FINANCIAL ASSISTANCE
FUNDING OPPORTUNITY ANNOUNCEMENT

U. S. Department of Energy

Office of International Affairs*

Office of Energy Policy and Systems Analysis

Office of Energy Efficiency and Renewable Energy

Office of Fossil Energy

Office of Science

U.S.-China Clean Energy Research Center: Energy and Water

Funding Opportunity Number: DE-FOA-0001285

Announcement Type: Initial

CFDA Number: 81.087
81.089
81.049

FOA Issue Date:	March 4, 2015
Informational Webinar	March 18, 2015
Submission Deadline for Information Sharing for Consortium Building [Optional]	March 26, 2015
Submission Deadline for Questions [Optional]	April 23, 2015
Submission Deadline for Applications:	May 4, 2015
Expected Date for Selection Notifications:	July 21, 2015
Expected Timeframe for Award Negotiations	July to September 2015
Anticipated Number of Awards	One
Total Amount to be Awarded	$25,000,000 Award Total ($12,500,000 Federal Obligations $12,500,000 Cost Share)

* The Office of International Affairs is the principal DOE coordinator of CERC activities.

EXECUTIVE SUMMARY

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.
Total Amount to be Awarded	$25M over the period of performance, consisting of $12.5M federal and $12.5M recipient cost share.
Number of Awards	DOE will make no more than 1 award
Types of Funding Agreements	Cooperative Agreement
Period of Performance	5 years
Eligible Applicants	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.
Cost Share Requirement	50%. For example, over the period of performance, DOE provides $12.5M (subject to availability of funds) and the Prime Recipient (Awardee) secures $12.5M in Non-Federal cost-share. Non-Federal cost share may exceed minimum requirement.
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.
FOA Summary	The Department of Energy is soliciting applications for the formation of a Consortium to pursue five identified R&D topics at the nexus of energy and water. These topics are: 1) water use reduction at thermoelectric plants; 2) treatment and management of non-traditional waters; 3) improving sustainable hydropower design and operation; 4) climate impact modeling, methods, and scenarios to support improved energy and water systems understanding; and 5) data and analysis to inform planning, policy, and other decisions. Each responsive proposal will address all five topics; DOE is offering a mechanism to facilitate partnering during the Application process. The Consortium that is funded through this solicitation will form a new technical track under the U.S.-China Clean Energy Research Center, which is a bilateral initiative to encourage R&D collaboration and accelerate technology development and deployment in both countries (see: http://www.us-china-cerc.org). This DOE funding opportunity will support the U.S. Consortium. In parallel, and with equivalent resources, Chinese funding will support a counterpart Chinese Consortium.
Webinar	A webinar will be held on March 18, 2015 about this Funding Opportunity Announcement. Details will be posted on the CERC website (http://www.us-china-cerc.org/Energy_Water.html) as they become available. Participation in this webinar is optional. See Section IV.B.
Information Sharing for Consortium Building	Providing information is optional. The deadline is March 26, 2015. See Section I.E.

Section I - FUNDING OPPORTUNITY DESCRIPTION

A. SUMMARY

The United States Department of Energy (DOE) is soliciting applications for the formation of a Consortium to pursue five identified R&D topics at the nexus of energy and water. These topics are:

1) Water use reduction at thermoelectric plants;
2) Treatment and management of non-traditional waters;
3) Improving sustainable hydropower design and operation;
4) Climate impact modeling, methods, and scenarios to support improved energy and water systems understanding; and
5) Data and analysis to inform planning, policy, and other decisions.

Each responsive application will address all five topics; DOE is offering a mechanism to facilitate partnering during the Application process. The Consortium that is funded through this solicitation will form a new technical track under the U.S.-China Clean Energy Research Center, which is a bilateral initiative to encourage R&D collaboration and accelerate technology development and deployment in both countries (see: http://www.us-china-cerc.org). DOE funding will support the U.S. Consortium. In parallel, and with equivalent resources, Chinese funding will support a counterpart Chinese Consortium.

B. BACKGROUND

The United States and China are the world's largest economies. They are top global energy consumers, energy producers, and greenhouse gas emitters, together accounting for about 40% of annual global greenhouse gas emissions. Both face similar energy-related environmental challenges and share strategic motivations for accelerating clean energy technology development and deployment. The U.S. and China will play central roles in the world's transition to a clean energy economy in the years ahead, and innovation in this area will play an important role in enabling and facilitating this transition.

In order to facilitate the rapid development and commercialization of technologies with strong climate change applications, on November 17, 2009, the U.S. Department of Energy (DOE), Chinese Ministry of Science and Technology (MOST) and Chinese National Energy Administration (NEA) agreed to implement a U.S.-China Clean Energy Research Center (CERC) through a signed Protocol[1]. Over the five years since this agreement, the CERC has successfully conducted joint research and development on clean energy topics by teams of scientists and engineers from the U.S. and China.

CERC currently operates 3 technical tracks:

- Building energy efficiency,
- Clean vehicles,
- Advanced coal technologies with carbon capture, utilization and/or sequestration.

Each track comprises the equivalent of a $50 million commitment over 5 years, that is, $25 million for the U.S. effort and $25 million for the China effort. In the U.S., this is broken down per track as $5 million per year, composed of $2.5 million per year in DOE funds and matched by another $2.5 million per year in non-Federal cost-share by the respective consortium.

Following the success of the first 5 years, a renewal and expansion of the CERC was jointly announced by President Obama and President Xi Jinping on November 12, 2014. In addition to renewing the three

[1] Protocol between the Department of Energy of the United States of America and the Ministry of Science and Technology of the People's Republic of China for Cooperation on a Clean Energy Research Center (the Protocol) (see Appendix A).

existing CERC tracks, the two countries agreed to establish a new track devoted to water-related aspects of energy production and use, sometimes referred to as the energy-water nexus. To operationalize this new track, DOE intends to make an award under this Funding Opportunity Announcement (FOA). The U.S. consortium selected under this announcement will be funded by the DOE Office of Fossil Energy, DOE Office of Energy Policy and Systems Analysis (EPSA), DOE Office of Energy Efficiency and Renewable Energy (EERE), and DOE Office of Science[2]. The principal DOE coordinator of CERC activities is the Office of International Affairs[3].

Under this FOA, an award will be made to a U.S. consortium[4] with the knowledge and experience to undertake a first-rate collaborative research program in conjunction with researchers in China. This consortium must leverage existing resources and physical infrastructure and will not require new "bricks and mortar" facilities. To keep the focus on research and international collaboration, management and administrative expenses will be kept to a minimum. The Energy and Water consortium will help bring together top talent from both countries and is expected to generate technological advancement by leveraging research resources and genuine collaboration between U.S. and Chinese researchers.

The Energy and Water priority research areas identified in this FOA build on ideas presented in DOE's report, *The Water-Energy Nexus: Challenges and Opportunities* (June 2014)[5]. Present day water and energy systems are interdependent. From providing cooling to power plants to irrigating crops for biofuels, water is used in many phases of electricity generation and energy production. Conversely, energy is required to extract, convey, and deliver water of appropriate quality for diverse human uses, and then again to treat wastewaters prior to their return to the environment. Historically, interactions between energy and water have been considered on a regional or technology-by-technology basis. Despite their interdependency, energy and water systems have been developed, managed, and regulated independently in the U.S.

Several current U.S. trends are increasing the urgency to address the energy-water nexus in an integrated way. First, precipitation and temperature patterns across the U.S. are undergoing rapid change with increasing frequency and intensity of extreme events. Second, U.S. population growth and regional migration trends indicate that the population in arid areas such as the Southwest is likely to continue to increase, further impacting the management of both energy and water systems. Third, introduction of new technologies in the energy and water domains could shift water and energy demands. Moreover, policy developments addressing water impacts of energy production are introducing additional complexities for decision making. As both the challenges and opportunities at the energy-water nexus within the U.S. are mirrored in China, productive research collaboration is expected to benefit both nations.

C. TECHNICAL ENERGY AND WATER CATEGORIES OF INTEREST

The U.S. government will select a consortium to conduct research related to the nexus of Energy and Water under the CERC pursuant to this FOA. Responsive applications will address all of the five Topic Areas

[2] More information can be found at (respectively):
www.energy.gov/fe/office-fossil-energy
www.energy.gov/epsa/office-energy-policy-and-systems-analysis
www.energy.gov/eere/office-energy-efficiency-renewable-energy
www.science.energy.gov

[3] More information can be found at www.energy.gov/ia/office-international-affairs

[4] The term "consortium" means any entity which coordinates the activities of multiple performers and organizations doing work on the various identified topics. The U.S. consortium takes responsibility for the ultimate success of the U.S. portion of the new CERC track, managing and administering its activities, and resolving issues which may arise with assistance from DOE.

[5] Report can be found at http://www.energy.gov/water-energy-tech-team

below (but are not required to address all of the specific areas of interest for each Topic Area). Proposed work may span from fundamental research to technology demonstration or use of models by decision-makers. While DOE funds should primarily support R&D, a small portion of DOE funds may be applied to consortium management costs. Applicants are required to distribute DOE funding that is not applied to consortium management across Topic Areas within the percentage ranges given below. The cumulative total across all Topic Areas should equal 100%. This required distribution does not apply to cost share.

Topic Area 1: Water Use Reduction at Thermoelectric Plants (20-30%)

Both the U.S. and China use significant amounts of water for thermoelectric cooling. New technologies can help improve the resilience of electricity generation under arid or variable conditions. Of interest are advanced materials, technologies, and systems to decrease the cost and footprint of dry cooling systems, increase waste heat recovery in plant operations, and increase water recovery. Specific areas of interest include but are not limited to:

- Dry or water-efficient cooling
- Alternatives to water as a working fluid
- Water-efficient carbon capture and sequestration (CCS) technologies
- Water recovery from plant operations
- Effective fuel use to reduce the need for cooling

Topic Area 2: Treatment & Management of Non-Traditional Waters (20-30%)

Saline water, including brackish groundwater and produced water from energy operations, can offer additional water resources. Of interest are innovations in desalination and other treatment technologies matched to the diverse characteristics of non-traditional waters and projected beneficial uses. The production of coal, oil, and natural gas can impact water quality and groundwater resources. Systems that support monitoring and management can inform responsible operations through the full lifecycle. Specific areas of interest include but are not limited to:

- Advanced treatment technologies and materials (e.g. forward osmosis, nanofiltration, membrane distillation, capacitive deionization, reverse electrodialysis, pressure-retarded osmosis)
- System optimization, including tunable water treatment systems (that is, water treatment systems that can be controlled and adjusted in real time to accept varied water resource inputs and produce varied water quality outputs)
- The integration of alternate energy sources (e.g. waste heat, low temperature geothermal, low temperature concentrating solar power, pressure/ temperature differentials, co-produced natural gas)
- Modeling and analysis to support water resource protection in energy development
- Technology to support water resource protection in energy development (e.g. waterless stimulation as an alternative to hydraulic fracturing)
- Sensor systems for real time measurement of water quality and quantity in energy operations

Topic Area 3: Improving Sustainable Hydropower Design and Operation (10-20%)

Understanding how reservoirs and water releases through hydropower facilities and other major dams affect water temperature and quality in rivers is extremely complicated. It is also very necessary for 1) modeling the linkages between the nation's energy and water systems, 2) simulating water dependencies and the implications of extreme meteorological events, and 3) identifying potential tipping points or vulnerabilities. Building upon existing work to dispatch hydropower

facilities for the benefit of aquatic ecosystems and energy infrastructure, additional technological or operational improvements could minimize impacts, reduce future vulnerabilities, and potentially allow hydropower facilities to improve water quality management. Specific areas of interest include but are not limited to:

- Modeling and improved monitoring of the effects of hydropower and reservoirs on water temperature regimes, particularly for the management of aquatic ecosystems and operation of other energy facilities
- Evaluating the benefits of technology or operational improvements for hydropower facilities that can improve the ability to effectively manage water temperatures and flow for ecological and other energy purposes
- Incorporating hydropower systems into impact, adaptation, and vulnerability (IAV) models that can identify sensitivities related to future changes to climate or major energy and water infrastructure systems

Topic Area 4: Climate Impact Modeling, Methods, and Scenarios to Support Improved Energy and Water Systems Understanding (10-15%)

Improving understanding of complex system dynamics at multiple scales can enable next generation simulations at the energy-water nexus, which can inform better operational and planning decisions in energy and water infrastructure. Fine scale representations are critically important for exploring regional and local stressors, responses, and coupled behaviors at the energy-water nexus. Understanding both changing baseline conditions and characteristics of extreme events can help illuminate system thresholds and tipping points. Specific areas of basic research interest include but are not limited to:

- Impact, adaptation, and vulnerability (IAV) model enhancements and diagnostic evaluations to support energy and water systems understanding
- Modeling and analysis of extreme events
- Characterization, visualization, and communication of parametric sensitivities, simulation uncertainties, and risk
- Integration/interoperability across modeling platforms
- Scenario methods
- Telescopic techniques for multi-scale analysis

Topic Area 5: Data and Analysis to Inform Planning, Policy, and Other Decisions (15-25%)

Systems analyses addressing water and energy flows, energy infrastructure and technology deployment, market analysis and finance, and regulations can inform relevant water, energy, and coupled decision-making at multiple scales. In addition, region-specific analyses of the regulatory, economic, and market aspects of treating produced water from oil, gas, geothermal, carbon underground storage, and other sources can inform regional plans and decisions. Specific areas of interest include but are not limited to:

- Data collection, synthesis, analysis, and interoperability (e.g. national- and regional-scale water and energy consumption and flows; water resource quantity and quality related to energy systems planning and operations)
- Analysis and/or future scenarios to inform integrated energy and water resource allocation, dispatch, policy and/or planning

- Techno-economic analysis tools to inform technology R&D investment or technology selection (e.g. lifecycle water cost in energy systems, target technology design specifications, infrastructure investment and finance)
- Monitoring systems design and/or analysis to inform efficient or resilient operations (e.g. low-energy scheduling and operations for urban water supply)

D. GOVERNANCE AND STRUCTURE

1. International CERC

The Energy and Water Track will be overseen by the governance structure of the U.S.-China CERC. Pursuant to Section V.1 of the Protocol (see Appendix A), a Joint Steering Committee provides high-level review and guidance for the activities and direction of research conducted in connection with all tracks of the CERC. The Joint Steering Committee consists of Secretary of Energy of the U.S. Department of Energy, Minister of the Chinese Ministry of Science and Technology, and Administrator of the National Energy Administration of the People's Republic of China. The Joint Steering Committee meets annually to review the CERC's progress and provide strategic guidance for the CERC. It does not control budgets, research projects or personnel of Center operations in either country.

