functions than they do presently in order to ensure more optimal utilization of distributed energy resources. Such studies would call upon regulatory reform initiatives in the United States to consider the DSO concept to deal with the issues related to high DER penetration in states such as California and also efforts to deploy storage in a variety of grid configurations to enhance renewable deployment and increase resilience.

C. Objectives

Applications should respond to the following objectives:

Smart Grids Component

The **smart grid research component** would entail detailed analysis of different functions that a DSO would be required to perform in order to ensure optimal utilization and management of distributed energy resources while maintaining safe, reliable and resilient grid operations with greater amounts of DER. The research tasks would be developed to a) design a generalized DSO framework with a minimum set of required functionalities, and b) analysis of DSO operations and functions, and the associated data, communications and control system requirements.

A suite of test-cases would be designed and implemented to study the distribution system needs, operational capabilities, and customer diversity ranging from a) densely populated urban setting, b) sub-urban and rural setting, and c) commercial and large-industrial setting.

Understanding the role of DSOs and microgrid concepts for distribution systems with high penetrations of interconnected generation from renewable energy sources (RES) is a Smart Grids R&D Priority area. The functions that DSOs perform with respect to interconnected generation from DER are related to and defined by distribution management systems (DMS), microgrid energy management systems (uEMS), and distributed energy management systems (DERMS) at multiple levels of complexity, depending on the configuration of the interconnected resources. These are central to the smart grid research component.

Achieving this objective requires identifying technical gaps and proposing solutions to integrating distribution management systems (DMS) and microgrid energy management systems (μEMS). As the R&D objectives are reached, they could be validated by modeling and simulations of proposed solutions.

Thus the objectives are to 1) fill the gaps for the integration of DMS and DER controls; 2) identify interactive functions in DMS and DER controls that support DSO concepts for grid operations; and 3) characterize integrated systems through modeling at the field level.

A related objective may be to conduct a proof-of-concept simulation to evaluate the effectiveness of integrating the control and management systems for microgrids and distribution utilities at a suitable site in the U.S. and India and structuring a comprehensive demonstration approach and plan.

Another objective of the Smart Grid R&D is to establish a solid foundation for an on-going information exchange on technical issues related to microgrids and distribution system operations between stakeholders in India and the United States. This can be achieved through a Stakeholder Advisory Group to be formed from both countries.

Grid Storage Component

The grid storage research component envisages establishinga set of "prototypic" models for electrical system topologies and configurations including loads, generation, storage, etc. for India that would be developed in conjunction with Indian academic and research organizations utilities, energy storage and smart grid associations, and other governmental entities. A similar set of models for U.S. prototypic systems would be adapted from existing feeder sets assembled for the DOE smart grid program, in conjunction with energy storage and smart grid organizations. It is envisioned that these grid prototypes models would encompass a range of existing or proposed classes of systems, including independent and grid integrated microgrids and resilient system architectures. These grid models should define the optimal location, size, and duration of energy storage in a DER environment to enable greater reliability and efficiency.

It is also envisioned that smart grid embodiments would be included in the suite of grid prototypes or corollary systems (since smart grid embodiments are expected to be important models for effective utilization of storage). These grid prototype models would be reconciled initially to a set of perhaps five (each limited set for the United States and India). A suite of analytic tools assembled from existing grid simulation tools would be configured to address the grid prototypes. A suite of test cases would then be identified for each grid prototype, and analyses conducted to determine system response. Attributes of the grid prototype models would be modified to both encompass a broader array of forecast circumstances (like cloudy day, peak load conditions, solar eclipse day etc.), as well as in order to gain insight on the design sensitivities optimal sizing, location, and performance particularly as related to energy storage (including sizing, location, performance attributes, etc.). The models and data utilized to drive these simulations would be made available for use by the broader industrial, governmental/private, and academic community.

B. Criteria

1. Initial Review Criteria

Prior to a comprehensive merit evaluation, DOE and the Government of India will each perform an initial review to determine that (1) the applicant is eligible for an award; (2) the information required by the announcement has been submitted; (3) all mandatory requirements are satisfied; and (4) the proposed project is responsive to the objectives of the funding opportunity announcement. If a written application fails to meet all of the mandatory requirements, the application will not be forwarded for comprehensive merit review.

