

**FINANCIAL ASSISTANCE
FUNDING OPPORTUNITY ANNOUNCEMENT**



**U.S. Department of Energy
Golden Field Office**

**Geothermal Energy Production from: (A) Low-Temperature Resources;
(B) Coproduced Fluids; and (C) Geopressured Resources**

Funding Opportunity Announcement Number: DE-FOA-0000318

Announcement Type: Amendment 001

CFDA Number: 81.087

Original Issue Date: 05/12/2010

Amendment 001 Issue Date: 06/02/2010

Application Due Date: 07/09/2010, 11:59 P.M. Eastern Time

DATE: 06/02/2010

FROM: Genevieve Wozniak, Contracting Officer

TO: All Prospective Applicants

SUBJECT: Amendment No. 001 to Funding Opportunity Announcement (FOA)
No. DE-FOA-0000318, "Geothermal Energy Production from: (A) Low-
Temperature Resources; (B) Coproduced Fluids; and (C) Geopressured Resources

The Announcement is amended as follows:

- I. Section III, A: Definition of Eligible Applicant is updated.
- II. Section IV, B.1: Notice of Intent is requested from all interested applicants by June 22.

All changes to the FOA are highlighted below in yellow.

All other parts of the FOA remain unchanged.

REGISTRATION AND APPLICATION SUBMISSION REQUIREMENTS

Registration Requirements: Allow at least 21 days to complete registrations.

To submit an application under this announcement, complete the following registrations:

1. Obtain a Dun and Bradstreet Data Universal Numbering System (DUNS) number, at <http://fedgov.dnb.com/webform>.
2. Register in the Central Contractor Registration (CCR) system, at <https://www.ccr.gov/>. Designating an E-Business Point of Contact (EBiz POC) and obtaining a special password called an MPIN are important steps in CCR registration. These items are needed to submit applications in Grants.gov. Update your CCR registration annually.
3. Register in Grants.gov at <http://www.grants.gov/>. See the Organization Registration User Guide at <http://www.grants.gov/assets/OrgRegUserGuide.pdf>. The Applicant User Guide is at <http://www07.grants.gov/assets/ApplicantUserGuide.pdf>.
4. Register in FedConnect at <https://www.fedconnect.net/>; use “Register as a Vendor” link. To create an organization account, your organization’s CCR MPIN is required.

Where to Download the Application Package:

Download the Application Package for this announcement at <http://www.grants.gov/>. Click on the “Apply for Grants” link; then, click on the “Download a Grant Application Package” link and follow the instructions. Insert the announcement number to download the Application Package.

Where to Submit the Application Package:

APPLICATIONS MUST BE SUBMITTED THROUGH GRANTS.GOV TO BE CONSIDERED FOR AWARD. Follow instructions in the User’s Guide for application submissions. Applicants are responsible for verifying successful transmission, prior to the Application due date and time.

Where to Ask Questions About the Funding Opportunity Announcement Content:

To ask questions about the Funding Opportunity Announcement, use FedConnect at <https://www.fedconnect.net/>. You must be a registered user in the system and submit questions by sending messages in your FedConnect email box. Part VII of this announcement explains how to submit questions to the Department of Energy (DOE).

Where to Submit Questions About the Registrations or Systems:

DUNS & Bradstreet: govt@dnb.com

Central Contractor Registration (CCR) system: <https://www.bpn.gov/ccr/contactccr.aspx>
By phone: 866-606-8220 or 334-206-7828 (8:00 A.M. to 8:00 P.M., Eastern Time)

Grants.gov: support@grants.gov
By phone: 1-800-518-4726 (24 hours a day, 7 days a week except on federal holidays)

FedConnect: support@FedConnect.net
By phone: 1-800-899-6665 (8:00 A.M. to 8:00 P.M., Eastern Time)

Table of Contents

<u>Number</u>	<u>Subject</u>	<u>Page</u>
SECTION I – FUNDING OPPORTUNITY DESCRIPTION		
		6
SECTION II – AWARD INFORMATION		
		9
A.	Type of Award Instrument.....	9
B.	Estimated Funding	9
C.	Maximum and Minimum Award Size.....	9
D.	Expected Number of Awards	10
E.	Anticipated Award Size	10
F.	Period of Performance	10
G.	Type of Application	10
SECTION III - ELIGIBILITY INFORMATION		
		10
A.	Eligible Applicants	10
B.	Cost Sharing.....	10
C.	FFRDC Eligibility Requirements	11
SECTION IV – APPLICATION AND SUBMISSION INFORMATION.....		
		12
A.	Address to Request Application Forms.....	12
B.	Notice of Intent and Pre-Application.....	12
C.	Content and Form of Application.....	12
D.	Submissions from Successful Applicants	19
E.	Submission Dates and Times	19
F.	Intergovernmental Review.....	20
G.	Funding Restrictions.....	20
H.	Submission and Registration Requirements	20
SECTION V - APPLICATION REVIEW INFORMATION		
		21
A.	Criteria.....	21
B.	Review and Selection Process.....	23
C.	Anticipated Notice of Selection and Award Dates.....	23
SECTION VI - AWARD ADMINISTRATION INFORMATION		
		23
A.	Award Notices	23
B.	Administrative and National Policy Requirements.....	24
C.	Reporting	25
SECTION VII - QUESTIONS/AGENCY CONTACTS		
		25
A.	Questions.....	25
B.	Agency Contacts	25
SECTION VIII - OTHER INFORMATION.....		
		25
A.	Modifications	25
B.	Government Right to Reject or Negotiate.....	26
C.	Commitment of Public Funds	26
D.	Proprietary Application Information.....	26
E.	Evaluation and Administration by Non-Federal Personnel	26
F.	Intellectual Property Developed under this Program	26
G.	Notice of Right to Request Patent Waiver	27

H. Notice Regarding Eligible/Ineligible Activities.....	27
I. Notice of Right to Conduct a Review of Financial Capability.....	28
J. Notice of Potential Disclosure under Freedom of Information Act.....	28
Appendix A – Definitions	29
Appendix B – Personally Identifiable Information.....	33
Appendix C – Cost Share Information	35
Appendix D – Budget Justification.....	41

SECTION I – FUNDING OPPORTUNITY DESCRIPTION

DESCRIPTION

The U.S. Department of Energy's (DOE) Geothermal Technologies Program (GTP) intends to expand its partnership with the geothermal community on geothermal systems research, demonstration, and development (RD&D) throughout the United States. This three-topic FOA will focus on areas associated with geothermal energy as outlined in the Energy Policy Act (EPAc) of 2005, section 931(a)(2)(C). GTP's goal is to demonstrate the technical and economic feasibility of geothermal energy production through innovative methods. GTP hopes to achieve this objective through promotion of the development and commercial application of energy production from non-conventional geothermal resources in the following Topic Areas:

- A. Low-Temperature Geothermal Fluids at temperatures up to 300° Fahrenheit (F) or approximately 150° Celsius (C)
- B. Geothermal Fluids Coproduced from productive, unproductive, or marginal oil and/or gas wells; other hydrocarbon production; or mineral recovery/mining operations
- C. Geopressured Resources that show potential for economic recovery of heat, kinetic energy, and gas

The intent of this FOA is to evaluate the feasibility of and demonstrate energy production (technically and economically) from nonconventional geothermal resources in an innovative manner. **For the purposes of this FOA, energy production is defined as converting the thermal potential contained within geothermal fluids into electricity. Only projects that generate electricity from the heat contained within geothermal fluids will be considered; but projects that also use the chemical or kinetic energy of the fluids, or have additional direct use applications for the geothermal fluids will also be considered.** Innovation may include but is not limited to: innovative cooling systems (e.g., air, water, or hybrid systems), use of innovative working fluids, use of more efficient heat exchanger materials, and/or maximization of energy utilization via combination of electricity generation and direct technologies.