Pursuant to Section V.2, the Protocol calls for a Joint Advisory Panel. As implemented, there is an Executive Committee established by the two governments for each CERC technical track. These Committees serve a similar purpose and meet annually to review the work of the Center. They also provide suggestions and insights on the state of, and needs for, clean energy research and development activities to the Secretariat, Steering Committee, and Consortia Directors.

2. U.S. CERC

The CERC Steering Committee is supported by a Secretariat, composed of senior-level officials from both countries. In the U.S., DOE maintains the U.S. part of the CERC Secretariat. It is housed at DOE headquarters in the Office of International Affairs, which will act as the principal coordinator of U.S. activities under the CERC and provide liaison with counterparts in China. The work of the existing CERC tracks is currently conducted by consortia organized for each of the three research areas. These consortia currently consist of entities or individuals from academia, the private sector, non-governmental institutions, national laboratories, and elsewhere. The Secretariat is the primary DOE point of contact for the three current Consortia Directors, and will serve similarly for the Energy and Water CERC. Additionally, the U.S. part of the Secretariat is the coordinating body between the consortia and other DOE Program Offices.

3. Energy and Water Track

The Director of the U.S. consortium shall be responsible for all aspects of management, oversight, and administration of the U.S. consortium and its research activities, and for coordination of joint efforts with the Chinese consortium. Apart from carrying out research and development, other Consortium activities may include organizing and/or hosting a joint annual meeting; participation in CERC Steering Committee meetings and periodic technical and/or peer reviews; and submission of written quarterly reports on plans and progress of individual projects. The plan for internal Consortium management and technical leadership, including an organization chart, should be clearly described in the application.

It will be the responsibility of the Consortium to provide evidence of cost-share matching the level of support to be provided by the Department of Energy. The total amount of cost-share, including the expected sources and structure of contributions, should be clearly described in the application.

Appended to the U.S.-China CERC Protocol is an Annex on Intellectual Property Rights, which calls for a Technology Management Plan (TMP) to be developed and jointly approved before work can begin. TMPs for each of the existing 3 CERC tracks exist and have been endorsed by the U.S. and Chinese Governments. These documents comport to U.S. law, Chinese law, and DOE statutory requirements

regarding treatment of intellectual property (IP). These documents are intended to protect IP in circumstances of U.S.-China collaborative research. They are also intended to facilitate, under favorable terms and conditions to project participants, the lawful exploitation of IP arising from joint research. All documents are available on the CERC website (http://www.us-china-cerc.org). Examples of a TMP and letter of endorsement are given in Appendix B and Appendix C, respectively.

Applicants should familiarize themselves with the Protocol, its Annex on Intellectual Property Rights, the TMPs, and the Government endorsements. During the award negotiation process, the new Consortium will be expected to develop similar IP governing documents. Once jointly approved and endorsed, Consortium members will be required to certify their intention to comply.

Funding will be competitively awarded on the basis of a merit review of the applications as detailed in this FOA. Subject to availability of funds, $2,500,000 in federal funding is expected to be available in the first year of operation, with an additional $2,500,000 expected to be available each year thereafter over the period of performance. Consortium progress will be monitored by DOE.

4. Collaboration with Chinese Researchers

The CERC is intended to promote joint research and development on clean energy by teams of scientists and engineers from the U.S. and China. In materials responding to this FOA, applicants are required to describe their experience in collaborating with Chinese researchers. The likelihood of significant joint work between U.S. and Chinese researchers will be an important factor in DOE's selection of an awardee. The U.S. Government (DOE) shall exercise sole authority in making the final selection under this FOA.

Applicants may take note that Chinese authorities have agreed with DOE in principle to support a Chinese-counterpart consortium at an equivalent level of investment over 5 years. Applicants are reminded that DOE-provided funds under this FOA must be applied to support the U.S.-side of the bilateral collaboration and shall not be redirected to support entities or activities of the Chinese-counterpart consortium. Chinese institutions are expected to carry out their jointly agreed upon responsibilities for collaborative research employing resources made available in China.

Appendix E provides a partial list of entities in China identified by DOE that are known to have knowledge and expertise in various areas of the energy-water nexus. An applicant may contact one or more of these entities, or any others in China, with the understanding that no commitments have been made by Chinese authorities to support or fund these or other Chinese entities under the anticipated bilateral collaboration. Decisions in China about funding in this regard are expected to be considered later and made independently by Chinese authorities, most likely at a time in the future after a U.S. consortium has been formed.

Applicants are encouraged to illuminate in their proposals how the U.S. consortium and its proposed work will advance knowledge, technology, and bilateral cooperation in the areas of interest, as stated in this FOA, with expected outcomes that will benefit both countries. Applicants may contact any entity in China to gain information, explore opportunities, and form potential ideas along these lines.

Once DOE has made an award, the chosen consortium will be required to develop a joint work plan with its counterpart in China. It is expected that research teams will be jointly formed for each Topic Area. The joint work plan must be agreed upon by the directors of the U.S. and Chinese Consortia before the technical work may begin. Additionally, progress will be reviewed annually, at which the time joint work plan may be adjusted as priorities and emerging developments may require.

E. FOSTERING COLLABORATION TO BUILD U.S. CONSORTIUM

Given the broad range of topics required for applications, DOE will help connect entities seeking collaborators for applications by helping to identify interested U.S. entities and facilitating the exchange of contact information. This is optional for Applicants. If you would like to be on the list of entities seeking partners, please e-mail the following information to alexander.mclean@hq.doe.gov by 11:59pm ET on

March 26, 2015 with the subject line "FOA-0001285":

- Contact Name
- Organization and address
- Phone number
- Email address
- Are you interested in leading a consortium, participating in a consortium, or both?
- If interested in leading a consortium, which Topic Area(s) are you seeking partners for? [Specify Topic Area 1, 2, 3, 4, and/or 5]
- If interested in being part of a consortium, which Topic Area(s) are you interested in? [Specify Topic Area 1, 2, 3, 4, and/or 5]

DOE will compile this information and anticipates releasing it by e-mail on March 27, 2015 only to those who have provided information. DOE will not provide this list to prospective applicants that have not provided all of the above information.

F. APPLICATIONS NOT OF INTEREST

The following types of applications will be deemed nonresponsive and will not be reviewed or considered:

- Applications for a specific project or projects only associated with one Topic Area.
- Applications that do not incorporate all of the Topic Areas (see Section I.C.).
- Applications with federal funding distribution across Topic Areas outside of the percent ranges given in Section I.C. (This distribution requirement does not apply to cost share.)
- Applications for a period of performance of less than five years.
- Applications requesting less than $12.5M in federal funds over the period of performance.
- Applications providing less than $12.5M in cost share.

Section II - AWARD INFORMATION

A. TYPE OF AWARD INSTRUMENT

DOE anticipates awarding one cooperative agreement under this funding opportunity announcement.

B. ESTIMATED FUNDING

Approximately $2,500,000 annually is expected to be available from DOE (matched with $2,500,000 through recipient cost-share). Funding for all awards and future budget periods are contingent upon the availability of funds appropriated by Congress for the purpose of this program, the availability of future-year budget authority, and satisfactory performance based on annual reviews.

C. MAXIMUM AND MINIMUM AWARD SIZE

Ceiling (i.e., the maximum amount for an individual award made under this announcement):
$25,000,000 ($12.5M in federal funds over the five year period of performance, subject to the availability of funds)

Floor (i.e., the minimum amount for an individual award made under this announcement):
$25,000,000 ($12.5M in federal funds over the five year period of performance, subject to the availability of funds)

D. EXPECTED NUMBER OF AWARDS

DOE anticipates making one award under this announcement. DOE may choose not to issue an award.

E. ANTICIPATED AWARD SIZE

The anticipated award size for this announcement is $25,000,000, consisting of $12,500,000 in federal funding (subject to the availability of funds) and $12,500,000 in required recipient cost share.

F. PERIOD OF PERFORMANCE

DOE anticipates making an award with a duration of five years.

G. TYPE OF APPLICATION

DOE will accept only new applications under this announcement.

H. STATUTORY AUTHORITY

Statutory authority derives from the Department of Energy Organization Act, 42 USC 7256(a).

Section III - ELIGIBILITY INFORMATION

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[6] 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[7] 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.

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[6] Nonprofit organizations described in section 501(c)(4) of the Internal Revenue Code of 1986 that engaged in lobbying activities after December 31, 1995, are not eligible to apply for funding.

[7] National Nuclear Security Administration

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

The cost share, or matching, must be at least 50% of the total allowable costs of the project (i.e., the sum of the Government share[8] and the recipient share of allowable costs equals the total allowable costs of the projects) and must come from non-Federal sources unless otherwise allowed by law. In other words, over the period of performance, the Prime Recipient secures $12.5M of external funds or eligible cost-share and DOE provides $12.5M of funding, subject to availability of funds. (See 2 CFR part 200 as amended by 2 CFR part 910 for the applicable cost sharing requirements.)

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.

[8] Including FFRDC contractor costs if applicable.

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

Proposing entities must designate a lead organization as the head of the Consortium. Applications must be submitted on behalf of the Consortium by the lead organization. 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.

Section IV - APPLICATION AND SUBMISSION INFORMATION

A. LETTER OF INTENT AND PRE-APPLICATION

1. Letter of Intent.

Letters of Intent are not required.

2. Pre-application

Pre-applications are not required.

B. INFORMATIONAL WEBINAR

DOE will conduct an informational webinar during the FOA process, after the initial FOA release but before the Application due date. The webinar will be held on March 18, 2015. Details will be posted on the CERC website (http://www.us-china-cerc.org/Energy_Water.html) as they become available. The purpose of this webinar will be to review the funding opportunity announcement and respond to online questions already submitted as appropriate (see Section VII.A). Attendance is not mandatory and will not positively or negatively impact the overall review of any Applicant submissions. Questions resulting from the webinar will not be answered live, but can be submitted through the standard FOA question and answer process (see Section VII.A).

C. CONTENT AND FORM OF APPLICATION

Application forms and instructions are available at Grants.gov. To access these materials, go to http://www.grants.gov, select "APPLICANT", click "Apply for Grants," and then select "Download a Grant Application Package." Enter the CFDA and/or the funding opportunity number located on the cover of this announcement and then follow the prompts to download the application package.

The Applicant must complete **all** 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.

1. SF 424 - Application for Federal Assistance

Complete this form first to populate data in other forms. Complete all required fields in accordance with the pop-up instructions on the form.

2. 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.

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 Attachment: Project Narrative File

The project narrative must not exceed 40 pages, including cover page, table of contents, charts, graphs, maps, photographs, and other pictorial presentations, when printed using standard 8.5" by 11" paper with 1 inch margins (top, bottom, left, and right) and single spaced. EVALUATORS WILL REVIEW ONLY THE NUMBER OF PAGES SPECIFIED IN THE PRECEDING SENTENCE. The font must not be smaller than 11 point. Do not include any Internet addresses (URLs) that provide information necessary to review the application. See Section VIII.D for instructions on how to mark proprietary application information. Save the information (narrative contents and appendices) in a single file named "ProjectNarrative.pdf," and click on "Add Mandatory Other Attachment" to attach.

The contents of the project narrative are specified in order to ensure that the merit reviewers have the necessary information to conduct proper evaluations. In addition, Applicants should review the merit review criteria and program policy factors in Section V.A before preparing the project narrative.

I. Executive Summary. This section must not exceed five pages and should provide a concise overview of the project plan summarizing the vision and expected impact of the proposed consortium, including:

- Overall objectives and impact of the consortium;
- Structure of the consortium;
- How the research and development (R&D) program will lead to improved energy and water systems;
- Clearly stated short, intermediate, and long term goals of the consortium within each of the five Topic Areas;
- The strategy for transitioning consortium activities from R&D into productive use such as technology demonstration and deployment (D&D) or use of data, models, and analysis by decision makers; and
- Envisioned approach for building the joint work plan and collaboration with Chinese counterparts.