2. Merit Review Criteria

The following criteria will be used to evaluate the Applicant's Project Narrative:

Scientific and Technical Merit (35%)

- Degree to which the proposed methodologies will lead to the implementation of research which helps achieve the FOA objectives.
- Degree to which the proposed activities identify and/or make progress on new concepts within the context of a collaborative or cooperative exchange in the focus areas of the FOA.
- Degree to which the proposed activities generate novel concepts, approaches, methodology, tools

or technologies.

- Degree to which the proposed activities address an innovative hypothesis or critical barrier to progress in the field.

- Awareness of commercial and emerging technologies and processes and how the proposed activities provide the potential for significantly accelerating development and deployment of advanced technologies in the areas of interest of the FOA.

- Adequacy of the discussion of the technical and process risks associated with the proposed activities.

- An understanding of other existing research center models, including both their strengths and weaknesses from which to draw experiential operational and management data and lessons learned that could be applied towards the successful creation and operations of the consortium.

Technical Approach, Management Plan, and Understanding of Project Objectives (35%)

- Extent to which the approach can be scaled and/or applied within both the U.S. and Indian context.

- Extent to which the plan encourages collaboration between U.S. and Indian institutions and researchers.

- Adequacy and feasibility of the applicant's technical approach, work plan, and management plan.

- Appropriateness of the division of the activities into logical phases, tasks, and subtasks necessary to accomplish the JCERDC's objectives.

- Appropriateness, rationale, and completeness of the proposed Project Narrative.

- Reasonableness of the proposed project schedule, staffing plan, and planned travel.

- Adequacy of the plan to affect a process that results in outcome oriented deliverables aimed at technology development.

- Adequacy of the consortium plan for managing its work across the spectrum from research through development and, if applicable, on to commercialization of relevant energy technology, including institutional experience/expertise in these activities and any proposed corporate partnerships.

- Adequate details provided to support the applicant's ability to complete activities within the timeframe identified and all activities within the period of award.

- Adequacy and completeness of the discussion of how the specific tasks to be performed under the Project Narrative are designed and integrated to achieve the project objectives, including the scheduling and sequencing of all tasks and the identification of key relationships between task activities and important milestones and decision points.

- Demonstrated experience of the applicant in developing and implementing intellectual property management plans in project involving multiple parties, including international partners.

Applicant/Team Capabilities, Experience, Organization, Facilities, and Management Capabilities (30%)

- Demonstrated experience of applicants in collaborative, international research.

- Appropriateness and extent of key personnel credentials, capabilities, and experience.

- Demonstrated experience of the applicant and participating organization(s) in the technology areas addressed in the application and in managing similar projects.

- Clarity, logic and likely effectiveness of the project organization, including subcontractors; the roles and responsibilities of each partner for each task and the availability of key personnel to complete the proposed project.

- The adequacy (quality, availability, and appropriateness) of the facilities and equipment to perform project tasks.

- The ability of the applicant to succeed based on prior experience in managing projects of similar type, size, and complexity.

- Adequacy of the applicant's plans to leverage the experience and expertise of other organizations.

- Adequacy of the plan for establishing the baseline cost for the project and for assigning costs to specific tasks identified in the Project Narrative.

- Adequacy of the project management system to monitor and control project scope, cost, and schedule.

- Adequacy of the plan for ensuring effective coordination and communication between: (1) all project team members and other project participants, including technical, business, financial, permitting and other appropriate entities; and (2) the project performers, the Steering Committee, DOE and the Ministry of Science and Technology.

- Adequacy of the plan for assessing, identifying, tracking and managing project risk.

- Adequacy of the plans for providing real-time status updates on project status.

3. Program Policy Factors

The selection official will consider the following program policy factors in the selection process:

- Accelerating development and more rapid deployment of clean energy technologies

- Promoting U.S.-India cooperation on clean energy

- Supporting a highly qualified team with a diversity of talent and in-depth expertise from a broad spectrum of industry, academia and laboratories, with both technical and policy knowledge

- Leveraging government funds to advance policy and technical goals that would not be met with exclusively private support

- Leveraging external support beyond the 50% cost share

C. REVIEW AND SELECTION PROCESS

1. Joint U.S-India Merit Review

The Joint U.S.-India Merit Review Panel will evaluate applicationsto ensure genuine collaborative partnership of the awardees and presence of balanced funding opportunities for work between United States and Indian researchers. Prior to a comprehensive merit evaluation, DOE and the Ministry of Science and Technology will each perform an initial review to determine that (i) the applicant is eligible for an award; (ii) the information required by the announcement has been submitted; (iii) all mandatory requirements are satisfied; and (iv) the proposed project is responsive to the objectives of the funding opportunity announcement. Applications will be reviewed in accordance with the following process:

1. DOE and the Government of India will separately review submitted applications to ensure compliance with the Funding Opportunity Announcement.
2. Joint Merit Review Panels consisting of an equal number of U.S. and Indian merit reviewers (subject experts) will evaluate compliant applications in accordance with the criteria identified in Part VII of this Announcement.