Use of existing wells or the drilling of new exploratory, production, or injection wells may be included in proposed projects. **DOE funds may be applied towards Intangible Drilling Costs (IDCs) proposed during drilling or rework of wells in Phase 2 ONLY.** IDCs that are eligible for DOE funding are defined as costs for items or services that are necessary to drill wells but do not become part of the well/wellhead after drilling is complete, e.g., site preparation costs, rig transport, rig operations (day rates, etc.), drilling fluids, formation evaluation, completion tools, perforating, site supervision services, fuel, logging, and drill bits. Tangible drilling costs are defined as costs for items that do become part of the final well/wellhead after drilling is complete (e.g., well casing [surface, intermediate, production, and tubing] and well equipment [packers, wellhead, production trees]), and these costs are not eligible for DOE funding. **For Topic Areas A (Low-Temperature Geothermal Fluids) and B (Coproducted Geothermal Fluids) the maximum level of DOE funds that can be applied towards IDCs for the drilling or rework of wells is \$1.0 M. For Topic Area C (Geopressured Resources), the maximum level of DOE funds that can be applied towards IDCs for the drilling or rework of wells is \$2.5 M. Recipient cost share funds may be applied towards drilling costs (tangible or intangible) in any amount.** It is NOT the intent of this FOA to seek RD&D for geothermal heat pumps, and therefore this FOA will not fund drilling of geothermal heat pump bore holes. **Any costs incurred prior to selection for negotiation of award (such as well drilling, collection of rock/core cuttings, well-field development or power plant construction) are not allowable project costs (full or partial). This**

applies to both DOE funding and recipient cost share.

Projects will be funded under this FOA for Phase 1 only (please see phase descriptions below).

However, applications for this FOA should include detailed scope and budget information for all phases of the proposed project. **A competitive down-selection process, in which award progress will be reviewed and rated accordingly by DOE, will occur upon completion of Phase 1 activities.**

Therefore, budget information by phase as well as cumulative figures must be provided within the application.

Proof of financial viability including an Income Statement, Balance Sheet, and Operating Cash Flow Statement should be included with applications as detailed in Part IV.C, the “Content and Form of Application” section of this FOA.

Projects for all Topic Areas should be composed of the following three phases. Phase 1 should be completed prior to the competitive project review scheduled for July 2011.

Phase 1 – Feasibility Study and Engineering Design and Permitting

The objectives of Phase 1 include the following:

Complete a feasibility study to ensure that electricity can be produced economically at the site, fully design/engineer the equipment necessary for energy production, and characterize the target geothermal resource via a geological model. Feasibility studies should incorporate a comprehensive economic analysis including factors such as: capital and operating costs, cost/benefit analysis, payback period, installed cost per MWe, Levelized Cost of Energy (LCOE), Return on Investment (ROI), avoided cost of electricity, quantification of overall climate change benefits of the project, etc.

Engineering design should include: process unit design/costing; creation of a bill of materials; necessary and appropriate site engineering studies; and analysis regarding innovation via design or new technology or adaptation of existing technology for site specific circumstances or conditions.

Resource characterization should include an estimate of the capacity of the geothermal/geopressured resource in MWe and full development of a structural and reservoir based geothermal model.

Regulatory and environmental permitting should be completed prior to the end of Phase 1. For Topic Area C (Geopressured Resources) projects, proposed facilities should show potential for the economic recovery of heat, kinetic energy, and gas resources.

A go/no-go decision point should be included in all projects at the end of Phase 1. DOE will competitively select a subset of Phase I projects, based on a Phase I progress review, for potential Phase 2 and 3 funding.

Phase 2 – Procurement, Installation, and Commissioning of Equipment

The objectives of Phase 2 are to procure, install, and commission the equipment necessary to harness geothermal energy to produce electricity and to report data on capital costs. Data to be reported to DOE shall include equipment costs, installation costs, and performance and operating data of the energy recovery equipment utilized. Supporting activities such as reservoir engineering or technology development may be included.

Phase 3 – Operation & Maintenance (O&M)

The objective of Phase 3 is to operate the geothermal energy facility for a minimum of two years and to report on the economic, performance, and operating characteristics of the facility. The final report should include a validation of technical and economic assumptions and documentation of lessons learned. Phase 3 activities should include plans for market penetration and/or commercialization of proposed technologies.

DOE plans to conduct a competitive project review in which awardees will present their projects to DOE individually (not to other awardees) in July 2011. Subject to conflict of interest considerations, DOE's System Integration and technology specific resources at DOE Federally Funded Research and Development Centers (FFRDC's), universities, USGS, etc, may be utilized to provide direction and analysis on projects, as appropriate. Progress on Phase 1 of projects will be evaluated according to the following criteria:

- Satisfactory completion of a feasibility study that demonstrates that electricity may be produced from the target geothermal resource at the capacity as originally proposed
- Satisfactory completion of engineering design activities that demonstrate how existing or new technology will be modified or created to innovatively produce electricity at the proposed project site as proposed
- Demonstration of completion of all regulatory and environmental permitting (including NEPA) required for the proposed project. If the permitting/NEPA review is not complete, a clear and reasonable schedule should be provided for expected completion of permitting activities
- Satisfactory completion of all proposed Phase 1 goals including a discussion of variance from the proposed project budget, schedule, and scope
- Clear definition on all proposed Phase 2/Phase 3 tasks and activities including discussion of the project budget (especially in regard to intangible drilling costs that are proposed, if any), schedule, and scope for subsequent phases
- Demonstration of continued financial viability of the project team demonstrated via a capital and operating budget/forecast, detailing sources and types of anticipated recipient cost share (e.g., cost share via company revenue, operating cash flow, lines of credit, internal/public/private equity sources, loans, debt versus capital, assets and liabilities)
- Demonstration of continued economic feasibility of the project demonstrated via capital and operating costs, cost/benefit analysis, payback period, installed cost per MWe, Levelized Cost of Energy (LCOE), and Return on Investment (ROI)

A go/no-go decision point should be included in all projects at the end of Phase 1. Project phases will correspond to Budget Periods. Upon completion of the competitive project review (down-selection process), DOE will determine whether the subsequent project phase(s) will be funded for continuation of the project. DOE will make one of three decisions for each award at the end of Phase 1:

- “Go” Forward – the project is on track and satisfies the competitive project review criteria, minimal or no modifications are required, work is acceptable, the proposed work plan for the next performance phase is acceptable, funding is available and the project continues to be appropriate to the mission and goals of GTP.
- “Hold” – the project is still viewed as having a high likelihood of success; however, additional information is required before a “Go” or “No-Go” decision can be made.
- “No-Go” – the project will be terminated and DOE will not provide further funding, subject to negotiation of final deliverables. This may be due to the recipient not satisfying the competitive project review criteria, irresolvable technical difficulties, changes in the GTP mission, goals or portfolio or lack of appropriated funds. Should the project be terminated, the final annual report will be accepted by GTP to fulfill the final technical report requirement.

Funding beyond Phase 1 of these awards is also subject to Congressional appropriations and availability of funds. Therefore, recipients of Phase 1 funding are not guaranteed funding beyond Phase 1 based on these factors.

A single Principal Investigator or organization may submit no more than one application for each Topic Area. Also, a single application which addresses more than one Topic Area will not be accepted. Therefore, applicants will be required to clearly state which Topic Area they are applying for on the cover page of the Project Narrative of the application.

Applications designed to enhance technological diversity of the GTP program portfolio, and enhance the geographic/climatic diversity of the program (e.g., projects conducted at candidate sites in areas in which electricity is not currently produced from geothermal energy), may be given additional consideration during the DOE reviewing process. Applications that demonstrate reasonable expectation of financial viability, with proposed recipient cost share above the minimum required (see Part III.B), may also be given greater consideration.

For all Topic Areas, the Applicant must state, in writing with concurrence from an authorized representative from the organization, that **non-proprietary data collected during the project period will be made available to the public through the National Geothermal Data System** (please reference <http://www.geothermaldata.org/Home.aspx> or <http://apps1.eere.energy.gov/geothermal/projects/projects.cfm/ProjectID=27> for more information). The data shall be converted to a common file format (Word, PDF, .jpg, etc.) if necessary.