II. Program of R&D. Applicants must provide information regarding the proposed research for the U.S. consortium for each of the five Topic Areas, with more specific detail on the proposed work which would take place in the first year (though it is understood that if selected, the proposed work of an applicant may undergo modifications as a joint work plan is developed with Chinese counterparts). Applications should include:

- A description of the proposed program of R&D for each Topic Area, including major tasks, milestones[9], and deliverables;
- A brief description of the scientific, engineering, and technical background (including references to peer-reviewed literature and relevant patents) and important gaps for each Topic Area;
- An outline of potential scientific, engineering, and technical obstacles/risk to achieving the research objectives and approaches to be used to overcome them for each Topic Area;
- An explanation of how the consortium will integrate and balance the unique technical strengths of each participant (including leveraged facilities and resources) to produce a program of R&D and application with direct impact on the Topic Areas; and
- A statement of the proposed approach to rapidly reconfigure R&D activities if needed to respond to key challenges (including changes in the energy-water nexus landscape) and promising developments.

[9] The Applicant should provide appropriate milestones throughout the project to demonstrate success, where success is defined as achievement rather than simply completing a task. To ensure that milestones are relevant, Applicants should follow the SMART rule of thumb, which is that all milestones should be **S**pecific, **M**easurable, **A**chievable, **R**elevant, and **T**imely.

III. Qualifications and Resources. Applicants should discuss the unique qualifications and resources of each consortium member and how these qualification and resources will be integrated into the consortium team including:

- A description of the relevant scientific, engineering and technical expertise, experience, and capabilities of the proposed Consortium organizations in the fields needed for project success;
- A description of the relevant experience of the Consortium Director, Topic Leads, and other senior/key personnel in project, program, and personnel management for projects of comparable magnitude;
- A description of the role and intellectual contribution of the Director, Topic Leads, and other senior/key personnel;
- A description of any previous collaboration between consortium members;
- A description of the existing resources available to the proposed consortium including access to existing research space, instrumentation, and facilities at the participating institutions;
- An account of preliminary studies that may be pertinent to the proposed work, including any other information that will help to establish the experience and competence of the principal investigator(s) to pursue the proposed project for each Topic Area; and
- An assessment of the time commitment and availability of the Director, Topic Leads, and other senior/key personnel to support the program, including description of their involvement in other major projects.

IV. Management Plan. A successful application will include a comprehensive and systematic approach to achieving program objectives. This section must provide a clear and substantive plan for the organization and management of the proposed consortium, including:

- An organizational chart and description of the organizational structure that articulates clearly delineated roles and responsibilities of the Consortium Director, Topic Leads, and other senior/key personnel for each project;
- Plans for business agreements between the Consortium Director, Topic Leads, and other senior/key personnel, including publication arrangements, communications, intellectual property issues, and procedures for resolving conflict;
- A description of the proposed approach for replacing under-performing Subrecipients or partners;
- A description of how the management structure balances the interests of each team member with the interests of the consortium team as a whole;
- A description of the planned approach to information sharing within the consortium;
- A plan to promote the adoption, manufacture, and commercialization of innovative technologies resulting from the consortium's activities by industry in the U.S, including institutional experience/expertise in these activities;
- A description of how the consortium will enable meaningful long-distance communications and collaborations with China;
- A plan for periodic technical review;
- A plan to maintain and grow the set of active partners; and
- An explanation of the performance monitoring systems to ensure the consortium remains within the proposed scope, cost, and schedule.

The project narrative file must also include the following appendices, following the formatting guidelines prescribed above. Do not attach these appendices as separate files – they should be part of the file named "ProjectNarrrative.pdf". Note that these appendices will NOT count towards the project narrative page limitation.

- **Appendix 1: Biographical Sketch**
  Provide a biographical sketch for the Consortium Director, each Topic Lead, and other senior/key personnel. The biographical information for each person must not exceed three pages. Include the following sections in each biographical sketch:

  Name, Contact Information (phone, e-mail), and Organization

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 professional/academic positions with a brief description in chronological order.

Publications: Provide a list of up to 10 publications most closely related to the proposed work. 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.

- **Appendix 2: Consortium Partners**
  Provide the list of Consortium partners, including the following information:
  - Organization
  - Relevant personnel (e.g. Director, Topic Lead, other senior/key personnel)
  - Contribution to Consortium
  - Contact information

- **Appendix 3: Relevant China Experience**
  For the Director, Topic Leads, and other senior/key personnel, provide a list of experiences working on energy and water issues in China and/or in collaboration with Chinese organizations.

- **Appendix 4: Intellectual Property (IP) Plan**
  The applicant shall include a proposed intellectual property plan for implementing the provisions of the Protocol and its associated documents (FOA Appendix A and associated Annex 1) and DOE standard IP provisions. See Section VI.D for a detailed description of the impact of the Protocol on intellectual property rights and Section VI.B.2 for information on DOE standard IP provisions. This Plan should also feature a discussion of data management, including the approach to determine which data would be eligible for special protected data rights and which data would be publicly accessible.

- **Appendix 5: Current and Pending Support**
  Provide a list of all current and pending support (both Federal and non-Federal) for the Director, Topic Leads, and other senior/key personnel, including subawardees and consultants, for ongoing projects and pending applications. For each organization providing support, show the total award amount for the entire award period (including indirect costs) and the number of person-months per year to be devoted to the project by the senior/key person. Concurrent submission of an application to other organizations for simultaneous consideration will not prejudice the review process.

- **Appendix 6: Bibliography & References Cited**
  Provide a bibliography of any references cited in the 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.

- **Appendix 7: Facilities & Other Resources**
  This information is used to assess the capability of the organizational resources, including Subrecipient 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 consortium. Describe only those resources that are directly applicable to the proposed work. Describe other resources available to the project (e.g. machine shop, electronic shop) and the extent to which they would be available to the project.

- **Appendix 8: Equipment**
  List major items of equipment already available for this project and, if appropriate, identify location and pertinent capabilities.

- **Appendix 9: Statement of Conflict of Interest**
  Identify potential, apparent, or actual organizational and individual conflicts of interest and proposed mitigation for the Consortium Director, Topic Leads, and other senior/key personnel named in the application. If no such conflict exists for a particular individual, this must also be stated. Prior to award, DOE reserves the right to require the submission of a Conflict of Interest Management Plan.

- **Appendix 10: 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, including tasks and milestones (also see next Appendix 11 in this Section IV.C.3). The Statement of Project Objectives must contain a clear, concise description of all activities to be completed during the period of performance and follow the structure discussed below. Note that during the negotiations period between selection and award, more detail will be required for the first year of work. The Statement of Project Objectives may be released to the public by DOE 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 <u>less than 10 pages</u> in total for the proposed work. Applicants shall prepare the Statement of Project Objectives in the following format:

TITLE OF WORK TO BE PERFORMED

A. OBJECTIVES
Include one paragraph on the overall objective(s) 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 Topic Areas, as appropriate. Management tasks should be embedded into the Topic Area sections. Milestones, including deliverables[10], should be incorporated into the appropriate Task sections as shown below.

<u>TOPIC AREA 1</u>
(This section should provide a brief summary of the planned approach to this project.)

Task 1.1 – *(Title)*
(Description)

[10] Note on Deliverables: The periodic, topical, and final reports shall be submitted in accordance with the "Federal Assistance Reporting Checklist" (Section VI.C) and the instructions accompanying the checklist.

Milestone 1.1.A (if applicable) *(Title & Description)*
Milestone 1.1.B (if applicable) *(Title & Description)*
…
Subtask 1.1.1 - *(Title)*
(Description)

Milestone 1.1.1.A (if applicable) *(Title & Description)*
Milestone 1.1.1.B (if applicable) *(Title & Description)*
…

Task 1.2 - *(Title)*
…

TOPIC AREA 2

Task 2.1 - *(Title)*
…

- **Appendix 11: Milestone Summary Table**
  The Applicant should provide appropriate milestones for the project to demonstrate success, where success is defined as achievement rather than simply completing a task. To ensure that milestones are relevant, Applicants should follow the SMART rule of thumb, which is that all milestones should be **S**pecific, **M**easurable, **A**chievable, **R**elevant, and **T**imely.

Milestone Summary Table						
	Applicant Name:					
	Consortium Title:					
	Milestone Number	**Milestone Name**	**Associated Task (or Subtask) Number and Title**	**Milestone Verification Process (What, How, Who, Where)**	**Anticipated Quarter (Quarters from Start of the Project)**	**Milestone Description**
Topic Area 1						
…						
Topic Area 2						
…						

- **Appendix 12: Organizational Letters of Commitment**
  A single organizational letter of commitment is required from each organization participating as a Consortium participant. Each letter of commitment from an organization participating as a Consortium participant 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.

4. Other Attachment: SF 424 A (Prime Recipient Budget)

The Applicant 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 on the DOE Financial Assistance Forms Page at http://energy.gov/management/office-management/operational-management/financial-assistance/financial-assistance-forms under DOE budget forms.

The Applicant 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 (see Section IV.G). Save the information in a single file named "SF424A.xls," and click on "Add Optional Other Attachment" to attach. Note that for this FOA, submission of this budget file is **required**.

5. Other Attachment: SF 424 A (Subrecipient Budget(s))

The Applicant 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. Use the SF 424 A Excel for Non Construction, found on the DOE Financial Assistance Forms Page at http://energy.gov/management/office-management/operational-management/financial-assistance/financial-assistance-forms under DOE budget forms. Save each Subaward budget (budget per year and cumulative budget) in a single, separate file. Use "SF424A_" and up to 10 letters of the subawardee's name (plus .xls) as the file name (e.g. SF424A_ucla.xls or SF424A_energyres.xls), and click on "Add Optional Other Attachment" to attach. Note that for this FOA, submission of this budget file is **required** for each subawardee that is expected to perform work estimated to be more than $100,000.

6. Other Attachment: Budget Justification

The Applicant must justify the costs proposed in each Object Class Category/Cost Classification category (i.e. 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 to support the budget). The Applicant should provide the name of the cognizant/oversight agency, if applicable, and the name and phone number of the individual responsible for negotiating the Applicant's indirect rates. Save the budget justification information in a single file named "BudgetJustification.pdf," and click on "Add Optional Other Attachment" to attach. Note that for this FOA, submission of this budget justification is **required**. To assist Applicants, OMB Form 1910-5162, PMC 123.1 Detailed Budget Justification Form (https://www.eere-pmc.energy.gov/ProcureNet/FinancialAssistance/Forms/Procurenet/PMC123_1_Detailed_Budget_Justification.xls) is a suggested format for completing the budget justification document.

As specified in Section III.B, a minimum of 50% cost share is a requirement of this award.

DOE Funding Summary

Provide a breakdown of DOE (federal) funding for the project budget for year 1 and years 1-5 by entity and Topic Area in U.S. dollars in tabular form (following the template given below). Replace "Prime" with name of the primary (lead) entity and "Sub #1" through "Sub #n" with the name of the Subrecipient or sub-contractor entities, if applicable. Topic Areas should correspond to those given in Section I.C. Expand or contract the table as needed to add/subtract entities (columns). Note that for this FOA, submission of this budget file is **required**.

Federal Funding – Year 1						
	[Prime]	[Sub #1]	[Sub #2]	…	[Sub #n]	Total
Consortium Management						
Topic Area 1						
Topic Area 2						
Topic Area 3						
Topic Area 4						
Topic Area 5						
Total						

Federal Funding (Total) – Years 1-5						
	[Prime]	[Sub #1]	[Sub #2]	…	[Sub #n]	Total
Consortium Management						
Topic Area 1						
Topic Area 2						
Topic Area 3						
Topic Area 4						
Topic Area 5						
Total						

Cost Share Summary and Letters of Support.

Provide a breakdown of cost share[11] (separating cash and in kind support) contribution to the project budget by entity and Topic Area in U.S. dollars for year 1 and years 1-5 in tabular form (following the template given below). Replace "Prime" with name of the primary (lead) entity and "Ent #1" through "Ent #n" with the name of other contributing entities, if applicable. Topic Areas should correspond to those given in Section I.C. Expand or contract the table as needed to add/subtract entities (columns). Note that for this FOA, submission of this budget file is **required**.

[11] Allowable in-kind contributions include but are not limited to personnel costs, indirect costs, facilities and administrative costs, rental value of buildings or equipment, and the value of a service, other resource, or third party in-kind contribution. The proposed budget needs to reflect actual costs whenever possible, meaning the applicant can show documentation proving that what they propose is what they will actually spend for every item. Applicants may use funding or property received from state or local governments to meet the cost share requirement, so long as the funding or property was not provided to the state or local government by the Federal Government.

Regarding in-kind contributions for personnel costs, there is a $200,000 salary cap. The proposed in-kind salary will be closely scrutinized. An individual cannot provide in-kind hours which (s)he is being paid by another entity (i.e. 40 hours a week cannot be contributed in kind if those same 40 hours were spent at another job). Only hours working directly on the award can be donated in-kind.

Because FFRDCs and GOGOs are funded by the Federal Government, costs incurred by FFRDCs and GOGOs generally may not be used to meet the cost share requirement.

Recipient Cost Share – Year 1									
	[Prime]		[Ent #1]		…	[Ent #n]		Total	
	Cash ($)	In Kind ($ equivalent)	Cash ($)	In Kind ($ equivalent)		Cash ($)	In Kind ($ equivalent)	Cash ($)	In Kind ($ equivalent)
Consortium Management									
Topic Area 1									
Topic Area 2									
Topic Area 3									
Topic Area 4									
Topic Area 5									
Total (Cash vs In Kind)									
Total									

Recipient Cost Share (Total) – Years 1-5									
	[Prime]		[Ent #1]		…	[Ent #n]		Total	
	Cash ($)	In Kind ($ equivalent)	Cash ($)	In Kind ($ equivalent)		Cash ($)	In Kind ($ equivalent)	Cash ($)	In Kind ($ equivalent)
Consortium Management									
Topic Area 1									
Topic Area 2									
Topic Area 3									
Topic Area 4									
Topic Area 5									
Total (Cash vs In Kind)									
Total									

Letters of support must be provided. Applications must include a letter of commitment from each entity contributing to cost share in the first year of the period of performance. Applications must include a letter of intended support from each entity contributing to cost sharing over the period of performance.