3. Each member of the Joint Merit Review Panel will submit his or her individual recommendation regarding the applications to the Joint Merit Review Panel team leader. The team leader will prepare a summary of the recommendations and furnish copies of the summary and the individual recommendations to representatives of both governments and to the Joint Appraisal Committee.
4. The DOE -Government of India Joint Appraisal Committee will rank consortium finalists based on the Joint Merit Review Panel'srecommendations and the Program Policy Factors and recommend consortia finalists to the deciding officials for award.
5. DOE and the Government of India each retain the exclusive right to make a final award decision. Funding will be awarded only when a consortium is selected by each government.

2. Selection

The Selection Official will consider the merit review recommendations, program policy factors, and the amount of funds available.

3. Discussions and Award

Contracting Officers may enter into discussions with selected applicants for any reason deemed 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) the U.S. Government needs additional information to determine that the recipient is capable of complying with the requirements in2 CFR Parts 200 and 910; and/or (4) the Government of India needs additional information to determine that the recipient is capable of complying with legal requirements; (5) special terms and conditions are required. Failure to resolve satisfactorily the issues identified will preclude award to the selected applicant.

D. ANTICIPATED NOTICE OF SELECTION AND AWARD DATES

Notification to the applicant selected for award and making the awards in December 2016.

PART VI – DOE AWARD ADMINISTRATION INFORMATION

A. AWARD NOTICES

1. Notice of Selection

The notice of selection is not an authorization to begin performance. Organizations whose applications have not been selected will be advised as promptly as possible. This notice will explain why the application was not selected.

2. Notice of Award

If a selected applicant is an entity other than a DOE/NNSA National Laboratory contractor, an Assistance Agreement issued by the contracting officer is the authorizing award document. It normally includes either as an attachment or by reference: (1) Special Terms and Conditions; (2) Applicable program regulations, if any; (3) Application as approved by DOE; (4) DOE assistance regulations at 2 CFR Parts 200 and 910, or, for research and to a university or non-profit, the Research Terms & Conditions and the DOE Agency Specific Requirements at http://www.nsf.gov/bfa/dias/policy/rtc/index.jsp.; (5) National Policy Assurances to be incorporated as award terms; (6) Budget Summary; and (7) Federal Assistance Reporting Checklist, which identifies the reporting requirements.

If the selected applicant is a DOE/NNSA National Laboratory contractor, DOE will fund the DOE/NNSA National Laboratory contractor through the DOE field work authorization system under its existing contract.

DOE/NNSA FFRDC contractors participating as subcontractors will be funded directly by DOE through the DOE field work authorization system.

The Government of India will issue its authorizing award document independently from the DOE.

B. ADMINISTRATIVE AND NATIONAL POLICY REQUIREMENTS

1. Administrative Requirements

The administrative requirements for DOE grants and cooperative agreements are contained in 2 CFR Part 200 and 2 CFR Part 910(See: http://ecfr.gpoaccess.gov). Grants and cooperative agreements made to universities, non-profits and other entities subject to 2 CFR Part 200 are subject to the Research Terms and Conditions located on the National Science Foundation web site at http://www.nsf.gov/bfa/dias/policy/rtc/index.jsp.

Change in governance, exit of existing consortia partner or inclusion of new consortia partner will require prior approval from the Secretariat.

2. Special Terms and Conditions and National Policy Requirements

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

Intellectual Property Provisions
The standard DOE financial assistance intellectual property provisions applicable to the various types of DOE recipients are located at http://energy.gov/gc/standard-intellectual-property-ip-provisions-financial-assistance-awards

Awards to a DOE/NNSA National Laboratory will be subject to the intellectual property terms and

conditions of the respective M&O contract.

Please note that these Intellectual Property Provisions shall be subject to Intellectual Property provisions included in the Agreement between DOE and the Government of India.