SECTION II – AWARD INFORMATION

A. Type of Award Instrument

- For all Topic Areas, DOE anticipates awarding cooperative agreements under this program announcement (See Part VI.B.4 Statement of Substantial Involvement).

B. Estimated Funding

- For all Topic Areas, approximately \$20M total is expected to be available for this FOA. \$10M is expected to be available for new awards in FY 2010 and an additional \$10M total is expected to be available for awards made under this announcement in years FY 2011 through FY2012 for Phase II and beyond. Actual funding levels are subject to Congressional appropriations for this program.

C. Maximum and Minimum Award Size

- The DOE funding ceiling is defined as the estimated maximum amount for an individual award made under this announcement. The DOE funding floor is defined as the estimated minimum amount for an individual award made under this announcement. The following funding levels are expected for each Topic Area (see Section I.A for a description of each Topic Area):

<u>Topic Area</u>	<u>Phase 1 DOE Funding Ceiling</u>	<u>Total DOE Funding Ceiling</u>	<u>DOE Funding Floor</u>
A	\$750,000	\$2,000,000	None
B	\$750,000	\$2,000,000	None
C	\$750,000	\$5,000,000	None

D. Expected Number of Awards

- In total, DOE anticipates making 15-25 awards for Phase 1 activities under this announcement, depending on the size of the awards. Following the competitive project review in July 2011, DOE anticipates down-selecting to approximately 5 awards for Phase 2/Phase 3 activities. Upon initial application and following the competitive project review, DOE reserves the right to make one award, multiple awards, or no awards in any given Topic Area.

E. Anticipated Award Size

- The anticipated DOE funding for projects under each Topic Area in this announcement is:

<u>Topic Area</u>	<u>Anticipated DOE Funding</u>
A	\$1,500,000
B	\$1,500,000
C	\$5,000,000

F. Period of Performance

- For all Topic Areas, DOE anticipates making awards that will continue for up to 36 months over two budget periods. The first budget period (Phase 1) is expected cover a period of 10 months with an option for Phase 2 and 3 activities to run for an additional 26 months, contingent upon renewal of the award following a competitive project review (down-select) planned for July 2011.

G. Type of Application

- For all Topic Areas, DOE will accept only new applications under this announcement (i.e., applications for renewals of existing DOE funded projects will not be considered).

SECTION III - ELIGIBILITY INFORMATION

A. Eligible Applicants

- All domestic entities are eligible to apply for this FOA, except nonprofit organizations described in section 501(c)(4) of the Internal Revenue Code of 1986 that engaged in lobbying activities after December 31, 1995.
- Any DOE/National Nuclear Security Administration (NNSA) FFRDC contractor applying as the prime cannot exclusively withhold its services to only its application and must make itself available to other applicants on a non-exclusive basis.
- Foreign participants will be allowed as subrecipients only to a domestic applicant provided that:

The foreign subrecipient effort, in aggregate, shall not exceed 33% of the total estimated project costs which includes both the applicant's and the foreign subcontractor's portions of the effort.

The proposed project site must be domestically located (i.e., within the United States or its territories, including American Samoa, the Commonwealth of Puerto Rico, Guam, the Commonwealth of the Northern Mariana Islands, and the United States Virgin Islands).

B. Cost Sharing

- For all Topic Areas, the recipient cost share must be at least 20% of the total allowable costs for Phase 1, and 50% of the total allowable costs for Phases 2 and 3 of proposed projects and must come

from non-Federal sources unless otherwise allowed by law. The sum of the Government share, including FFRDC contractor costs, if applicable, and the recipient share of allowable costs equals the total allowable cost of the project. (See 10 CFR Part 600 for the applicable cost sharing requirements.)

C. FFRDC Eligibility Requirements

- A DOE National Laboratory Contractor is eligible to apply for funding as a prime applicant or a subcontractor under this FOA if its cognizant contracting officer provides written authorization and this authorization is submitted with the application. If a DOE 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 Management and Operating (M&O) contract. The following wording is acceptable for the authorization:

“Authorization is granted for the _____ Laboratory to participate in the proposed project. The work proposed for the laboratory is consistent with or complementary to the missions of the laboratory, will not adversely impact execution of assigned programs at the laboratory, and will not place the laboratory in impermissible competition with the domestic private sector.”

- A Non-DOE FFRDC contractor is eligible for funding as a prime applicant or a subcontractor on another entity's application. If a non-DOE FFRDC is selected for award, the proposed work will be authorized through an Interagency Agreement. 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. The following wording is acceptable for this authorization:

“Authorization is granted for the _____ 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 assigned programs at the laboratory, and will not place the laboratory in impermissible competition with the domestic private sector. This Laboratory is authorized by the following statutory authority to perform the work proposed in the application submitted under FOA-DE-0000318: ___[insert Statute name, citation, and section]___.”

- Value/Funding. The value of, and funding for, the FFRDC contractor portion of the work will not normally be included in the award to a successful applicant. Usually, DOE will fund a DOE FFRDC contractor through the DOE field work proposal system and other FFRDC contractors through an interagency agreement with the sponsoring agency.
- 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.
- Responsibility. The applicant, if selected for negotiation of award, 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.

SECTION IV – APPLICATION AND SUBMISSION INFORMATION

A. Address to Request Application Forms

Application forms and instructions are available at Grants.gov. To access these materials, go to <http://www.grants.gov>, select “Apply for Grants,” and then select “Download 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. (Also see Section H of this Part below.)

B. Notice of Intent and Pre-Application

1. Notice of Intent

Please submit a Notice of Intent via email to go.geothermal@go.doe.gov by June 22, 2010 if you intend to submit an application to this FOA. The Notice of Intent should include the Topic Area, Applicant Name, and Project Title. The purpose of the Notice of Intent is to aid DOE in planning the review process for applications received and is not mandatory for submission of an application. An application may be submitted by the application due date even if the Notice of Intent is not submitted by June 22, 2010.

2. Pre-application

A pre-application is not required.

C. Content and Form of Application

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

Once the forms below have been completed, save the Application Package in a single file, using up to 10 letters of the Applicant’s Organization Name as the file name (e.g., Company). If your organization is submitting more than one Application, you must identify an application number at the end of each file name (e.g., Company-1). If your organization is submitting more than one Application to different topic areas, you must identify an application number and the Topic Area Number at the end of each file name (e.g., Company-1-Topic1).

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 instructions on the form. The list of certifications and assurances referenced in Field 21 can be found at http://management.energy.gov/business_doe/business_forms.htm, under Certifications and Assurances. **Please ensure that the entire cost of project (all phases) is included in the appropriate fields in Block 18 on the SF-424 form including DOE funds, recipient cost share funding, and FFRDC funds (if applicable). Please list FFRDC funds in the “Other” field.**

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. In the form, 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 Attachments Form

Submit the following files with your application and attach them to the Other Attachments Form. Click on “Add Mandatory Other Attachment” to attach the Project Narrative. Click on “Add Optional Other Attachment,” to attach the other files.

a. Project Summary/Abstract File

The project summary/abstract must contain a summary of the proposed activity suitable for dissemination to the public. It should be a self-contained document that identifies the name of the applicant, the project director/principal investigator(s), the project title, the objectives of the project, a description of the project, including methods to be employed, the potential impact of the project (i.e., benefits, outcomes), and major participants (for collaborative projects). **This document must not include any proprietary or sensitive business information**, as the Department may make it available to the public. The project summary must not exceed 1 page when printed using standard 8.5” by 11” paper with 1” margins (top, bottom, left and right), single spaced, with font not smaller than 11 point. Save this information in a file named “Summary.pdf,” and click on “Add Optional Other Attachment” to attach.

b. Project Narrative File - Mandatory Other Attachment

The project narrative must not exceed twenty (20) pages, including cover page (**with a Topic Area declaration**), 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), 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 in a single file named “Project.pdf,” and click on “Add Mandatory Other Attachment” to attach.