7. Optional: SF-LLL Disclosure of Lobbying Activities

If applicable, Applicant must complete the SF- LLL form in the Grant Application Package. 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, the Applicant must complete and submit Standard Form - LLL, "Disclosure Form to Report Lobbying."

8. Optional: Foreign Entity Waiver Request

If Applicant is submitting a foreign entity waiver (see Section III.A.3), save the waiver request(s) with the information specified in Section III.A.3 in a single PDF file titled “ForeignEntityWaiver”. Click on "Add Optional Other Attachment" to attach.

D. SUBMISSIONS FROM SUCCESSFUL APPLICANTS

If selected for award, DOE 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
- Commitment Letter from Third Parties Contributing to Cost Sharing, if applicable

E. SUBMISSION DATES AND TIMES

1. Pre-application Due Date

Pre-applications are not required.

2. Application Due Date

Applications should be received by May 4, 2015, not later than 11:59PM ET. Applicants are encouraged to transmit applications well before the deadline. APPLICATIONS RECEIVED AFTER THE DEADLINE WILL NOT BE REVIEWED OR CONSIDERED FOR AWARD.

F. INTERGOVERNMENTAL REVIEW

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

G. FUNDING RESTRICTIONS

Funding for all awards and future budget periods are contingent upon the availability of funds appropriated by Congress for the purpose of this program and the availability of future-year budget authority.

Cost Principles. Costs must be allowable, allocable, and reasonable in accordance with the applicable Federal cost principles referenced in 2 CFR part 200 as amended by 2 CFR part 910 (DOE Financial Assistance Regulation). The cost principles for commercial organization are in FAR Part 31.

Pre-award Costs. Recipients may charge to an award resulting from this announcement pre-award costs 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 in 2 CFR part 200 as amended by 2 CFR part 910 (DOE Financial Assistance Regulation). Recipients must obtain the prior approval of the contracting officer for any pre-award costs incurred outside of this 90 day calendar period.

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

APPLICATIONS MUST BE SUBMITTED THROUGH GRANTS.GOV TO BE CONSIDERED FOR AWARD.

Submit electronic applications through the "Apply for Grants" function at www.Grants.gov. If there are problems completing the registration process or submitting an application, call Grants.gov at 1-800-518-4726 or send an e-mail to support@grants.gov.

2. Registration Process

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 six weeks before the application due date. It may take 44 days or more to complete the entire process. See the Grants.gov web page for Registering as an Organization at

http://www.grants.gov/web/grants/applicants/organization-registration.html for guidance through the process. [IMPORTANT: During the SAM registration process, the Applicant will be asked to designate an E-Business Point of Contact (EBIZ POC). The EBIZ POC must obtain a special password called "Marketing Partner Identification Number" (MPIN). The EBIZ POC will need the MPIN to complete the Grants.gov registration process.] When the Applicant has completed the Grants.gov registration process, the next step is to call the Grants.gov Helpdesk at 1-800-518-4726 to verify that the final step has been completed.

3. Application Receipt Notices

After an application is submitted, the Authorized Organization Representative (AOR) will receive a series of four e-mails. It is important that the AOR watch for and save each of the e-mails. It may take up to two (2) business days from application submission to receipt of e-mail Number 2. The titles of the four e-mails are:

Number 1 - Grants.gov Submission Receipt Number
Number 2 - Grants.gov Submission Validation Receipt for Application Number
Number 3 - Grants.gov Grantor Agency Retrieval Receipt for Application Number
Number 4 - Grants.gov Agency Tracking Number Assignment for Application Number

Section V - APPLICATION REVIEW INFORMATION

A. CRITERIA

1. Initial Review Criteria

Prior to a comprehensive merit evaluation, DOE will perform an initial review to determine that (1) the applicant is eligible for an award; (2) the information required by the funding opportunity announcement has been submitted; and (3) the proposed project is responsive to the objectives of the funding opportunity announcement. Applications that fail to pass the initial review will not be forwarded for merit review and will be eliminated from further consideration.

2. Merit Review Criteria

Applications will be evaluated based on how the proposal addresses the following criteria, listed in descending order of importance. Note that these criteria will be evaluated relative to the objectives of the FOA.

SCIENTIFIC AND/OR TECHNICAL MERIT OF THE PROPOSED R&D

- What is the innovation of proposed R&D across all Topic Areas?
- How might the results of the proposed R&D impact the direction, progress, and thinking in relevant fields across all Topic Areas?
- Is the R&D fundamentally aligned, strongly supportive, and meritorious in context of the major objectives of this FOA?
- How does the proposed R&D compare with other R&D in its field, both in terms of scientific and/or technical merit and originality?
- Is the Intellectual Property (IP) Plan suitable for the proposed R&D and to what extent does it support the validation of research results?

APPROPRIATENESS OF THE PROPOSED R&D METHODS OR APPROACHES

- How logical and feasible are the R&D approaches?
- Does the proposed R&D employ innovative concepts or methods?
- Are the conceptual framework, methods, and analyses well justified, adequately developed, and likely to lead to scientifically valid conclusions?
- Does the applicant recognize significant potential problems and consider alternative strategies?
- Do the proposed activities identify and/or make progress on new concepts within the context of a collaborative or cooperative exchange in the Topic Areas of the FOA?

COMPETENCY OF APPLICANT'S PERSONNEL AND ADEQUACY OF PROPOSED RESOURCES

- What are the past performance and potential of the Consortium Director, Topic Leads, and other senior/key personnel?
- Has the leadership team had experience leading centers or consortia?
- What is the demonstrated experience of the proposed Consortium team in joint U.S.-China research?
- What is the appropriateness, rationale, and completeness of the proposed Statement of Project Objectives (SOPO)?
- How well qualified is the Consortium team to carry out the proposed work?
- Are the equipment and facilities adequate for performing project tasks?
- Are the proposed budget and staffing levels adequate to carry out the proposed tasks within the proposed period of performance?
- Is there demonstrated experience of the applicant in developing and implementing intellectual property plans in projects involving multiple parties, including international partners?

CONSORTIUM MANAGEMENT PLAN

- Is the consortium structure conducive to effective management?
- Does the plan adequately address effective coordination and communication between: (1) all project team members and other project participants, including technical, business, financial, permitting and other appropriate entities; (2) the project performers, the CERC Steering Committee and DOE; and (3) the project performers and external stakeholders?
- What is the extent to which the plan encourages collaboration between U.S. and Chinese institutions and U.S. and Chinese researchers?
- Is the intellectual property plan adequate and appropriate with respect to patents and data?
- Is the work organized into logical tasks and subtasks necessary to accomplish the CERC's objectives?

3. Program Policy Factors

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

- Potential to advance U.S.-China cooperation on clean energy;
- Alignment with DOE programmatic objectives in the energy-water nexus;
- Potential for bilateral collaboration beneficial to both countries;
- Potential for intellectual property creation with a path to commercialization;
- Quality of consortium partner contributions;
- Diversity of the research team in terms of knowledge, talent, and expertise as drawn from a broad spectrum of industry, academia, research, and business enterprises; and
- Application of U.S. Government funds to areas that would not be met with exclusively private cost-share or support.

B. REVIEW AND SELECTION PROCESS

1. Merit Review

Applications that pass the initial review will be subjected to a merit review in accordance with the guidance provided in the "Department of Energy Merit Review Guide for Financial Assistance." This guide is available at http://energy.gov/management/office-management/operational-management/financial-assistance under Financial Assistance Policy and Guidance.

2. Pre-Selection Interviews

As part of the merit review process, DOE may invite all Applicants to participate in Pre-Selection Interviews, conducted via webinar, videoconference, or conference call. These interviews give DOE the option to seek clarification on the contents of the application and otherwise ask questions regarding the proposed project. The information provided by Applicants through this process contributes to DOE's selection decisions.

3. Selection

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

4. Discussions and Award

The Government may enter into discussions with a selected applicant 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 Government needs additional information to determine that the recipient is capable of complying with the requirements in 2 CFR part 200 as amended by 2 CFR part 910 (DOE Financial Assistance Regulation); and/or (4) special terms and conditions are

required. Failure to resolve satisfactorily the issues identified by the Government will preclude award to the applicant.

C. ANTICIPATED NOTICE OF SELECTION AND AWARD DATES

DOE anticipates notifying the applicant selected for award by July 21, 2015, conducting award negotiations after this notification, and making the award in September 2015.

Section VI - AWARD ADMINISTRATION INFORMATION

A. AWARD NOTICES

1. Notice of Selection

DOE will notify the applicant selected for award negotiations. This notice of selection is not an authorization to begin performance. If an application is selected for award negotiations, it is not a commitment to issue an award. Applicants do not receive an award until award negotiations are complete and the Contracting Officer executes the funding agreement. (See Section IV.G with respect to the allowability of pre-award costs.)

Applicants that 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

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) 2 CFR part 200 as amended by 2 CFR part 910 (DOE Financial Assistance Regulation), or, for Federal Demonstration Partnership (FDP) institutions, the FDP terms and conditions; (5) National Policy Assurances To Be Incorporated As Award Terms; (6) Budget Summary; and (7) Federal Assistance Reporting Checklist, which identifies the reporting requirements.

B. ADMINISTRATIVE AND NATIONAL POLICY REQUIREMENTS

1. Administrative Requirements (December 2014)

The administrative requirements for DOE grants and cooperative agreements are contained in 2 CFR part 200 as amended by 2 CFR part 910 (DOE Financial Assistance Regulation) (see: http://www.eCFR.gov). For grants and cooperative agreements made to universities, non-profits, and other entities subject to Title 2 CFR, awards made under this funding opportunity will include the Government-wide Research Terms and Conditions. A new version of these Terms and Conditions based on the changes to 2 CFR 200 is not yet available. Once they become available, they will be located at
http://www.nsf.gov/bfa/dias/policy/rtc/index.jsp
If an award is made under this funding opportunity before the Terms and Conditions are posted, alternative Terms and Conditions may be included in the award.

DUNS and SAM Requirements

Additional administrative requirements for DOE grants and cooperative agreements are contained in 2 CFR part 25 (see: http://www.eCFR.gov). Prime awardees must keep their data at the System for Award Management (SAM) current at http://www.sam.gov. SAM is the Government-wide system that replaced the CCR. If the Applicant had an active registration in the CCR, the Applicant has an active registration in SAM. Subawardees at all tiers must obtain DUNS numbers and provide the DUNS to the prime awardee before the subaward can be issued.

Subaward and Executive Reporting

Additional administrative requirements necessary for DOE grants and cooperative agreements to comply with the Federal Funding and Transparency Act of 2006 (FFATA) are contained in 2 CFR part 170 (see: http://www.eCFR.gov). Prime awardees must register with the new FSRS database and report the required data on their first tier subawardees. Prime awardees must report the executive compensation for their own executives as part of their registration profile in the System for Award Management (SAM).

2. Special Terms and Conditions and National Policy Requirements (December 2014)

The DOE Special Terms and Conditions for Use in Most Grants and Cooperative Agreements are located at http://energy.gov/management/office-management/operational-management/financial-assistance/financial-assistance-forms under Award Terms.

The National Policy Assurances To Be Incorporated As Award Terms are located at http://energy.gov/management/office-management/operational-management/financial-assistance/financial-assistance-forms under Award Terms.

Intellectual Property Provisions. The standard DOE financial assistance intellectual property provisions applicable to the various types of recipients are located at: http://energy.gov/gc/standard-intellectual-property-ip-provisions-financial-assistance-awards. Please note that these Intellectual Property Provisions shall be subject to Intellectual Property provisions included in the International Agreement/Protocol between DOE and corresponding ministries of China, for Cooperation on a Clean Energy Center.

Lobbying Restrictions. By accepting funds under this award, the Applicant agrees that none of the funds obligated on the award shall be expended, directly or indirectly, to influence congressional action on any legislation or appropriation matters pending before Congress, other than to communicate to Members of Congress as described in 18 U.S.C. 1913. This restriction is in addition to those prescribed elsewhere in statute and regulation.

Corporate Felony Conviction and Federal Tax Liability Representations

In submitting an application in response to this FOA the Applicant represents that:

(1) It is not a corporation that has been convicted (or had an officer or agent of such corporation acting on behalf of the corporation convicted) of a felony criminal violation under any Federal law within the preceding 24 months,

(2) No officer or agent of the corporation have been convicted of a felony criminal violation for an offense arising out of actions for or on behalf of the corporation under Federal law in the past 24 months,

(3) It is not a corporation that has any unpaid Federal tax liability that has been assessed, for which all judicial and administrative remedies have been exhausted or have lapsed, and that is not being paid in a timely manner pursuant to an agreement with the authority responsible for collecting the tax liability.

For purposes of these representations the following definitions apply:
A Corporation includes any entity that has filed articles of incorporation in any of the 50 states, the District of Columbia, or the various territories of the United States [but not foreign corporations]. It includes both for-profit and non-profit organizations.