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

C. REPORTING

Reporting requirements are identified on the Federal Assistance Reporting Checklist, DOE F 4600.2, attached to the award agreement. For a sample Checklist, seehttp://energy.gov/cio/downloads/doe-f-46002

PART VI(A) – GOVERNMENT OF INDIA AWARD ADMINISTRATION INFORMATION

A. AWARD NOTICES

1. Notice of Selection

The selected consortium will be intimated through award letter, stating the approved funds. The consortia partners will sign agreement contract, IPR sharing agreement amongst the partners and provide their acceptance to begin performance. Organizations whose applications have not been selected will be informed as promptly as possible.

2. Notice of Award

A selected consortium will be issued the award letter including (1) Special Terms and Conditions of award; (2) Applicable program guidelines (3) Budget Summary; and (4) Reporting Guidelines, which identifies the reporting requirements.

B. ADMINISTRATIVE REQUIREMENTS

A single organizational letter of commitment is required from each organization participating as a team member. Each letter of commitment from an organization participating as a team member must be signed by the person authorized to commit the organization to a legally binding agreement. Each organizational letter of commitment is limited to one page.

If multiple Principal Investigators will be designated, provide a Coordination and Management Plan that describes the organizations structure of the project as it pertains to the designations of multiple Principal Investigators. This plan, at a minimum, must describe the process for making decisions on scientific/technical direction, publications, and intellectual property issues. The plan must also describe Principal Investigators' roles and administrative, technical, and scientific responsibilities for the project; communication plans; and procedures for resolving conflicts. IPR sharing agreement amongst the partner must be worked out.

Change in governance, exit of existing consortia partner or inclusion of new consortia partner will require prior approval from the Secretariat.

C. REPORTING

Reporting requirements will be identified on the Reporting Guidelines provided along with the award letter.

PART VII - QUESTIONS/AGENCY CONTACTS

A. QUESTIONS

Submit questions regarding the content of the announcement to: **JCERDC@HQ.DOE.GOV(US) and** JCERDC.PACE@INDOUSSTF.ORG. **(India)**

Due to the time required to conduct research and provide complete and accurate answers to questions, DOE and the Ministry of Science and Technology request that all questions be submitted no later than 12 noon Eastern Time [9:30 PM IST] on July 25, 2016. DOE and the Government of India will not be responsible for responding to questions submitted after the designated time.

B. CONTACT INFORMATION

Name: U.S. Department of Energy
E-mail: jcerdc@hq.doe.gov
FAX: (202) 287-1448
Telephone: (202) 287-1456

Name: Indo-US Science and Technology Forum
E-mail: JCERDC.PACE@INDOUSSTF.ORG.
FAX: 91-11-23321552
Telephone: 91-11-42691700

PART VIII - OTHER INFORMATION FOR UNITED STATES APPLICANTS

A. MODIFICATIONS

Notices of any modifications to this announcement will be posted on Grants.gov and the FedConnect portal. You can receive an email when a modification or an announcement message is posted by registering with FedConnect 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. More information is available at http://www.fedconnect.net.

B. GOVERNMENT RIGHT TO REJECT OR NEGOTIATE

DOE reserves the right, without qualification, to reject any or all applications received in response to this announcement and to select any application, in whole or in part, as a basis for negotiation and/or award.

C. COMMITMENT OF PUBLIC FUNDS

The Contracting Officer is the only individual who can make awards or commit the Government to the expenditure of public funds. A commitment by other than the Contracting Officer, either explicit or implied, is invalid.

D. PROPRIETARY APPLICATION INFORMATION

All applications will be reviewed by U.S. and Indian reviewers.

Patentable ideas, trade secrets, proprietary or confidentional commercial or financial information, disclosure of which may harm the applicant, must be included in an application only when such information is necessary to convey an understanding of the proposed project. For those portions of applications that include such proprietary or confidential information, such information must be included in a separate attachment, and will be subject to the following: The use and disclosure of such data may be restricted to U.S. Government and Government of India evaluators, 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 this applicant receives an award as a result of or in connection with the submission of this application, DOE and the Government of India 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 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 (name of applicant) requests not be released to persons outside the U.S. Government or the Government of India, except for purposes of review and evaluation."

E. EVALUATION AND ADMINISTRATION BY NON-FEDERAL PERSONNEL

In conducting the merit review evaluation, the U.S. Government may seek the advice of qualifiednon-Federal personnel as reviewers. The U.S. Government may also use non-Federal personnel toconduct routine, nondiscretionary administrative activities. The applicant, by submitting itsapplication, consents to the use of non-Federal reviewers/administrators. Non-Federal reviewersmust sign conflict of interest and non-disclosure agreements with DOE prior to reviewing an application. Non-Federal personnel conducting administrative activities will be subject to appropriate obligations of confidentiality.