The project narrative must include:

- Statement of Project Objectives (SOPO)
The SOPO must address how the project objectives will be met. It must contain a clear, concise description of all activities to be completed during the project performance and follow the requirements in the template. In the SOPO, describe the technical merit of the proposed project as well as the project phases and go/no-do decision points as specified in the Project Description in Part I. For a suggested format, please refer to form PMC 134.1 (SOPO template) at the following link: https://www.eere-pmc.energy.gov/procurenet/FinancialAssistance/Forms/Procurenet/PMC134_1-SOPO.doc.
- Merit Review Criterion Discussion
The section should be formatted to address each of the merit review criterion and sub-criterion listed in Part V. A. below. Provide sufficient information so that

reviewers will be able to evaluate the application in accordance with these merit review criteria. **Describe the current state of the art for the topic area and proposed improvement to that technology, as applicable.** DOE WILL EVALUATE AND CONSIDER ONLY THOSE APPLICATIONS THAT ADDRESS SEPARATELY EACH OF THE MERIT REVIEW CRITERION AND SUB-CRITERION.

- Relevance and Outcomes/Impacts:

This section should explain the relevance of the effort to the objectives in the program announcement and the expected outcomes and/or impacts. The justification for the proposed project should include a clear statement of the importance of the project in terms of the utility of the outcomes and the target community of beneficiaries.

- Roles of Participants:

For multi-organizational or multi-investigator projects, describe the roles and the work to be performed by each participant/investigator, business agreements between the applicant and participants, and how the various efforts will be integrated and managed.

- Facilities and Other Resources:

Identify the facilities (e.g., office, laboratory, computer, etc.) to be used at each performance site listed, and, if appropriate, indicate their capacities pertinent capabilities, relative proximity, and extent of availability to the project. Describe only those resources that are directly applicable to the proposed work. Provide any information describing the other resources available to the project, such as machine and electronics shops.

- Equipment:

List important items of equipment already available for this project, and if appropriate, note the location and pertinent capabilities of each. If you are proposing to acquire equipment, describe comparable equipment, if any, already at your organization and explain why it cannot be used.

- Bibliography and References, if applicable:

Provide a bibliography for any references cited in the Project Narrative section. This section must include only bibliographic citations.

All the components of your Project Narrative (listed above) must be within the Narrative page limit specified in paragraph b. above. Documents listed below may be included as clearly marked appendices to your Narrative and will not count towards the Project Narrative page limit. Please note that some of the required documents listed below may have their own page limits to which you must adhere.

c. Resume File

Provide a resume for each key person proposed, including subawardees and consultants if they meet the definition of key person. A key person is any individual who contributes in a substantive, measurable way to the execution of the project. Save all resumes in a single file named “resume.pdf” and click on “Add Optional Other Attachment” to attach. The biographical information for each resume must not exceed 2 pages when printed on 8.5” by 11” paper with 1 inch margins (top, bottom, left, and right), single spaced, with font not smaller than 11 point and should include the following information, if applicable:

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

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

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

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

Synergistic Activities. List no more than 5 professional and scholarly activities related to the effort proposed.

- Of the key personnel identified in this file, indicate the Principal Investigator(s) (PI).

- For Multiple Principal Investigators:

The applicant, whether a single organization or team/partnership/consortium, must indicate if the project will include multiple PIs. The decision to use multiple PIs for a project is the sole responsibility of the applicant. If multiple PIs will be designated, the application must identify the Contact PI/Project Coordinator and provide a “Coordination and Management Plan” that describes the organization structure of the project as it pertains to the designation of multiple PIs. This plan should, at a minimum, include:

- Process for making decisions on scientific/technical direction;
- Publications;
- Intellectual property issues;
- Communication plans;
- Procedures for resolving conflicts; and
- PIs’ roles and administrative, technical and scientific responsibilities for the project.

The resume file does not have a page limitation.

d. Budget File

SF 424 A Excel, Budget Information – Non-Construction Programs File

You must provide a separate budget for each phase 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://management.energy.gov/business_doe/business_forms.htm.

You may request funds under any of the Object Class Categories as long as the item and amount are necessary to perform the proposed work, meet all the criteria for allowability under the applicable Federal cost principles, and are not prohibited by the funding restrictions in this announcement (see Section IV, G). Save the information in a single file named “SF424A.xls,” and click on “Add Optional Other Attachment” to attach.

e. Budget Justification File

You must justify the costs proposed in each Object Class Category/Cost Classification category (e.g., identify key persons and personnel categories and the estimated costs for each person or category; provide a list of equipment and cost of each item; identify proposed subaward/consultant work and cost of each subaward/consultant; describe purpose of proposed travel (including the Competitive Project review), number of travelers and number of travel days; list general categories of supplies and amount for each category; and provide any other information you wish to support your budget). Provide the name of your cognizant/oversight agency, if you have one, and the name and phone number of the individual responsible for negotiating your indirect rates. If cost share is required, you must have a letter from each third party contributing cost share (i.e., a party other than the organization submitting the application) stating that the third party is committed to providing a specific minimum dollar amount of cost share. In the budget justification, identify the following information for each third party contributing cost share: (1) the name of the organization; (2) the proposed dollar amount to be provided; (3) the amount as a percentage of the total project cost; and (4) the proposed type of cost share – cash, services, or property. Save the budget justification information in a single file named “Budget.pdf,” and click on “Add Optional Other Attachment” to attach.

f. Letters of Commitment

If cost share is required, you must have a letter from each third party contributing cost share (i.e., a party other than the organization submitting the application) stating that the third party is committed to providing a specific minimum dollar amount of cost share. **All Letters of Commitment must be attached as an Appendix to the Project Narrative File.** Identify the following information for each third party contributing cost share: (1) the name of the organization; (2) the proposed dollar amount to be provided; (3) the amount as a percentage of the total project cost; and (4) the proposed type of cost share – cash, services, or property. Letters of Commitment from parties participating in the project, exclusive of vendors, who will not be contributing cost share, but will be integral to the success of the project must be included as part of this Appendix to the Narrative. Letters of Commitment will not count towards the Project Narrative page limit. Save the letters of commitment in a single file named “Letters.pdf,” and click on “Add Optional Other Attachment” to attach.

g. Proof of Financial Viability

Proof of financial viability must be provided with application materials. For public companies, this must include a Balance Sheet (B/S), Income Statement (I/S), and Cash Flow Statement (CFS) from latest quarter and year. For private companies, this must include statements prepared internally for tax purposes, etc. For both public and private companies, these documents must be certified by a CPA or other appropriate authority. Limit this attachment to 5 pages, save the information in a single file named “FinancialViability.pdf” (or other file name as applicable), and click on “Add Optional Other Attachment” to attach. Please annotate this information as “Sensitive” or “Confidential”, if necessary. DOE retains the right to retain independent financial consultant(s) to analyze the information provided by the applicant. The independent financial consultant(s) will not rate the financial viability, but simply provide an analysis of the financial viability of the applicant for consideration by the Selection Official.

h. Subaward Budget File(s)

You must provide a separate budget (i.e., budget for each budget phase and a cumulative budget) for each subawardee that is expected to perform work estimated to be more than

\$100,000 or 50 percent of the total work effort (whichever is less). Use the SF 424 A Excel for Non Construction Programs or the SF 424 C Excel for Construction Programs. These forms are found on the DOE Financial Assistance Forms Page at http://management.energy.gov/business_doe/business_forms.htm. Save each Subaward budget in a separate file. Use up to 10 letters of the subawardee's name (plus 424.xls) as the file name (e.g., company424.xls or energyres424.xls). Click on "Add Optional Other Attachment" to attach each file.