3. Statement of Substantial Involvement

There will be a substantial involvement between DOE and the Prime Recipient during the performance of a resultant cooperative agreement. The DOE CERC goals and objectives addressed by the project are of such importance that shared responsibility for the management, control, direction and performance of the project is needed to ensure goals and objectives are clearly defined, understood, and met. Additionally, because CERC arises from a high-level diplomatic initiative between the leaders of the U.S. and China, and the activities will be carried out in conjunction with Chinese collaborators, DOE has the right to intervene via the Consortium Director by providing strategic direction, developing mutually agreed upon joint criteria and common processes for carrying out bilateral research, setting priorities, requiring reports, and resolving intergovernmental issues. DOE does not limit its involvement to the administrative requirements of this Award.

In exercising substantial involvement, and in recognition that DOE's investment is one-fourth of the total investment by all parties in the bilateral initiative, DOE will weigh the interests of all substantial partners, including the U.S. contributing partners, the Chinese government, and the Chinese partners. Substantial involvement includes, but is not limited to, the following:

1. DOE shares responsibility with the Prime Recipient for the management, control, direction, and performance of work under this award.
2. DOE reviews and approves in a timely manner the joint work plan, project plans, and may recommend alternate approaches, if the plans do not address the critical programmatic issues.
3. DOE may participate in project management and R&D planning activities, including risk analysis, to ensure DOE requirements or limitations are considered in performance of the work elements.
4. DOE may intervene in the conduct or performance of work under this Award for programmatic reasons. Intervention includes the interruption or modification of the conduct or performance of project activities.
5. DOE promotes and facilitates awareness of research results, once properly protected, including presentations and publications.
6. DOE may redirect or discontinue funding projects that fail to fully and satisfactorily complete the work described in the Statement of Project Objectives as evaluated in periodic reviews.
7. DOE may participate in major project decision-making processes.

C. REPORTING

Reporting requirements are identified on the Federal Assistance Reporting Checklist, DOE F 4600.2, attached to the award agreement. The checklist is available at: http://energy.gov/management/office-management/operational-management/financial-assistance/financial-assistance-forms under Award Forms.

D. INTELLECTUAL PROPERTY DEVELOPED UNDER THIS PROGRAM

1. Patent Rights

Normally, in a grant or cooperative agreement and a contract for the operation of a national laboratory, the 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 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 will also require agreement 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. The patent clause that will apply these provisions can be found at http://energy.gov/sites/prod/files/gcprod/documents/patwaivclau.pdf.

Any award under this FOA will also be subject to the Protocol signed on November 17, 2009 and by Annex 1 to that Protocol, which specifically addresses Intellectual Property, the allocation of rights under this Protocol, and the treatment of business confidential information (Appendix A). That Protocol provides among other things, that any joint research project (a project with a specific scope of work jointly funded by China and the United States of America) to be undertaken in the performance of the award made under this FOA shall be subject to a Technology Management Plan agreed to by China and the USA, and further that no work shall be conducted until the Technology Management Plan has been fully agreed to. Jointly funded does not mean that money must be pooled but can mean that the respective parties have agreed upon a specific scope of work for a research project and have each contracted with their own domestic entities to perform an agreed upon part of that scope of work. Accordingly, for any such jointly-funded

project, rights normally acquired by an awardee or laboratory contractor under this FOA in subject inventions and technical data (intellectual property) will be subject to any disposition of right, title, or interest in or to intellectual property provided for in the Protocol, Annex 1 and Technology Management Plan. Each Technology Management Plan shall be entered into only after consultation between the DOE and the awardee or national laboratory contractor selected under this FOA. Consistent with the goals of the Clean Energy Research Center and in recognition of the contributions to be provided by the awardee or national laboratory contractor selected under this FOA, each Technology Management Plan shall seek to minimize any diminution of the intellectual property rights normally retained by an awardee or laboratory contractor. If a national laboratory contractor is selected under this FOA, the Patent Rights clause of the contract for the operation of the laboratory shall be amended to be subject to the International Agreement. The International Agreement also applies to a research project which includes a visiting researcher from China or the U.S. participating in a research project of the other country. An example Technology Management Plan is attached in Appendix B; further information regarding the Clean Energy Research Center's treatment of Intellectual Property may be found at: http://www.us-china-cerc.org/Intellectual_Property.html

2. Rights in Technical Data

It is anticipated that multiple types of technical data will be developed through the work of this consortium. Applicants should describe how they will determine which data would be eligible for special protected data rights and which data would be publicly accessible[12].

DOE normally retains unlimited rights in technical data first produced under the Agreement. Proprietary software or data developed solely at private expense will not normally be required to be delivered to the 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, (Item 4 under 2 C.F.R. 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.

[12] To be in compliance with the data policy of the U.S. Global Change Research Program of full and open access to global change research data, applications submitted in response to this FOA must include a clear description of the researcher's data sharing plans if the proposed research involves the acquisition of data in the course of the research that would be of use to the climate research and assessment communities.

Section VII - QUESTIONS/AGENCY CONTACTS

A. QUESTIONS

Questions regarding the content of the announcement must be submitted through the FedConnect portal. The Applicant must register with FedConnect to respond as an interested party to submit questions, and to view responses to questions. It is recommended that the Applicant register as soon after release of the FOA as possible to have the benefit of all responses. DOE will try to respond to a question within 3 business days, unless a similar question and answer have already been posted on the website.

Questions and comments concerning this FOA shall be submitted no later than 11:59PM ET on April 23, 2015. Questions submitted after that date may not allow the Government sufficient time to respond.

Questions relating to the registration process, system requirements, how an application form works, or the submittal process must be directed to Grants.gov at 1-800-518-4726 or support@grants.gov. DOE cannot answer these questions.

B. AGENCY CONTACT

Name: Robert Brown
E-mail: Robert.Brown@hq.doe.gov
Title: Contract Specialist

Subject line must start with “FOA-0001285”.

Section VIII - OTHER INFORMATION

A. MODIFICATIONS

Notices of any modifications to this announcement will be posted on Grants.gov and the FedConnect portal. The Applicant can receive an e-mail when a modification or an announcement message is posted by registering with FedConnect as an interested party for this FOA. It is recommended that the Applicant register as soon after release of the FOA as possible to ensure timely notice of any modifications or other announcements.

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.

Funding for all awards and future budget periods are contingent upon the availability of funds appropriated by Congress for the purpose of this program and the availability of future-year budget authority.

D. PROPRIETARY APPLICATION INFORMATION

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

"The data contained in pages [*Insert pages*] of this application have been submitted in confidence and contain trade secrets or proprietary information, and such data shall be used or disclosed only for evaluation purposes, provided that if this applicant receives an award as a result of or in connection with the submission of this application, DOE shall have the right to use or disclose the data 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 [*Insert name of applicant*] requests not be released to persons outside the Government, except for purposes of review and evaluation."

E. EVALUATION AND ADMINISTRATION BY NON-FEDERAL PERSONNEL

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

F. 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. See http://www.energy.gov/gc/services/technology-transfer-and-procurement/office-assistant-general-counsel-technology-transf-1 for further information. 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, as modified to accommodate the US-China Protocol of Nov 17, 2009, its Annex 1 "Intellectual Property", and the applicable Technology Management Plan. 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.

G. 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.

H. CONFERENCE SPENDING

The recipient shall not expend funds for the purpose of defraying the cost to the United States Government of a conference [described in subsection (c) of the Consolidated and Further Continuing Appropriations Act, 2013] that was more than $20,000, or circumventing the required notification by the head of any such Executive Branch department, agency, board, commission, or office to the Inspector General or senior ethics official for any entity without an Inspector General, of the date, location, and number of employees attending such conference that is not directly and programmatically related to the purpose for which the grant or cooperative agreement was awarded.

The Financial Assistance award will include the following clause regarding Conference Spending:

The awardee agrees that:

a) No cost associated with conference activities shall be allowable under this award unless the conference is directly and programmatically related to the purpose of the award, and the specific work authorization/order/task directing the conference activities.

b) The awardee shall follow the most current guidance issued by DOE concerning reporting of conference related activities and spending. The awardee shall request and obtain approval (if $100,000 or greater), and report all conference activities through the Conference Management Reporting and Approval Tool on the DOE iPortal at https://iportal.doe.gov.

(c) Once the awardee has received notification that approval (if net estimated DOE expenses exceed $100,000) or registration (if net DOE expenses are $100,000 or less) within the Conference Management Database has taken place, the awardee shall provide documentation to the Contracting Officer of the approval or registration. Notification of approval or registration consists of evidence of one of the following--

> (1) The Conference Management Database Approval Comments field reflects "Approved" if DOE expenses are equal to or exceed $100,000; or

(2) The Conference Management Database Event Status field is locked and the Approval Comments field reflects "Approval Not Needed at Current Estimates," if net DOE expenses will be $100,000 or less.

(d) Upon receipt of the evidence in (c) above, the Contracting Officer will provide approval for the awardee to begin incurring costs for the conference. Contracting Officer approval to begin incurring costs does not constitute a determination of allowability of the costs.

(e) The awardee and its employees as well as conference sponsors, hosts and attendees shall aggressively seek to limit costs associated with a conference. Conference expenditures shall be kept to the minimum necessary to carry out the Department's mission and must be consistent with applicable portions of the Federal Travel Regulation, and 48 CFR chapter 1, the Federal Acquisition Regulation.

(f) DOE will review proposed conference activities based on estimated cost and attendance to ensure federal funds are used for purposes that are appropriate, cost effective, and important to the core mission. However, only the Contracting Officer has authority to determine if the costs incurred by the awardee are allowable, allocable, and reasonable.

(g) The awardee shall establish sufficient management controls to ensure the costs related to conferences it invoices the Government for are allowable, allocable and reasonable.

(h) The awardee shall ensure its conference attendees conduct themselves with the highest level of professionalism and ethical behavior consistent with that expected of DOE employees.

Section IX - APPENDICES/REFERENCE MATERIAL

Appendix A	U.S.-China Clean Energy Research Center (CERC) Protocol
Appendix B	Example of a Technology Management Plan (TMP)
Appendix C	Example of Letter of Endorsement for the TMP
Appendix D	Procedures for Adding New Consortium Partners
Appendix E	List of Chinese Organizations

APPENDIX A – U.S.-CHINA CLEAN ENERGY RESEARCH CENTER (CERC) PROTOCOL

PROTOCOL

between

THE DEPARTMENT OF ENERGY OF

THE UNITED STATES OF AMERICA

and

THE MINISTRY OF SCIENCE AND TECHNOLOGY AND

THE NATIONAL ENERGY ADMINISTRATION OF

THE PEOPLE'S REPUBLIC OF CHINA

FOR COOPERATION ON A CLEAN ENERGY RESEARCH CENTER

The Department of Energy of the United States (USDOE), as a Party, and the Ministry of Science and Technology (MOST) and the National Energy Administration (NEA) of the People's Republic of China, as one Party, collectively herein the "Parties";

NOTING the Agreement between the Government of the United States of America and the Government of the People's Republic of China on Cooperation in Science and Technology signed January 31, 1979, as amended and extended (hereinafter "the S&T Agreement"); and the Joint Press Statement of the First Strategic and Economic Dialogue in July 2009;

NOTING the concurrence of the National Development and Reform Commission of the People's Republic of China (hereinafter "China") in the cooperative activities planned by the Parties;

NOTING the Protocol between the Department of Energy of the United States of America and the Ministry of Science and Technology of the People's Republic of China for Cooperation in the Field of Energy Efficiency and Renewable Energy Technology Development and Utilization of December 15, 2006 (hereinafter "Protocol I"), and the Protocol for Cooperation in the Field of Fossil Energy Technology Development and Utilization between the Department of Energy of the United States of America and the Ministry of Science and Technology of the People's Republic of China of April 20, 2000, as extended (hereinafter "Protocol II");

RECOGNIZING that climate change, clean and efficient energy, and environmental protection are among the greatest challenges facing the United States and China and that cooperation between the two countries is critical in addressing these issues;

SEEKING to support the implementation of the Memorandum of Understanding to Enhance Cooperation on Climate Change, Energy and Environment between the Government of the United States of America and the Government of the People's Republic of China of July 28, 2009 (hereinafter the "MOU");

CONSIDERING that science and technology have long been a cornerstone of cooperation between the United States and China, given their importance for economic and social development;

ACKNOWLEDGING that the United States and China share a responsibility to contribute to the world's future sustainability and prosperity by taking advantage of the abundant opportunities for cooperation between their two countries on clean energy technologies;

SHARING an interest in collaborating to advance clean energy technologies by building upon their ongoing scientific and technological cooperation in this area among research institutes, universities and companies;

CONSIDERING that their support to research activities on the basis of equality and reciprocity will provide mutual benefits to both Parties' countries; and

DESIRING to establish the U.S.-China Joint Clean Energy Research Center, that will accelerate development and more rapid deployment of critical technologies for renewable energy, energy efficiency, cleaner uses of coal, including carbon capture and storage, and other areas of clean energy that are needed to avoid the worst consequences of climate change, diversify energy supply and accelerate the transition to a low-carbon economy;

HAVE AGREED AS FOLLOWS:

I. Purpose

1. The Parties shall establish a U.S.-China Joint Clean Energy Research Center (hereinafter, "the Center") to facilitate joint research and development on clean energy by teams of scientists and engineers from the United States and China as well as serve as a clearinghouse to help researchers in each Party's country cooperate in mutually beneficial areas.
2. This Protocol is subject to and governed by the S&T Agreement.
3. This Protocol is intended to complement, and not duplicate, cooperation under Protocol I or Protocol II.
4. This Protocol is intended to support the objectives of the MOU, consistent with Section II, Part C of the MOU.

II. Areas of Cooperation

1. The initial priority research topics include: building energy efficiency; cleaner uses of coal, including carbon capture and storage; and clean vehicle technologies.
2. Other areas of collaboration may be added by the Parties' mutual consent in writing.