F. INTELLECTUAL PROPERTY DEVELOPED UNDER THIS PROGRAM

Intellectual Property Rights (IPR) are subject to Annex I, Intellectual Property (IPR Annex), of the Agreement on Science and Technology Cooperation between the Government of the United States of America and the Government of the Republic of India (S&T Agreement), any IPR Framework Allocation Document associated therewith, and, as applicable, the respective standard IPR provisions of the Parties.

See Part VIII.B. 2., for information on DOE standard IP provisions.

Patent Rights

Normally, in a grant or cooperative agreement and a contract for the operation of a national laboratory, the U. S. Government will have certain statutory rights in an invention that is conceived or first actually reduced to practice under a DOE award, and rights in technical data first produced or specifically used in the performance of the award or laboratory contract. For a grant or cooperative agreement, and a contract for the operation of a national laboratory, the Bayh-Dole Act (35 U.S.C. 202) assures that a domestic small business, university or non-profit awardee will have the option to retain title to their own inventions, subject to the U.S. Government retaining a Government purpose license, march-in rights and a U.S. preference in licensing. Similarly, in the case of a contract for the operation of a national laboratory, or a cooperative agreement or grant to awardees who are not subject to the Bayh-Dole Act, e.g., large businesses, DOE will have issued, or would be prepared to issue, a “patent waiver” which would assure that those not subject to the Bayh-Dole Act will also have the option to retain title to their own inventions, subject to the same Government retained rights identified above. The waiver may address a requirement to manufacture new technology created under an award resulting from this FOA in the U.S. or provide other net economic benefits to the U.S. economy.Any patent waiver that may be granted is subject to certain terms and conditions in 10 CFR 784. For more information, see https://www.gpo.gov/fdsys/pkg/CFR-2011-title10-vol4/xml/CFR-2011-title10-vol4-sec784-12.xml.

However, any award under this FOA will be subject to the DOE-Government of India Agreement signed on November 4, 2010.

Rights in Technical Data

DOE normally retains unlimited rights in technical data first produced under the Agreement for United States government funded activities. Proprietary software or data developed solely at private expense will not normally be required to be delivered to the U.S. Government except as specifically negotiated in a particular agreement. For this FOA, DOE has determined that special protected data rights may apply. The provisions provide for the protection from public disclosure, for a period of up to five (5) years from the development of the information, of data that would be trade secret, or commercial or financial information that is privileged or confidential, if the information had been obtained from a non-Federal party. Generally, the provision entitled, Rights in Data − Programs Covered Under Special Protected Data Statutes, (2 CFR Part 910 Appendix A to Subpart D), would apply, but will be modified to list and identify data or categories of data first produced in the performance of the award that will be made available to the public, notwithstanding the statutory authority to withhold data from public dissemination, and will identify data that will be recognized by the parties as protected data.

G. NOTICE OF RIGHT TO REQUEST PATENT WAIVER

Applicants may request a waiver of all or any part of the rights of the United States in inventions conceived or first actually reduced to practice in performance of an agreement as a result of this announcement, in advance of or within 30 days after the effective date of the award. Even if such advance waiver is not requested or the request is denied, the recipient will have a continuing right under the award to request a waiver of the rights of the United States in identified inventions, i.e., individual inventions conceived or first actually reduced to practice in performance of the award. Any patent waiver that may be granted is subject to certain terms and conditions in 10 CFR 784.

Domestic small businesses and domestic nonprofit organizations will receive the patent rights clause at 37 CFR 401.14, i.e., the implementation of the Bayh-Dole Act. This clause permits domestic small business and domestic nonprofit organizations to retain title to subject inventions. Therefore, small businesses and nonprofit organizations do not need to request a waiver.

H. NOTICE REGARDING ELIGIBLE/INELIGIBLE ACTIVITIES

Eligible activities under this program include those which describe and promote the understanding of scientific and technical aspects of specific energy technologies, but not those which encourage or support political activities such as the collection and dissemination of information related to potential, planned or pending legislation.

I. REAL PROPERTY AND EQUIPMENT

With respect to the use, management, and disposition of all real property and equipment, 2 CFR §§ 200.310-316 shall be applicable to grants witha state, local government, Indian tribe, institution of higher education or non-profit organization. For-profit entities are subject to the requirements of 2 CFR Part 200 and 2 CFR Part 910; it is anticipated that the terms and conditions of the respective management and operating contract shall apply to awards to DOE/NNSA FFRDC contractors.