A budget justification for the subaward budget is also required. The budget justification must include the same justification information described in paragraph e. above.

i. Budget for DOE Federally Funded Research and Development Center (FFRDC) Contractor File, if applicable

If a DOE FFRDC contractor is to perform a portion of the work, you must provide a DOE Field Work Proposal in accordance with the requirements in DOE Order 412.1 Work Authorization System. The DOE Order 412.1, Work Authorization System and the DOE O 412.1, Field Work Proposal form are available at the following link, under "DOE Budget Forms":

http://management.energy.gov/business_doe/business_forms.htm

Use up to 10 letters of the FFRDC name (plus .pdf) as the file name (e.g., lanl.pdf or anl.pdf), and click on "Add Optional Other Attachment" to attach.

j. Authorization for non-DOE or DOE FFRDCs

Save the Authorization for non-DOE or DOE FFRDCs, as specified in Section III.C. Other Eligibility Requirements, in a single file named "FFRDC_Auth.pdf" and click on "Add Optional Other Attachment"

k. Environmental Questionnaire

For all Topic Areas, you must complete the environmental questionnaire at <https://www.eere-pmc.energy.gov/NEPA.asp>. As the online instructions indicate:

- a. Enter your user ID and password to access the site (if you are a new user, select "Create a new account for me" and create a user ID and password). Then select "DOE PMC-EF1 Environmental Checklist" as your submission type and click "Login." *Please remember your User ID and Password for all future NEPA submissions. You may also return to view and update your previous submissions.*
- b. On the next screen, complete all fields except for Subcontract Number (select "Eric Hass" as the DOE Project Officer in the dropdown box and specify "DE-FOA-0000318" as the Solicitation [FOA] Number), and upload a document describing your project by clicking on the "Browse" button and selecting your file. Click "Create EF1 and Continue to Part I and Part II" to proceed.
- c. Then, complete Part I of the Environmental Checklist and **make sure to click on the "Update Part I Information" button in the middle of the page.** After that, complete Part II and click on the "If You are Finished with Parts 1 & 2, Click to Continue to the Forms Area" button at the bottom of the page.
- d. On the final screen, upload construction/operation/regulatory permits already obtained for the project and other relevant documents by clicking on the "Browse" button, selecting your file, and then clicking on the "Upload Now" button. Print the completed EF1, scan it to a PDF file and save the questionnaire in a single file named

“Applicant_Name_EF1.pdf” and click on “Add Optional Other Attachment” to attach. When you have completed uploading all files, you may close the browser window as your EF1 submission is complete.

Please provide sufficient information to describe the extent of environmental benefits and impacts resulting from the proposed project including assumptions and quantitative data – provide as much information as possible on topics including, but not limited to, cultural and biological resources, handling/disposal of geothermal and power plant working fluids, road construction, transmission lines, and site restoration.

Sufficiently characterize the technical work to be accomplished and all historical and future environmental related activities in support of the proposed technical work. Include completed documents or links to completed documents and identify work remaining to be completed. These documents include, but are not limited to, permits, regulatory approvals, environmental assessments and environmental impact statements.

l. Project Management Plan

This plan should identify the activities/tasks to be performed, a time schedule for the accomplishment of the activities/tasks, the spending plan associated with the activities/tasks, and the expected dates for the release of outcomes. Applicants may use their own project management system to provide this information. This plan should identify any decision points and go/no-go decision criteria. Successful applicants must use this plan to report schedule and budget variances. Save this plan in a single file named “pmp.pdf” and click on “Add Optional Other Attachments” to attach.

m. SF-LLL Disclosure of Lobbying Activities

If applicable, complete SF- LLL. Applicability: If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the grant/cooperative agreement, you must complete and submit Standard Form - LLL, "Disclosure Form to Report Lobbying." The form is available in the optional document box on the Adobe Application Package attached to this FOA.

Summary of Required Forms/Files

Your application must include the following documents:

Name of Document	Format	File Name
SF 424 - Application for Federal Assistance	Part of Adobe Application Package	
Project/Performance Site Location(s)	Part of Adobe Application Package	
Other Attachments Form: Attach the following files to this form:	Part of Adobe Application Package	See Instructions
Project Summary/Abstract File	PDF	Summary.pdf

Project Narrative File, including required appendices	PDF	Project.pdf
Resume File	PDF	Resume.pdf
SF 424A Excel – Budget Information for Non-Construction Programs File	Excel	SF424A.xls
Budget Justification File	PDF	See Instructions
Letters of Commitment File	PDF	Letters.pdf
Proof of Financial Viability File	PDF	FinancialViability.pdf
Subaward Budget File(s), if applicable Budget Justification(s), if applicable	Excel for Budget PDF for Justification	See Instructions
Budget for Federally Funded Research and Development Center (FFRDC) Contractor File, if applicable.	PDF	See instructions
Authorization from cognizant Contracting Officer for FFRDC, if applicable.	PDF	FFRDC_Auth.pdf
Environmental Questionnaire	PDF	See Instructions
Project Management Plan	PDF	PMP.pdf
SF-LLL Disclosure of Lobbying Activities, if applicable	PDF	SF-LLL.pdf

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
- Commitment Letter from Third Parties Contributing to Cost Share, if applicable
- Environmental Questionnaire

E. Submission Dates and Times

1. Pre-application Due Date

- Pre-applications are not required.

2. Application Due Date

- Applications must be received by July 9, 2010, not later than 11:59 P.M. Eastern Time. You are encouraged to transmit your application 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

Cost Principles. Costs must be allowable in accordance with the applicable Federal cost principles referenced in 10 CFR Part 600. 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 10 CFR part 600. Recipients must obtain the prior approval of the contracting officer for any pre-award costs that are for periods greater than 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.

If recipients are State or Local Governments, they may not incur pre-award costs prior to award, without prior approval of the DOE contracting officer.

H. Submission and Registration Requirements

1. Where to Submit

APPLICATIONS MUST BE SUBMITTED THROUGH GRANTS.GOV, TO BE CONSIDERED FOR AWARD UNDER THIS ANNOUNCEMENT. You cannot submit an application through Grants.gov unless you are registered. Please read the registration requirements below carefully and start the process immediately. Submit electronic applications through the “Apply for Grants” function at www.Grants.gov.

If you have problems completing the registration process or submitting your application, call Grants.gov at 1-800-518-4726 (24 hours a day, 7 days a week except on federal holidays) or send an email to support@grants.gov. It is the responsibility of the applicant to verify successful transmission, prior to the Application due date and time.

2. Registration Process Requirements

To submit an application in response to this FOA, Applicants must be registered with Grants.gov. Register in Grants.gov at <http://www.grants.gov/>. See the Organization Registration User Guide at <http://www.grants.gov/assets/OrgRegUserGuide.pdf>.

The Applicant User Guide is at <http://www07.grants.gov/assets/ApplicantUserGuide.pdf>.

Allow at least 21 days to complete all registration requirements.

Before you can register with Grants.gov, you will need the following:

- a. Your organization's Dun and Bradstreet Data Universal Numbering System (DUNS) (including plus 4 extension if applicable). To check whether your organization has a DUNS or if your organization requires a DUNS, search for the number or request one at <http://fedgov.dnb.com/webform/displayHomePage.do>.

- b. A federal Central Contractor Registration (CCR) account. If your organization is not currently registered with CCR, please register at www.ccr.gov before continuing with your Grants.gov registration. Designating an Electronic Business Point of Contact (EBiz POC) and obtaining a special password called an MPIN are important steps in CCR registration. These items are needed to submit applications in Grants.gov. Update your CCR registration annually.
- c. Registration in FedConnect at <https://www.fedconnect.net/>; use “Register as a Vendor” link. To create an organization account, your organization’s CCR MPIN is required; obtain the MPIN from your organization’s Electronic Business Point of Contact. Refer to the FedConnect Quick Start guide at the website

3. Electronic Authorization of Applications and Award Documents

Submission of an application and supplemental information under this announcement through electronic systems used by the Department of Energy, including Grants.gov and FedConnect, constitutes the authorized representative’s approval and electronic signature.

Submission of award documents, including modifications, through electronic systems used by the Department of Energy, including FedConnect, constitutes the authorized representative’s approval and acceptance of the terms and conditions of the award. Award acknowledgement via FedConnect constitutes the authorized representative’s electronic signature.