III. Principles

Cooperative activities shall be conducted on the basis of the following principles:

1. equality, mutual benefit, and reciprocity;
2. timely exchange of information relevant to cooperative activities;
3. effective protection of intellectual property rights;
4. peaceful, non-military uses of the results of collaborative activities; and
5. respect for the applicable legislation of each Party's country.

IV. Project Annexes

1. Cooperative activities under this Protocol may be undertaken by the Parties or, as appropriate, laboratories or contractors of the Parties. Each such cooperative activity that may involve the sharing of costs or that may give rise to intellectual property shall be set forth in a Project Annex, which shall be subject to the terms of this Protocol.
2. Each Project Annex shall include detailed provisions for conducting and managing the cooperation, and shall cover such matters as technical scope, work plan, staffing requirements, funding sources and budget, protection and allocation of intellectual property, exchange of proprietary information, and any undertakings, obligations or conditions necessary to the proposed activity.

V. Management

1. USDOE and MOST, NEA jointly establish the U.S.–China Steering Committee on Clean Energy Science and Technology Cooperation, chaired for the United States by the Secretary of USDOE, and for China by the Minister of MOST and the Administrator of NEA. The Joint Steering Committee consists of representatives of the Parties, and of other interested ministries, departments and agencies of each Party's country as jointly determined by the Parties. The Joint Steering Committee shall meet annually, or at such times as the co-chairs jointly agree, to provide high level review and guidance for the activities and the direction of the research

conducted under this Protocol.

2. A Joint High Level Advisory Panel (hereinafter the Joint Advisory Panel) of six eminent business and academic experts selected by the Joint Steering Committee from each Party's country shall be formed and supply the Center with suggestions and insights to ensure that issues of importance to the business and academic sectors on the state of, and needs for, clean energy research and development activities are brought to the attention of the Joint Steering Committee. The Joint Advisory Panel should meet annually and update its experts along with the changes in the priority areas described in paragraph 1 of Article II above, and shall be responsible for reaching out to the United States and Chinese clean energy science and technology communities for their suggestions and to encourage their participation in Center activities through an annual workshop or other appropriate means as the Joint Steering Committee shall decide.

3. The Parties shall monitor the activities conducted under this Protocol, and assess the progress of the Center.

4. The Parties shall each establish a secretariat that shall work closely together and act as the principal coordinators of communications and activities. The functions of the secretariats are to: (1) organize the meetings of the Joint Steering Committee and the Joint Advisory Panel; (2) help arrange special activities such as teleconferences and workshops; (3) act as clearinghouses for new activities; (4) maintain archival records for the Joint Steering Committee and the Joint Advisory Panel. The Parties may identify other functions to be performed by the secretariats, as appropriate.

5. Except as otherwise provided in Annex I (Intellectual Property Rights), any question concerning the interpretation or application of this Protocol shall be resolved by consultations between the Parties.

VI. Funding Mechanism

1. Subject to the availability of funds authorized and made available by each Party's government and subject to paragraph 2 of this Article, funding for the activities under

this Protocol shall be borne by the Parties, to help ensure the long-term and stable financial support to move the objectives of the Center forward. Private industry and academia also may provide funding for joint projects and activities in which they are participating.

2. USDOE shall fund only research performed by United States participants, and MOST and NEA shall fund only research performed by Chinese participants, in collaborative activities, unless agreed otherwise by the Parties for specific projects.

3. Each Party shall conduct the activities under this Protocol in accordance with applicable law to which it is subject.

VII. Information Sharing and Intellectual Property

1. The protection and allocation of intellectual property created or furnished under this Protocol is provided for in Annex I (Intellectual Property Rights), which is attached to and forms an integral part of this Protocol. The allocation of intellectual property rights shall be determined on a case-by-case basis, as appropriate, pursuant to Annex I.

2. Subject to the provisions of Annex I, each Party shall make available to the other, technical information first produced under projects under this Protocol that is (1) relevant to or necessary for projects under this Protocol; and (2) either in the Party's possession or available to it, and which it has the right to disclose.

VIII. Entry into Force, Extension, Amendment, and Termination

1. This Protocol shall enter into force upon signature by both Parties.

2. Subject to paragraph 4 of this Article, this Protocol shall remain in force for an initial period of ten years, and shall be automatically renewed for additional periods of five years, so long as the S&T Agreement remains in force.

3. This Protocol may be amended by mutual written agreement of the Parties.

4. This Protocol may be terminated by both Parties in writing at any time, or by either Party upon ninety days' written notice to the other Party. Notwithstanding the

previous sentence, activities approved by the Parties prior to termination shall remain in effect, and this Protocol shall continue to apply to them, until their originally intended date of completion and shall be funded accordingly.

DONE at Beijing, in triplicate, on the 17th day of November 2009, in the English and Chinese languages, both texts being equally authentic.

FOR THE DEPARTMENT OF ENERGY OF THE UNITED STATES OF AMERICA:

DR. STEVEN CHU

FOR THE MINISTRY OF SCIENCE AND TECHNOLOGY OF THE PEOPLE'S REPUBLIC OF CHINA:

DR. WAN GANG

FOR THE NATIONAL ENERGY ADMINISTRATION OF THE PEOPLE'S REPUBLIC OF CHINA:

MR. ZHANG GUOBAO

ANNEX I – INTELLECTUAL PROPERTY

The Parties shall ensure adequate and effective protection of intellectual property created or furnished under this Protocol and relevant implementing Project Annexes. Rights to such intellectual property shall be allocated as provided in this Annex. Subject to this Annex, the Parties shall support the widest dissemination of scientific information they generate in the execution of this Protocol.

I. SCOPE

A. This Annex is applicable to all cooperative activities undertaken pursuant to this Protocol, except as otherwise specifically agreed to by the Parties or their designees.

B. For purposes of this Protocol, "intellectual property" shall have the meaning found in Article 2 of the Convention Establishing the World Intellectual Property Organization, done at Stockholm, July 14, 1967, and may include other subject matter as agreed to by the Parties.

C. Each Party shall ensure, through contracts or other legal means with its own participants, if necessary, that the other Party can obtain the rights to intellectual property allocated in accordance with the Annex. This Annex does not otherwise alter or prejudice the allocation between a Party and the nationals of its country, which shall be determined by that Party's laws and practices.

D. Disputes concerning intellectual property arising under this Protocol shall be resolved through discussions between the concerned participating institutions or, if necessary, the Parties or their designees. Upon mutual agreement of the Parties, a dispute shall be submitted to an arbitral tribunal for binding arbitration in accordance with the applicable rules of international law. Unless the Parties or their designees agree otherwise in writing, the arbitration rules of the United Nations Commission on International Trade Law (UNCITRAL) shall govern.

E. Termination or expiration of this Protocol shall not affect rights or obligations under

this Annex.

F. The provision of any computer program, whether an application program or operating systems format and whether in source or object code, by one Party (the Providing Party) to the other Party (the Receiving Party) under this Protocol is contingent on the availability of copyright protection, and the execution of an appropriate license agreement, for that program in the territory of the Receiving Party that is generally equivalent to the protection to which it is entitled in the territory of the Providing Party.

II. ALLOCATION OF RIGHTS

A. Each Party shall be entitled to a non-exclusive, irrevocable, royalty-free license in all countries to translate, reproduce, and publicly distribute scientific and technical journal articles, reports, and books directly arising from cooperation under this Protocol. All publicly distributed copies of a copyrighted work prepared under this provision shall indicate the names of the authors of the work unless an author explicitly declines to be named.

B. Rights to all forms of intellectual property, other than those rights described in Section II.A. above, shall be allocated as follows:

1. Visiting researchers, for example, those not participating in a research project with a specific scope of work jointly funded by the Parties, shall receive intellectual property rights, awards, bonuses and royalties in accordance with the policies of the host institution.

2.(a) Any intellectual property created by persons employed or sponsored by one Party under cooperative activities other than those covered by paragraph II.B.1. shall be owned by that Party. Intellectual property created by persons employed or sponsored by both Parties under cooperative activities (involving a research project with a specific scope of work jointly funded by the Parties) shall be jointly owned by the Parties. In addition, each creator shall be entitled to awards, bonuses and royalties in accordance with the policies of the

institution employing or sponsoring that person.

(b) Unless otherwise agreed in a Project Annex, each Party shall have within its territory a right to exploit or allow others to exploit intellectual property created in the course of the cooperative activities.

(c) The rights of a Party outside its territory shall be determined by mutual agreement as described in paragraph II.B.2(d).

(d) The Parties or their participants shall jointly develop provisions of a Technology Management Plan regarding the exploitation of intellectual property rights as described in paragraph II.B.2.(b) and (c) and other than those covered by paragraph II.B.(1) of this Annex. The Technology Management Plan shall consider the relative contributions of the Parties to the particular jointly-funded research project, the benefits of licensing by territory, or for fields of use, and other factors deemed appropriate for the particular technology which is the subject matter of the jointly-funded research project.

(e) If the Parties cannot reach an agreement on a joint Technology Management Plan in the particular research project agreement, work on the particular research project shall not commence.

(f) Notwithstanding paragraphs II.B.2. (a-e) above, if a particular project has led to the creation of intellectual property protected by the laws of one Party but not the other, unless other allocation agreements are agreed upon by both Parties, the Party whose laws provide for this type of protection shall be entitled to all rights to exploit or license such intellectual property worldwide, although creators of intellectual property shall nonetheless be entitled to awards, bonuses and royalties as provided in paragraph II.B.2.(a).

(g) For each invention made under any cooperative activity, the Party employing or sponsoring the inventor(s) shall disclose the inventions promptly to the other Party, together with any documentation and information necessary to enable the other Party to establish any rights to which it may be entitled. Either Party may ask the other Party in writing to delay publication or public

disclosure of such documentation or information for the purpose of protecting its rights in the invention. Unless otherwise agreed in writing, the delay shall not exceed a period of six months from the date of disclosure by the inventing Party to the other Party.

III. BUSINESS-CONFIDENTIAL INFORMATION

In the event that information identified in a timely fashion as business-confidential is furnished or created under this Protocol, each Party and its participants shall protect such information in accordance with applicable, laws, regulations, and administrative practice, which may include execution of an appropriate agreement of confidentiality. Information may be identified as "business-confidential" if a person having the information may derive an economic benefit from it or may obtain a competitive advantage over those who do not have it, the information is not generally known or publicly available from other sources, and the owner has not previously made the information available without imposing in a timely manner an obligation to keep it confidential.

APPENDIX B – EXAMPLE OF A TECHNOLOGY MANAGEMENT PLAN (TMP)

TECHNOLOGY MANAGEMENT PLAN

(Regarding the exploitation of Intellectual Property Rights)

for the Clean Energy Research Center Advanced Coal Technology Consortium (ACTC)

中美清洁能源研究中心清洁煤技术联盟（ACTC）

关于知识产权利用的

技术管理计划

I. PREAMBLE

一、前言

1. The Chinese members of the ACTC (hereinafter, China ACTC) and the United States of America members of the ACTC (hereinafter, U.S. ACTC) agree to the following Technology Management Plan (TMP) regarding the exploitation of intellectual property rights pursuant to paragraph II.B.2.(d) of Annex I - Intellectual Property (hereinafter "IP Annex") of the Protocol for Cooperation on a Clean Energy Research Center (hereinafter "CERC Protocol"), signed on the 17th day of November, 2009, by the Department of Energy (DOE) of the United States of America, the Ministry of Science and Technology (MOST) and the National Energy Administration (NEA) of the People's Republic of China, (hereinafter "Signatories to the CERC Protocol").

1. 清洁煤技术联盟中方成员（以下简称“中方 ACTC”）和清洁煤技术联盟美方成员（以下简称“美方 ACTC”）根据美利坚合众国能源局（DOE），中华人民共和国科学技术部（MOST）和国家能源局（NEA）（以下简称“CERC 议定书缔约双方”），于 2009 年 11 月 17 日签署的关于中美清洁能源联合研究中心合作议定书（简称“CERC 议定书”）以及附件 I 知识产权（简称“IP 附件”）第二节第 2 条第 2 款第 4 项就以下技术管理计划（TMP）关于利用知识产权的条款达成共识。

2. This TMP is applicable to all CERC-ACTC Cooperative Activities undertaken pursuant to the CERC Protocol and its IP Annex, except as otherwise agreed to by the Signatories to the CERC Protocol or their respective designees in writing.

2. 本计划适用于根据 CERC 议定书以及 IP 附件开展的所有 CERC-ACTC 合作活动，但 CERC 议定书缔约双方或其书面指定的各自代表机构另有专门协议除外。

3. This TMP considers the exploitation of intellectual property rights as described in the CERC Protocol and paragraph II.B.2.(b) and (c) of IP Annex. The IP rights of visiting researchers set forth in paragraph II.B.(1) of the IP Annex are hereby superseded, notwithstanding paragraph II.B.(1). This TMP also considers the relative contributions of the Signatories to the CERC Protocol and their Participants to the particular Jointly-Funded Research Project, the benefits of licensing by territory, or for fields of use, and other factors deemed appropriate for the particular technology which is the subject matter of the Jointly-Funded Research Project.