J. ENVIRONMENTAL, SAFETY AND HEALTH (ES&H) PERFORMANCE OF WORK AT DOE FACILITIES

With respect to the performance of any portion of the work under this award which is performed at a DOE-owned or controlled site, the recipient agrees to comply with all state and federal ES&H regulations, and with all other ES&H requirements of the operator of such site. The recipient shall apply this provision to its subawardees of any tier.

K. AVAILABILITY OF FUNDS

The U.S. Government's obligation under this award is contingent upon the availability of appropriated funds from which payment for award purposes can be made. No legal liability on the part of the U.S. Government for any payment may arise until funds are made available to the Contracting Officer for this award and until the awardee receives notice of such availability, to be confirmed in writing by the Contracting Officer.

PART VIII A - OTHER INFORMATION FOR INDIA APPLICANTS

A. MODIFICATIONS

Notices of any modifications to this announcement will be posted on www.iusstf.org

B. GOVERNMENT RIGHT TO REJECT OR NEGOTIATE

The Government of Indiareserves the right, without qualification, to reject any or all applications received in response to this announcement and to select any application, in whole or in part, as a basis for negotiation and/or award.

C. COMMITMENT OF PUBLIC FUNDS

The Contracting Officer is the only individual who can make awards or commit the Government of India to the expenditure of public funds. A commitment by other than the Contracting Officer, either explicit or implied, is invalid.

D. PROPRIETARY APPLICATION INFORMATION

All applications will be reviewed by Indian and U.S. reviewers.

Patentable ideas, trade secrets, proprietary or confidentional commercial or financial information, disclosure of which may harm the applicant, must be included in an application only when such information is necessary to convey an understanding of the proposed project. For those portions of applications that include such proprietary or confidential information, such information must be included in a separate attachment, and will be subject to the following: The use and disclosure of such data may be restricted to U.S. Government and Government of India evaluators, 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 this applicant receives an award as a result of or in connection with the submission of this application, DOE and the Government of India 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 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 (name of applicant) requests not be released to persons outside the U.S. Government or the Government of India, except for purposes of review and evaluation."

E. EVALUATION AND ADMINISTRATION BY NON-GOVERNMENTAL PERSONNEL

In conducting the merit review evaluation, the Government of Indiamay seek the advice of qualified non-governmental personnel as reviewers. The Government of India may also use non-governmental personnel to conduct routine, nondiscretionary administrative activities. The applicant, by submitting its application, consents to the use of non-governmental reviewers/administrators. Non-governmental reviewers must sign conflict of interest and non-disclosure agreements with the Government of India prior to reviewing an application.

F. INTELLECTUAL PROPERTY DEVELOPED UNDER THIS PROGRAM

Intellectual Property Rights (IPR) are subject to Annex I- Intellectual Property (IPR Annex) of the Agreement on Science and Technology Cooperation between the Government of the United States of America and the Government of the Republic of India (S&T Agreement), the respective standard IPR provisions of the Parties and the project annexes of the participants to the extent it is not in contravention

with the IPR annex and the associated IP framework allocation document.

G. DISPUTE RESOLUTION AND DISCLOSURE

The post-award IPR issues that can be resolved through discussions can be dealt with by the panel that is designated by the Steering Committee and the members of the Joint Appraisal Committee may serve as designee of the party for purpose of any dispute resolution discussions.

The disclosure requirements of the IP shall be in such form and manner as may be prescribed in the **Invention Disclosure Report** (can be accessed at http://www.iusstf.org/story/53-61-Joint-Clean-Energy-Research-and-Development-Center(JCERDC).html)

H. NOTICE REGARDING ELIGIBLE/INELIGIBLE ACTIVITIES

Eligible activities under this program include those which describe and promote the understanding of scientific and technical aspects of specific energy technologies, but not those which encourage or support political activities such as the collection and dissemination of information related to potential, planned or pending legislation.

APPENDICES/REFERENCE MATERIAL

Reference Material (can be accessed athttp://www.iusstf.org/story/53-61-Joint-Clean-Energy-Research-and-Development-Center(JCERDC).html

1. **Agreement on Science and Technology Cooperation Between the Government of the United States of America and the Government ofIndia**

2. **Invention Disclosure Report**

3. **Intellectual Property Framework Allocation Document**