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 announcement has been submitted; (3) all mandatory requirements are satisfied; and (4) the proposed project is responsive to the objectives of the funding opportunity announcement. If an application fails to meet these requirements, it may be deemed non-responsive and eliminated from full Merit Review.

A single Principal Investigator or organization may submit no more than one application for each Topic Area. Also, a single application which addresses more than one Topic Area will not be accepted. Therefore, applicants will be required to clearly state which Topic Area they are applying for on the cover page of the Project Narrative of the application.

2. Merit Review Criteria

The following factors will be used to objectively evaluate applications. The bullets within each criterion should not be considered to be equally weighted and are not listed in order of priority.

Criterion 1: Technical Considerations

Weight: [35%]

- Level and impact of innovation of the proposed project above current state-of-the-art, including

the economic potential of the innovation

- Technical feasibility of utilizing energy contained in low temperature, coproduced, or geopressured geothermal fluids including adequacy of site infrastructure and/or engineering design
- Adequacy of the proposed geothermal/geopressured resource as demonstrated by the proposed geologic model (structural and reservoir) in MWe
- Adequacy and completeness of the Statement of Project Objectives (SOPO) including a description of how all objectives will be met

Criterion 2: Non-Technical Considerations

Weight: [35%]

Note: For the first two bullets of this Criterion, applications including sufficient legal documentation¹ to demonstrate that they have the legal surface and subsurface rights to complete the project at the proposed site will receive a higher score than those without sufficient documentation. Applications that include evidence of required permits, regulatory approvals, environmental assessments/environmental impact statements will be receive greater consideration than those without those elements. If required permits have not been obtained, **applications that include clear permitting plans to obtain required documents by the time of the competitive project review will receive greater consideration than those applications without clear permitting plans.**

- Adequacy of demonstration of right of access to project site via sufficient legal documentation
- Extent of the characterization, planning and regulatory and environmental permitting of the target site including status/evidence of permits and detail regarding acquisition of remaining approvals
- Adequacy, appropriateness, and reasonableness of proposed project budget (by phase and cumulatively)
- Adequacy of a feasibility study, including capital and operating costs, cost/benefit analysis, payback period, installed cost per MWe, Leveled Cost of Energy (LCOE), Return on Investment (ROI), avoided cost of electricity, quantification of overall climate change benefits of the project, etc.
- Likelihood of achieving project objectives in an expeditious manner through a logical task structure, reasonableness of the schedule (completion of Phase 1 by the time of the competitive project review), and milestones including Gantt Chart and risk mitigation plan

Criterion 3: Project Team and Commercialization Considerations

Weight: [30%]

- Degree of commitment from applicant and project partners as evidenced by letters of commitment that clearly specify how cost share requirements will be met
- Qualifications, capabilities, credentials, and experience of the principal investigator and other members of the project team
- Adequacy of plan to provide non-proprietary data to the National Geothermal Data System
- Adequacy of information dissemination and market penetration/commercialization plans

3. Other Selection Factors

The Selection Official may consider the following program policy factors in the selection process:

¹ For projects on federal land, legal documentation may include a BLM lease, BLM site license, BLM exploration permit, BLM and a BLM utilization permit. For projects on private/state land, legal documentation may include: a deed or lease for the mineral/water/geothermal rights (as defined in that state), a similar document showing surface rights and operating permits.

1. Technological diversity of projects
2. Geographic/climatic diversity of projects
3. Proposed cost share above the minimum level required
4. Reasonable expectation of financial viability of applicant to complete the proposed project

B. Review and Selection Process

1. Merit Review

Applications Subject to 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://www.management.energy.gov/documents/meritrev.pdf>.

It is very important that those documents, Project Abstract and Project Narrative file, that will be used during the Merit Review Process do not contain any Personally Identifiable Information as described in Appendix B.

2. Selection

Selection Official Consideration

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

3. Discussions and Award

Government Discussions with Applicant

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 10 CFR part 600; 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 applicants selected for award by the end of August 2010 and making awards by the end of September 2010.

SECTION VI - AWARD ADMINISTRATION INFORMATION

A. Award Notices

1. Notice of Selection

DOE will notify applicants selected for award. This notice of selection is not an authorization to

begin performance. (See Section IV.G with respect to the allowability of pre-award costs.)

Organizations whose applications have not been selected will be advised as promptly as possible. This notice will explain why the application was not selected.

2. Notice of Award

A Financial Assistance Award or Assistance Agreement issued by the Contracting Officer is the authorizing award document. It normally includes, either as an attachment or by reference: (1) Special Terms and Conditions; (2) Applicable program regulations, if any; (3) Application as approved by DOE; (4) DOE assistance regulations at 10 CFR part 600; (5) National Policy Assurances To Be Incorporated As Award Terms; (6) Budget Summary; (7) Statement of Project Objectives; and (8) Federal Assistance Reporting Checklist, which identifies the reporting requirements.

For grants and cooperative agreements made to universities, non-profits and other entities subject to OMB Circular A-110, the Award also includes the Research Terms and Conditions and the DOE Agency Specific Requirements located at: <http://www.nsf.gov/bfa/dias/policy/rtc/index.jsp>.

B. Administrative and National Policy Requirements

1. Administrative Requirements

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

2. Special Terms and Conditions and National Policy Requirements

The DOE Special Terms and Conditions for Use in Most Grants and Cooperative Agreements are located at http://management.energy.gov/business_doe/business_forms.htm
<http://www.management.energy.gov/documents/specialtermsandcondition308.pdf>.

The National Policy Assurances To Be Incorporated As Award Terms are located at http://management.energy.gov/business_doe/business_forms.htm
http://management.energy.gov/business_doe/1374.htm.

3. Intellectual Property Provisions

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

4. Statement of Substantial Involvement: DOE or DOE representatives will monitor and/or redirect the technical aspects of the project including, but not limited to, necessary and appropriate feasibility studies, site engineering studies, and geologic models. All DOE-funded Low Temperature/Coproduced/ Geopressured Demonstration Projects will be verified by DOE or DOE representatives that energy can be produced economically at the site, the project contains the necessary equipment for energy production, and to characterize the target geothermal resource. **DOE plans to conduct a competitive project review in July 2011 to down-select among Phase I projects.**

DOE, through a Go/No Go determination process, will review the progress of each project and

the results of the feasibility studies. If DOE approves the project for Phase 2, the recipient will be granted permission to then conduct field work, dependent upon all proper permits being acquired (if necessary). DOE will provide meta data standards to the recipient for the purpose of making appropriate data public.

C. Reporting

Reporting requirements are identified on the Federal Assistance Reporting Checklist, DOE F 4600.2, attached to the award agreement. For a sample Checklist, see <http://management.energy.gov/documents/DOEF46002PolicyVersion.pdf>.

Also, the following additional reporting requirements will apply to awards made under this announcement:

- Competitive Project Review (down-select)
- Awardees may be asked to present paper(s) at annual geothermal conferences.
- Process unit performance and costing data on a quarterly basis

SECTION VII - QUESTIONS/AGENCY CONTACTS

A. Questions

Questions regarding the content of the announcement must be submitted through the FedConnect system. You must register with FedConnect to respond as an interested party to submit questions, and to review responses to questions. It is recommended that you register as soon after release of the FOA as possible to have the benefit of all responses. More information is available at https://www.fedconnect.net/Fedconnect/PublicPages/FedConnect_Ready_Set_Go.pdf.

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 pertaining to the **submission of applications through Grants.gov** should be directed by e-mail to support@grants.gov or by phone to 1-800-518-4726. The Grants.gov Helpdesk is available 7:00 A.M. to 9:00 P.M. Eastern Time.

B. Agency Contacts

Name: Melissa Jacobi
E-mail: go.geothermal@go.doe.gov

SECTION VIII - OTHER INFORMATION

A. Modifications

Notices of any modifications to this announcement will be posted on Grants.gov. When you download the application at Grants.gov, you can register to receive notifications of changes through Grants.gov.