3. 本计划考虑了在 CERC 议定书及 IP 附件第二节第 2 条第 2 款第 2 项和第 3 项所述的知识产权的利用问题。尽管有 IP 附件之第二节第 2 条第 1 款之规定，附件中第二节第 2 条对来访研究人员利用知识产权的规定在此被取代。本计划还考虑到 CERC 议定书缔约双方及其参与者对专项联合资助研究项目所做的相应贡献、根据区域或者根据应用领域授予许可的益处，以及被视为适合于作为联合资助研究项目主旨的特定技术的其它因素。

4. This TMP complements, supplements, and implements the IP Annex, considering intellectual property management and information sharing, and is subject to and governed by the CERC Protocol, its IP Annex and all CERC governing documents, including applicable contractual IP provisions of the Signatories to the CERC Protocol.

4. 本计划旨在完善、补充和贯彻 IP 附件中有关知识产权管理和信息共享等未尽事宜，并以遵守 CERC 议定书、其 IP 附件及所有 CERC 管理文件，包括有关 CERC 议定书缔约双方签署的知识产权合同的管辖。

5. The purpose of this TMP is to facilitate joint research and development on clean energy by teams of scientists and engineers from the United States and China by specifying intellectual property rights in greater detail than the Protocol's IP Annex; and encourage information sharing and technical communication in this project to the utmost degree between the Signatories to the CERC Protocol.

5. 本计划宗旨是通过促进中美双方科学家和工程师团队在清洁能源领域的联合研究和开发，在知识产权方面做出比议定书之 IP 附件更具体化的内容，并最大程度地鼓励 CERC 议定书缔约双方在该项目合作领域内的技术交流和信息共享。

6. The CHINA ACTC and U.S. ACTC have agreed that each Cooperative Activity shall be described in a work plan that includes:

(1) A Description of the Research Objective;

(2) Background and Technical Approach;

(3) Task Statements;

(4) Roles and Responsibilities of Leads, Performers, Partners and Other Participants;

(5) Equipment, Resources, Sites, Facilities, Materials to be Supplied;

(6) Work Schedule, with Interim Milestones (or Decision Points);

(7) Deliverables and Dates;

(8) Budgets, Funding or Estimated Costs (indicating Level of Effort, or Person-Hours Equivalents);

(9) Reporting Requirements (Interim Reports, Final); and

(10) Technical Management Plan (TMP)

This TMP satisfies point 10, thereof.

6. 中方 ACTC 和美方 ACTC 已经同意对于每一合作活动应在工作计划中予以说明，包括：

(1) 研究目标说明；

(2) 背景与技术方法；

(3) 任务说明；

(4) 牵头人、执行人、合伙人及其他参与者的职能和责任；

(5) 拟提供的设备、资源、场地、设施、材料；

(6) 工作时间表及期间的节点（或决定点）；

(7) 可交付成果及日期；

(8) 预算、资金或估算成本（包括人员投入水平或对应的工时）；

(9) 报告要求（期间的报告及最终报告）；及

(10) 技术管理计划（TMP）

本技术管理计划因此满足第（10）项的要求。

II. DEFINITIONS

二、定义

1. "Intellectual Property" shall have the meaning found in Article 2 of the Convention Establishing the World Intellectual Property Organization, Signed at Stockholm on July 14, 1967 and as amended on September 28, 1979, and may include other subject matter as agreed to by the Signatories to the CERC Protocol.

1. "知识产权" 应具有 1967 年 7 月 14 日在斯德哥尔摩缔结并于 1979 年 9 月 28 日修订的《建立世界知识产权组织公约》第二条所指含义，并可以包括 CERC 议定书缔约双方同意的其它标的。

2. "Background Intellectual Property," as used in this TMP, shall mean intellectual property created or invented outside the scope of the Joint Work Plan for Research on Clean Coal Including Carbon Capture and Storage (hereinafter ACTC Joint Work Plan), dated 18 January 2011.

2. 本计划中"背景知识产权"是指在 2011 年 1 月 18 日对清洁煤包括碳捕捉及储存的联合工作计划 (以下简称 ACTC 联合工作计划) 范围以外创造或发明的知识产权。

3. "Project Intellectual Property" shall mean Intellectual Property created or invented by a Participant in performance of work within the scope of the ACTC Joint Work Plan.

3. "项目知识产权"是指在 ACTC 联合工作计划范围之内从事工作的参与者创造或发明的知识产权。

4. "Cooperative Activities," as used in this TMP, shall mean any research and development work within the scope of the ACTC Joint Work Plan.

4. 本计划中"合作活动"是指 ACTC 共同工作计划范围之内的任何研究和开发工作。

5. "Jointly-Funded Research Project," as used in this TMP, shall mean Cooperative Activities whose scope of work/work plan involves Signatories to the CERC Protocol from BOTH countries providing collaborating research performers employed or sponsored by them and/or joint funding (including in-kind contributions) of such scope of work/work plan.

5. 本计划中"共同资助研究项目"是指其工作范围、工作计划涉及中美 CERC 议定书缔约双方及其雇佣或资助合作研究执行者，和/或共同为前述工作范围、工作计划出资（包括实物捐赠）的合作活动。

6. "Participant(s)," as used in this TMP, shall mean an entity or entities performing or providing funding or in-kind support for the performance of any of the research and development work in a particular Cooperative Activity, or administration thereof, within the scope of the ACTC Joint Work Plan agreed upon under the CERC Protocol, and includes, but is not limited to, contractor(s), subcontractor(s), awardee(s), sub-awardee(s), of MOST, NEA or DOE, or any other entity that provides significant funding or in-kind support as herein set forth.

6. 本计划中"参与者"是指执行下列事项或为执行下列事项提供资金或实物支持的主体：根据 CERC 议定书约定的 ACTC 共同工作计划范围内的专项"合作活动"中的任何研究和开发工作或上述工作的管理，而且还包括但不限于，MOST、NEA 或 DOE 的承包商、分包商、中标人、分中标人，或提供大量资金或实物支持的任何其他主体。

III. Ownership of Intellectual Property

三、知识产权的所有权

1. The owner(s) of Background Intellectual Property shall retain all right, title, and interest in their own Background Intellectual Property. The Signatories to the CERC Protocol have acknowledged that nothing herein shall be construed as requiring such an owner or owners to license, assign or otherwise transfer its Background Intellectual Property, and that any use of Background Intellectual Property authorized by its owner may require an appropriate license to such Background Intellectual Property.

1. 背景知识产权拥有者保留对其拥有的背景知识产权所享有的所有权利、所有权及利益。CERC 议定书缔约双方认为本文中的任何事项均不得解释为要求该权利拥有者许可、转让或以其他方式转移其所享有的背景知识产权，任何经权利享有者授权的背景知识产权的使用都可能要求获得合适的许可证 。

2. Inventorship of Project Intellectual Property will be determined in accordance with respective applicable patent, trademark and copyright law, and any applicable national or state laws and regulations regarding service inventions and confidentiality.

2. 项目知识产权的发明人身份须根据各自国家适用的专利法、商标法和版权法以及关于职务发明和保密的任何适用的全国性或州法律法规予以确定。

3. A Participant or Participants (and/or MOST, NEA or DOE, in accordance with the laws and practices of the territory of such ministry, agency or department) shall retain ownership, in all countries, of Project Intellectual Property created or invented by such Participant(s) (including the right to file a patent application).

3. 一个或多个参与者（和/或 MOST、NEA、DOE，依据其所在地域法律和惯例的相应部委、机构或部门）应当在世界各国保留对其（参与者）所创造或发明的知识产权的所有权（包括专利申请权）。

IV. Management of Intellectual Property and Information Sharing

四、知识产权管理和信息共享

1. Participants in Cooperative Activities may list all relevant intellectual property that they assert as Background IP for the purpose of seeking to distinguish Background Intellectual Property from Project Intellectual Property. Participants in a particular Jointly-Funded Research Project or Cooperative Activity, and contributors of Background Intellectual Property to that Project or Activity, may agree in writing to the scope and nature of the Background Intellectual Property.

1. 合作活动的参与者可列出其宣称为背景知识产权的所有相关知识产权，以便对背景知识产权和项目知识产权加以区分。专项共同资助研究项目或者合作活动的参与者及该项目或活动的背景知识产权提供者可以书面约定背景知识产权的范围和性质。

2. It is the intent of the China ACTC and U.S. ACTC to encourage sharing of data and other information related to the Project Work, both sides shall make regular publically available reports to the respective Signatories to the CERC Protocol (except for that which cannot be disclosed to the public in accordance with applicable national or other laws and regulations regarding secrecy, confidentiality or the need to preserve the novelty of an invention for purposes of patenting), generally describing research data produced, project progress and periodical achievement.

2. 中方 ACTC 和美方 ACTC 意在鼓励共享与项目工作有关的数据和其他信息，双方应定期向各自 CERC 议定书缔约方就项目所产生的研究数据、项目进度和阶段性成果进行概括性汇报并公开（依照各自国家法律法规及其他有关保密条例，以及为保护专利申请新颖性的需要不得公开的除外）。

3. Each, the China ACTC and U.S. ACTC, shall use its best efforts to make available to the other early access to technical reports resulting from such cooperative activities that are not "business-confidential", prior to such reports becoming publicly available.

3. 中方 ACTC 及美方 ACTC，每一方应尽力使对方能够在公众能够获知之前，尽早获得在上述合作活动中产生的、非属商业机密的技术报告。

4. For "Jointly-Funded Research Projects," subject to the provisions of the IP Annex, each Signatory to the CERC Protocol, and its Participant(s) as may be necessary, shall have access to, and a free right to use such Intellectual Property created or invented during this cooperative activity, for purposes of execution of the project/work plan for the particular Jointly-Funded Research Project.

4. 就"共同资助研究项目"而言，在遵守 IP 附件规定的前提下，CERC 议定书缔约双方及其参与者（如有必要）为执行专项共同资助研究项目/工作计划，应有权无偿使用此合作活动中创造或发明的知识产权。

5. As appropriate, a Participant may execute a mutually agreeable confidentiality agreement, to protect the confidentiality of Intellectual Property, other business-confidential information, or protected research data.

5. 参与者可视情况签署一份双方同意的，以对知识产权、其他商业机密信息或对研究数据保密的保密协议。

6. In accordance with paragraph III of the IP Annex, for greater clarity, and subject to the IP Annex and this TMP, the Signatories to the CERC Protocol (or their designees) and its Participants may enter into agreements with respect to their business-confidential information, including trade secrets or protected data that restricts access to such information to only certain of the Participants.

6. 根据 IP 附件第三节，为使之更加明晰，在遵守 IP 附件和本计划的前提下，CERC 议定书缔约双方（或其指定机构）及其参与者可就各自的商业机密信息，包括商业秘密或保密数据达成协议，以限定特定参与者接触此类机密信息。

7. Participants may, where appropriate, plan and apply for national and international technology standard on condition that the research results have already been patented.

7. 在研究成果已经获得专利权的前提下，参与者可视情况规划并申报国内和国际技术标准。

V. SHARING AND PROTECTION OF INTERESTS IN INTELLECTUAL PROPERTY RIGHTS

五、知识产权权益的共享与保护

1. Where the domestic law of the territory of each, China ACTC or U.S. ACTC, prohibits the use, disclosure or permitting of others to use or disclose intellectual property or any research data or other information, this TMP supports such law.

1. 如果中方 ACTC 或美方 ACTC 其中一方的国内法规定禁止使用、披露或者允许他人使用或披露知识产权或任何研究数据或其他信息，本计划予以支持。

2. The rights allocation described in this TMP related to the Project Intellectual Property are consistent with the principles of the CERC Protocol, IP Annex and all CERC governing documents.

2. 本计划中所述的有关项目知识产权的权利分配，依据 CERC 议定书、IP 附件及所有 CERC 管理文件中的原则进行。

3. Project Intellectual Property created or invented jointly by employees of and/or those sponsored by Signatories to the CERC Protocol from BOTH territories, shall be jointly owned by the respective Signatories to the CERC Protocol (or their Participant(s) in accordance with the laws and practices of the signatory's territory) and subject to each such owner having an undivided interest in the same.

3. 由中美两国 CERC 议定书缔约双方雇员和/或被资助的人员共同发明或创造的项目知识产权，需由各自 CERC 议定书缔约方（或遵守所在国相应法律和惯例的参与者）共同享有所有权，且以每一所有方对该知识产权享有不可分割的权益为前提。

4. For "Jointly-Funded Research Projects," unless otherwise agreed by the China ACTC and the U.S. ACTC—

4. 就“共同资助研究项目”而言，除非中方 ACTC 及美方 ACTC 另有约定—

4.1 An owner or owners from one territory, of Project Intellectual Property arising from such a project (and where necessary, Signatories to the CERC Protocol with an interest in such intellectual property) shall agree to negotiate in good faith terms of a nonexclusive license, to the other territory's Participants in such particular "Jointly-Funded Research Project", to make, have made, use, sell or otherwise practice such intellectual property. Such licenses shall be subject to negotiation on favorable terms agreeable to the entities that have ownership of such Intellectual Property.

4.1 产生于“共同资助研究项目”的项目知识产权的一国所有权人（并在必要时，对该知识产权享有某种利益的 CERC 议定书缔约方）应同意基于诚信条款来谈判一项普通许可协议，许可另一国的参与者在该项“共同资助研究项目”中制作、委托制作、使用、出售或以其他方式实施该知识产权。此类许可应以对拥有该知识产权的主体有利和可接受的条款为前提。

4.2 The China ACTC and U.S. ACTC hereby agree that any licenses to "Jointly-Funded Research Project" Project Intellectual Property granted to third-parties that are not Participants in the particular "Jointly-Funded Research Project", shall be non-exclusive and based upon fairly negotiated arms-length commercial terms and compensation which contemplate the commercial benefits of the technology and the investment in the development of the technology, the benefits of licensing by territory, or for fields of use, and other factors deemed appropriate for the particular technology which is the subject of the "Jointly-Funded Research Project." Unless otherwise required by law (or, consistent with applicable law, otherwise agreed by the owners of the particular Project Intellectual Property), an owner of "Jointly Funded Research Project" Project Intellectual Property shall have no obligation of accounting to the co-owners of such Project Intellectual Property or to the Signatories of the CERC Protocol for any such arms-length licenses to third parties.

4.2 中方 ACTC 和美方 ACTC 特此同意，授予第三方（指在专项“共同资助研究项目”中的非参与者）的“共同资助研究项目”项目知识产权的任何许可应是普通许可，且建立在公平协商的公平商业条款和补偿的基础上，上述条款和补偿应考虑下列因素：技术的商业利益及技术研发投入、根据领土或者根据应用领域授予许可的收益，以及其它被视为适合特定技术的因素，特定技术是联合资助研究项目的主旨。除非法律另有规定（或者，根据相关法律项目知识产权所有权人另有约定），“共同资助研究项目”的项目知识产权一方所有权人无义务就该项授予第三方的公平许可向其他共有所有权人，或 CERC 议定书缔约方做出说明。

5. For "Cooperative Activities" that do not include a "Jointly-Funded Research Project", unless otherwise agreed by the China ACTC and the U.S. ACTC—

5. 对于不包括“共同资助研究项目”的“合作活动”而言，除非中方 ACTC 及美方 ACTC 另有约定——

5.1 An owner or owners from one territory, of Project Intellectual Property arising from such a project (and where necessary, Signatories to the CERC Protocol with an interest in such intellectual property) shall agree to negotiate in good faith terms of a nonexclusive license to the other territory's ACTC Participants, for any invention made under such activities that is not a trade secret, for research and development purposes only.

5.1 产生于一个项目的项目知识产权的一国所有权人（并在必要时，对该知识产权享有某种利益的 CERC 议定书缔约方）应同意基于诚信条款就在该等活动中创造的不属于商业机密的任何发明对另一国的 ACTC 参与者，来谈判一项仅可用于研究开发目的普通许可。

5.2 The China ACTC and U.S. ACTC hereby agree that any licenses granted by an owner or owners of Project Intellectual Property to third parties that are not Participants in "Cooperative

Activities" shall be nonexclusive and based upon fairly negotiated arms-length commercial terms and compensation which contemplate the commercial benefits of the technology and the investment in the development of the technology, the benefits of licensing by territory, or for fields of use, and other factors deemed appropriate for the particular technology which is the subject of the "Cooperative Activity."

5.2 中方 ACTC 和美方 ACTC 特此同意，拥有项目知识产权的所有权人授予第三方（非"合作活动"参与者）的任何许可应是普通许可，且建立在公平协商的公平商业条款和补偿之上，上述条款和补偿应考虑下列因素：技术的商业利益及技术研发投入、根据领土或者根据应用领域授予许可的收益，以及其它被视为适合特定技术的因素，特定技术是联合资助研究项目的主旨。

6. Subject to the IP Annex, this TMP, and any terms and conditions of MOST, NEA or DOE's allocation with its Participants in accordance with the laws and practices of such Participant's territory, intellectual property rights allocations relating to Cooperative Activities may be established by Participants (or MOST, NEA or DOE, in accordance with the laws and practices of the territory of such ministry, agency or department) in sub-agreements, Project Annexes, or separate agreements among Participants engaged in such Cooperative Activities.

6. 在遵守 IP 附件、本计划以及依据所在国的法律惯例 MOST, NEA 或 DOE 与参与者之间的有关分配的任何条款的前提下，涉及合作活动的知识产权分配，可由参与者（或 MOST, NEA 或 DOE，及依据其所在地域法律和惯例的相应部委、机构或部门）在相关补充协议、项目附件或参与该等合作活动的参与者另行订立的协议中加以规定。

VI. Dispute Resolution

六、争议解决

1. Disputes concerning intellectual property arising under this Protocol shall be resolved through discussions between the affected Signatories to the CERC Protocol and/or Participants or, if such signatories or Participants are unable to resolve the dispute through such discussions, upon mutual agreement of the Signatories to the CERC Protocol or their designees, a dispute shall be submitted to an arbitral tribunal agreed by the Signatories or Participants for binding arbitration in accordance with the applicable rules of international law. Unless the Signatories to the CERC Protocol or their designees agree otherwise in writing, the arbitration rules of the United Nations Commission on International Trade Law (UNCITRAL) shall govern.

1. 本计划下所产生的知识产权争议应当由受影响的 CERC 议定书缔约双方和/或参与者通过协商解决，如果上述缔约方或参与者无法通过协商解决争议，应将争议提交经 CERE 议定书缔约双方或其指定机构同意的仲裁庭根据适用的国际法规则进行有约束力的仲裁。除 CERC 议定书双方或者其指定机构另有书面协议外，仲裁适用联合国国际贸易法委员会仲裁规则。

2. DONE at _____, in triplicate, on the _____day of _____, in the English and Chinese language, both texts being equally authentic. Except as otherwise provided in the CERC Protocol and the IP Annex, any questions concerning the interpretation or application of this Technology

Management Plan shall be resolved by consultation between the China ACTC and the U.S. ACTC and the respective Signatories to the CERC Protocol.

2. 本技术管理计划于_____年_____月_____日在_____签署，一式叁份，每份均用中文和英文写成，两种文本具有同等效力。除非 CERC 议定书和 IP 附件另有规定，任何有关本计划之解释或应用的问题应当由中方 ACTC、美方 ACTC 及双方各自的 CERC 议定书缔约方协商解决。

For the U.S. ACTC

美方 ACTC 代表

Prof. Dr. Jerald J. Fletcher

Jerald J. Fletcher 博士（教授）

For the CHINA ACTC

中方 ACTC 代表

Prof. Dr. ZHENG Chuguang

郑楚光博士（教授）

APPENDIX C – EXAMPLE OF LETTER OF ENDORSEMENT FOR THE TMP

Agreement
on
The Technology Management Plan
(regarding the exploitation of Intellectual Property Rights)
for the US-China Clean Energy Research Center Advanced Coal Technology Consortium

The Department of Energy of the United States, as a Party (DOE) , and the Ministry of Science and Technology (MOST) and the National Energy Administration (NEA) of the People's Republic of China, as one Party, collectively herein the "Parties", have agreed to a "Protocol", dated November 17, 2009, for Cooperation on a Clean Energy Research Center (CERC). The CERC Protocol provides for the establishment of a Secretariat in each country for performance of various functions. Pursuant to Article V of the CERC Protocol, the Secretariats are officials of each of the respective governments.

Implementing the CERC Protocol, the United States selected West Virginia University (WVU) and China selected Huazhong University of Science and Technology (HUST) to organize and lead teams of experts from public and private institutions to develop and carry out a five-year Joint Work Plan to advance technology in the area of clean coal, including carbon capture, utilization, and storage, in both countries. These teams are designated as the China Advanced Coal Technology Consortium (ACTC) and the U.S. ACTC. Leaders of the China ACTC and U.S. ACTC signed a Joint Work Plan on January 18, 2011.

Members of the China ACTC and U.S. ACTC have since participated in joint development of, and their leaders have agreed to, a Technology Management Plan (TMP), regarding the exploitation of intellectual property rights pursuant to paragraph II.B.2.(d) of Annex I - Intellectual Property (hereinafter "IP Annex") of the CERC Protocol. The TMP, jointly signed on August 19, 2011, is applicable to all Clean Coal Cooperative Activities undertaken pursuant to the CERC Protocol and its IP Annex, except as otherwise may be agreed to by the Parties to the CERC Protocol or their respective designees in writing.

Pursuant to Article VII of the CERC Protocol, and its IP Annex, the respective Secretariats of the Parties, on behalf of the Parties, hereby agree to and endorse the Technology Management Plan for the CERC Advanced Coal Technology Consortium.

For the government of the United States:

Date: SEP 23 2011

For the government of the People's Republic of China:

Date: SEP 23 2011

APPENDIX D – PROCEDURES FOR ADDING NEW CONSORTIUM PARTNERS

March 27, 2013

PROCEDURES FOR ADDING NEW MEMBERS TO CONSORTIA FOR THE CLEAN ENERGY RESEARCH CENTER

Business, industrial, and non-governmental entities that have been contributing to and collaborating with research-performing organizations operating under the auspices of the U.S.-China Clean Energy Research Center (CERC) are seeing results and accruing benefits from CERC participation.[13] As a consequence of these early successes, other research institutions and businesses in both countries have expressed interest in joining CERC consortia as new members and participating in CERC cooperative activities.

The Department of Energy of the United States of America, and the Ministry of Science and Technology and the National Energy Administration of the People's Republic of China, have reached the following understanding:

1. In general, enhanced engagement by business, industrial, and non-governmental entities in CERC cooperative activities, through greater participation and by adding new consortia members, is encouraged. A new CERC consortium member is expected to:

(a) support the mission of the CERC, as established by the Protocol, and the vision and goals of its respective CERC consortium, as established by the consortium director;

(b) add value to the CERC's capacities and work program, evidenced in part by contributions of an intellectual, technical, financial, and/or in-kind nature;

(c) support projects that meet CERC criteria;[14]

(d) agree in writing to be bound by the same obligations of an existing consortium's members; and

(e) agree in writing to adhere to the provisions of the Protocol and the associated Technology Management Plans governing the protection and allocation of intellectual property arising from CERC cooperative activities.[15]

[13] The U.S.-China Clean Energy Research Center is a bilateral research initiative to encourage R&D collaboration and accelerate advanced technology development and deployment in both countries. It is organized by the two governments under a Protocol, signed on November 17, 2009. Participating agencies are for the PRC the Ministry of Science and Technology, the National Energy Administration, and the Ministry of Housing Urban and Rural Development and for the U.S. the Department of Energy.

[14] Criteria for funding CERC research projects include: (a) scientific and technical merit; (b) relevance to larger thematic objectives; (c) quality of the research team, including its leaders, key research personnel and supporting resources, equipment, and facilities; (d) expected benefits for both countries (not just one country); (e) emphasis on science, technology and innovation, with potential for new intellectual property; (f) path to commercialization of resulting knowledge or technology; and (g) evidence of joint planning and US-China research collaboration.

[15] Protocol and Technology Management Plans may be found at: http://www.us-china-cerc.org.

2. In order to assure that new consortium members adhere to the CERC mission and meet the standards set by the Protocol's signatories, the following procedures are to apply to the addition of new consortium members:

(a) An interested entity and prospective member should submit a formal request to join a U.S. or China CERC consortium to that country's consortium director.

(b) The request should provide a description of the entity and any other relevant information (e.g., a brief description of projects it is interested in undertaking in the CERC, potential project partnerships with existing consortium members, and the nature of the contribution(s), of the type stated in paragraph 1(b) above, it may be willing to make to the CERC.

(c) A request should include a letter signed by an authorized official of the applying entity stating the applicant's commitment to be bound by the Technology Management Plan for the relevant consortium.

(d) Upon receipt of the request, and after consultation with other consortium members, the CERC consortium director receiving the request is to consult with the other country's consortium's director.

(e) After such consultation and consideration of views, the consortium director, alone, shall determine whether the request conforms to the requirements above and membership be granted.

(f) If granted, the consortium director shall inform the CERC Secretariat.

3. Each country's consortium director shall maintain a current list of its consortium members and communicate any changes to the CERC Secretariat in a timely manner.

APPENDIX E – LIST OF CHINESE ORGANIZATIONS

The table below provides a partial list of entities in China identified by DOE that are known to have knowledge and expertise in water-related aspects of energy production and use. An applicant may contact one or more of these entities, or any others in China, with the understanding that no commitments have been made by Chinese authorities to support or fund these or other Chinese entities under the anticipated bilateral collaboration. Decisions in China about funding in this regard are expected to be considered later and made independently by Chinese authorities, most likely at a time in the future after a U.S. consortium has been formed.

1	China Institute of Water Resources and Hydropower Research (IWHR)	中国水利水电科学研究院
2	Institute of Seawater Desalination and Multipurpose Utilization (Tianjin), State Oceanic Administration (SOA)	国家海洋局天津海水淡化与综合利用研究所
3	China Electricity Council (CEC)	中国电力企业联合会
4	Shenhua Group Corporation Limited	神华集团
5	The Membrane Industry Association of China	中国膜工业协会
6	Shaanxi Yanchang Petroleum (Group) Corp. Ltd.	陕西延长石油(集团)有限责任公司
7	China National Offshore Oil Corporation (CNOOC)	中国海洋石油总公司
8	The Research Institute of Petroleum Exploration and Development (RIPED)	中石油勘测开发研究院
9	China National Petroleum Corporation (CNPC)	中国石油安全环保技术研究院
10	Guodian New Energy Technology Research Institute Beijing	国电新能源技术研究院
11	Research Center for Eco-Environmental Sciences (RCEES), Chinese Academy of Sciences (CAS)	中科院生态环境研究中心
12	National Climate Center, China Meteorological Administration (CMA)	中国气象局国家气候中心
13	Beijing Normal University (BNU)	北京师范大学
14	Tsinghua University	清华大学
15	Wuhan University	武汉大学
16	Research Center for Energy and Power, Chinese Academy of Sciences (CAS)	中科院能源动力研究中心

17	China Yixing Industrial Park for Environmental Science and Technology	宜兴环科园
18	China Three Gorges Corporation (CTG)	三峡集团
19	China University of Mining and Technology	中国矿业大学