Notices of any modifications to this announcement will also be available in the FedConnect system. You can receive an email when a modification or an announcement message is posted by registering

with FedConnect as an interested party for this FOA. It is recommended that you register as soon after the release of the FOA as possible to ensure you receive timely notice of any modifications or other announcements. More information is available at <http://www.fedconnect.net> and https://www.fedconnect.net/Fedconnect/PublicPages/FedConnect_Ready_Set_Go.pdf

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 anyone other than the Contracting Officer, either explicit or implied, is invalid.

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 _____ 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 (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. Intellectual Property Developed under this Program

Patent Rights. **For all Topic Areas**, the Government will have certain statutory rights in an invention that is conceived or first actually reduced to practice under a DOE award. 42 U.S.C. 5908 provides

that title to such inventions vests in the United States, except where 35 U.S.C. 202 provides otherwise for nonprofit organizations or small business firms. However, the Secretary of Energy may waive all or any part of the rights of the United States subject to certain conditions. (See “Notice of Right to Request Patent Waiver” in paragraph G below).

Rights in Technical Data. **For all Topic Areas:** normally, the government has unlimited rights in technical data created under a DOE agreement. Delivery or third party licensing of proprietary software or data developed solely at private expense will not normally be required except as specifically negotiated in a particular agreement to satisfy DOE’s own needs or to insure the commercialization of technology developed under a DOE agreement.

Special Protected Data Statutes. **For all Topic Areas,** this program is covered by a special protected data statute. The provisions of the statute provide for the protection from public disclosure, for a period of up to three years from the date of its development, of first-produced 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, (10 CFR 600 Appendix A to Subpart D), will apply to an award made under this announcement. This provision will 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 may also identify data that will be recognized by the parties as protected data. For National Laboratories and FFRDCs, the data rights clause in Applicant’s Management and Operating (M&O) Contract will apply.

G. Notice of Right to Request Patent Waiver

DOE may issue a class waiver for Agreements awarded under this FOA, which DOE expects will cover most, if not all, prime Recipients and team members. If a class waiver is not issued or a prime Recipient or team member does not qualify for the class waiver, an Applicant, including team members other than the prime Recipient, 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 prime Recipients and team members 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. Additionally, DOE’s patent waivers will include a U.S. competitiveness provision reflecting DOE’s programmatic objectives; e.g., improving the competitive position as well as the U.S. employment opportunities in U.S. industries.

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

H. Notice Regarding Eligible/Ineligible Activities

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

I. Notice of Right to Conduct a Review of Financial Capability

DOE reserves the right to conduct an independent third party review of financial capability for applicants that are selected for negotiation of award (including personal credit information of principal(s) of a small business if there is insufficient information to determine financial capability of the organization).

J. Notice of Potential Disclosure under Freedom of Information Act

Applicants should be advised that identifying information regarding all applicants, including applicant names and/or points of contact, may be subject to public disclosure under the Freedom of Information Act, whether or not such applicants are selected for negotiation of award.

REFERENCE MATERIAL

Appendix A – Definitions

“Amendment” means a revision to a Funding Opportunity Announcement

“Applicant” means the legal entity or individual signing the Application. This entity or individual may be one organization or a single entity representing a group of organizations (such as a Consortium) that has chosen to submit a single Application in response to a Funding Opportunity Announcement.

“Application” means the documentation submitted in response to a Funding Opportunity Announcement.

“Authorized Organization Representative (AOR)” is the person with assigned privileges who is authorized to submit grant applications through Grants.gov on behalf of an organization. The privileges are assigned by the organization’s E-Business Point of Contact designated in the CCR.

“Award” means the written documentation executed by a DOE Contracting Officer, after an Applicant is selected, which contains the negotiated terms and conditions for providing Financial Assistance to the Applicant. A Financial Assistance Award may be either a Grant or a Cooperative Agreement.

“Budget” means the cost expenditure plan submitted in the Application, including both the DOE contribution and the Applicant Cost Share.

“Central Contractor Registration (CCR)” is the primary database which collects, validates, stores and disseminates data in support of agency missions. Funding Opportunity Announcements which require application submission through FedConnect or Grants.gov require that the organization first be registered in the CCR at <http://www.grants.gov/CCRRegister>.

“Consortium (plural consortia)” means the group of organizations or individuals that have chosen to submit a single Application in response to a Funding Opportunity Announcement.

“Contracting Officer” means the DOE official authorized to execute Awards on behalf of DOE and who is responsible for the business management and non-program aspects of the Financial Assistance process.

“Cooperative Agreement” means a Financial Assistance instrument used by DOE to transfer money or property when the principal purpose of the transaction is to accomplish a public purpose of support or stimulation authorized by Federal statute, and Substantial Involvement (see definition below) is anticipated between DOE and the Applicant during the performance of the contemplated activity.

“Cost Sharing” means the respective share of Total Project Costs to be contributed by the Applicant and by DOE. The percentage of Applicant Cost Share is to be applied to the Total Project Cost (i.e., the sum of Applicant plus DOE Cost Shares) rather than to the DOE contribution alone.

“Data Universal Numbering System (DUNS) Number” is a unique nine-character identification number issued by Dun and Bradstreet (D&B). Organizations must have a DUNS number prior to registering in the CCR. Call 1-866-705-5711 to receive one free of charge.
http://www.grants.gov/applicants/request_duns_number.jsp

“Domestic Entity” means any individual, corporation, joint venture or partnership incorporated, licensed to conduct business or organized under the laws of any state or territory of the United States or the District of Columbia.

“E-Business Point of Contact (POC)” is the individual who is designated as the Electronic Business Point of Contact in the CCR registration. This person is the sole authority of the organization with the capability of designating or revoking an individual’s ability to conduct CCR transactions.

“E-Find” is a Grants.gov webpage where you can search for Federal Funding Opportunities in FedGrants. <http://www.grants.gov/search/searchHome.do>

“Financial Assistance” means the transfer of money or property to an Applicant or Participant to accomplish a public purpose of support authorized by Federal statute through Grants or Cooperative Agreements and sub-awards. For DOE, it does not include direct loans, loan guarantees, price guarantees, purchase agreements, Cooperative Research and Development Agreements (CRADAs), or any other type of financial incentive instrument.

“FedConnect” is where federal agencies post opportunities and make awards via the web. Any Applicant can view public postings without registering. However, registered users have numerous added benefits including the ability to electronically submit Applications / Responses to the government directly through this site. <https://www.fedconnect.net/FedConnect/>

“Federally Funded Research and Development Center (FFRDC)” means a research laboratory as defined by Federal Acquisition Regulation 35.017.

“Foreign participant” means any individual, corporation, joint venture or partnership that is incorporated, licensed to conduct business or organized under the laws of any country other than the United States.

“Funding Opportunity Announcement (FOA)” is a publicly available document by which a Federal agency makes known its intentions to award discretionary grants or cooperative agreements, usually as a result of competition for funds. Funding opportunity announcements may be known as program announcements, notices of funding availability, solicitations, or other names depending on the agency and type of program.

“Geothermal” refers to the stored thermal energy in, or heat produced from, the Earth’s interior.

“Geothermal Resources” are defined as geothermal conditions where the technology exists to use the stored thermal energy to either produce electricity or for direct use, e.g., space heating, district heating, snow melting, aquaculture, etc.

“Grant” means a Financial Assistance instrument used by DOE to transfer money or property when the principal purpose of the transaction is to accomplish a public purpose of support or stimulation authorized by Federal statute, and no Substantial Involvement is anticipated between DOE and the Applicant during the performance of the contemplated activity.

“Grants.gov” is the “storefront” web portal which allows organizations to electronically find grant opportunities from all Federal grant-making agencies. Grants.gov is THE single access point for over 900 grant programs offered by the 26 Federal grant-making agencies. <http://www.grants.gov>

“Indian Tribe” means any Indian tribe, band, nation, or other organized group or community, including Alaska Native village or regional or village corporation, as defined in or established pursuant to the Alaska Native Claims Settlement Act (85 Stat. 688)[43 U.S.C. § 1601 et seq.], which are recognized as eligible for the special programs and services provided by the United States to Indians because of their status as Indians.

“Intangible Drilling Costs (IDC)” means costs for items or services that are necessary to drill wells but do not become part of the well/wellhead after drilling is complete, e.g., site preparation costs, rig transport, rig operations (day rate, etc.), drilling fluids, formation evaluation, completion tools, perforating, site supervision services, fuel, logging, and drill bits.

“Key Personnel” mean the individuals who will have significant roles in planning and implementing the proposed Project on the part of the Applicant and Participants, including FFRDCs.

“Marketing Partner Identification Number (MPIN)” is a very important password designated by your organization when registering in CCR. The E-Business Point of Contact will need the MPIN to assign privileges to the individual(s) authorized to perform CCR transactions on behalf of your organization. The MPIN must have 9 digits containing at least one alpha character (must be in capital letters) and one number (no spaces or special characters permitted).

“Participant” for purposes of this Funding Opportunity Announcement only, means any entity, except the Applicant substantially involved in a Consortium, or other business arrangement (including all parties to the Application at any tier), responding to the Funding Opportunity Announcement.

“Principal Investigator” refers to the technical point of contact/Project Manager for a specific project award.

“Project” means the set of activities described in an Application, State plan, or other document that is approved by DOE for Financial Assistance (whether such Financial Assistance represents all or only a portion of the support necessary to carry out those activities).

“Proposal” is the term used to describe the documentation submitted in response to a Funding Opportunity Announcement. Also see Application.

“Recipient” means the organization, individual, or other entity that receives a Financial Assistance Award from DOE, is financially accountable for the use of any DOE funds or property provided for the performance of the Project, and is legally responsible for carrying out the terms and condition of the award.

“Rework” refers to the performance of remedial operations on a well in order to prepare it for production or injection.

“Selection” means the determination by the DOE Selection Official that negotiations take place for certain Projects with the intent of awarding a Financial Assistance instrument.

“Selection Official” means the DOE official designated to select Applications for negotiation toward Award under a subject Funding Opportunity Announcement.

“Substantial Involvement” means involvement on the part of the Government. DOE's involvement may include shared responsibility for the performance of the Project; providing technical assistance or guidance which the Applicant is to follow; and the right to intervene in the conduct or performance of the Project. Such involvement will be negotiated with each Applicant prior to signing any agreement.

“Tangible Drilling Costs” means costs for items that become part of the final well/wellhead after drilling is complete (e.g., well casing [surface, intermediate, production, and tubing] and well equipment [packers, wellhead, production trees]).

“Technology Investment Agreement (TIA)” is a type of assistance instrument used to support or stimulate research projects involving for-profit firms, especially commercial firms that do business primarily in the commercial marketplace. TIAs are different from grants and cooperative agreements in that the award terms may vary from the Government-wide standard terms (See DOE TIA regulations at 10 CFR Part 603). The primary purposes for including a TIA in the type of available award instruments are to encourage non-traditional Government contractors to participate in an R&D program and to facilitate new relationships and business practices. A TIA can be particularly useful for awards to consortia (See 10 CFR 603.225(b) and 603.515, Qualification of a consortium).

“Total Project Cost” means all the funds to complete the effort proposed by the Applicant, including DOE funds (including direct funding of any FFRDC) plus all other funds that will be committed by the Applicant as Cost Sharing.

“Tribal Energy Resource Development Organization or Group” means an “organization” of two or more entities, at least one of which is an Indian Tribe (see “Indian Tribe” above) that has the written consent of the governing bodies of all Indian Tribes participating in the organization to apply for a grant or loan, or other assistance under 25 U.S.C. § 3503.

Appendix B – Personally Identifiable Information

In responding to this Announcement, Applicants must ensure that Protected Personally Identifiable Information (PII) is not included in the following documents: Project Abstract, Project Narrative, Biographical Sketches, Budget or Budget Justification. These documents will be used by the Merit Review Committee in the review process to evaluate each application. PII is defined by the Office of Management and Budget (OMB) and DOE as:

Any information about an individual maintained by an agency, including but not limited to, education, financial transactions, medical history, and criminal or employment history and information that can be used to distinguish or trace an individual's identity, such as their name, social security number, date and place of birth, mother's maiden name, biometric records, etc., including any other personal information that is linked or linkable to an individual.

This definition of PII can be further defined as: (1) Public PII and (2) Protected PII.

- a. **Public PII:** PII found in public sources such as telephone books, public websites, business cards, university listing, etc. Public PII includes first and last name, address, work telephone number, email address, home telephone number, and general education credentials.
- b. **Protected PII:** PII that requires enhanced protection. This information includes data that if compromised could cause harm to an individual such as identity theft.

Listed below are examples of Protected PII that Applicants must not include in the files listed above to be evaluated by the Merit Review Committee:

- Social Security Numbers in any form
- Place of Birth associated with an individual
- Date of Birth associated with an individual
- Mother's maiden name associated with an individual
- Biometric record associated with an individual
- Fingerprint
- Iris scan
- DNA
- Medical history information associated with an individual
- Medical conditions, including history of disease
- Metric information, e.g. weight, height, blood pressure
- Criminal history associated with an individual
- Employment history and other employment information associated with an individual
- Ratings
- Disciplinary actions
- Performance elements and standards (or work expectations) are PII when they are so intertwined with performance appraisals that their disclosure would reveal an individual's performance appraisal
- Financial information associated with an individual
- Credit card numbers
- Bank account numbers
- Security clearance history or related information (not including actual clearances held)

Listed below are examples of Public PII that Applicants may include in the files listed above to be evaluated by the Merit Review Committee:

- Phone numbers (work, home, cell)
- Street addresses (work and personal)
- Email addresses (work and personal)
- Digital pictures
- Medical information included in a health or safety report
- Employment information that is not PII even when associated with a name
- Resumes, unless they include a Social Security Number
- Present and past position titles and occupational series
- Present and past grades
- Present and past annual salary rates (including performance awards or bonuses, incentive awards, merit pay amount, Meritorious or Distinguished Executive Ranks, and allowances and differentials)
- Present and past duty stations and organization of assignment (includes room and phone numbers, organization designations, work email address, or other identifying information regarding buildings, room numbers, or places of employment)
- Position descriptions, identification of job elements, and those performance standards (but not actual performance appraisals) that the release of which would not interfere with law enforcement programs or severely inhibit agency effectiveness
- Security clearances held
- Written biographies (e.g. to be used in a program describing a speaker)
- Academic credentials
- Schools attended
- Major or area of study
- Personal information stored by individuals about themselves on their assigned workstation or laptop unless it contains a Social Security Number

Appendix C – Cost Share Information

Cost Sharing or Cost Matching

The terms “cost sharing” and “cost matching” are often used synonymously. Even the DOE Financial Assistance Regulations, 10 CFR Part 600, use both of the terms in the titles specific to regulations applicable to cost sharing. DOE almost always uses the term “cost sharing,” as it conveys the concept that **non-federal share is calculated as a percentage of the Total Project Cost**. An exception is the State Energy Program Regulation, 10 CFR Part 420.12, State Matching Contribution. There “cost matching” for the non-federal share is calculated as a percentage of the federal funds only, rather than the Total Project Cost.

How Cost Sharing Is Calculated

As stated above, cost sharing is calculated as a percentage of the Total Project Cost. Following is an example of how to calculate cost sharing amounts for a project with \$1,000,000 in federal funds with a minimum 20% non-federal cost sharing requirement:

Formula: Federal share (\$) divided by Federal share (%) = Total Project Cost

Example: \$1,000,000 divided by 80% = \$1,250,000

Formula: Total Project Cost (\$) minus Federal share (\$) = Non-federal share (\$)

Example: \$1,250,000 minus \$1,000,000 = \$250,000

Formula: Non-federal share (\$) divided by Total Project Cost (\$) = Non-federal share (%)

Example: \$250,000 divided by \$1,250,000 = 20%

See the sample cost share calculation for a blended cost share percentage below. **Keep in mind that FFRDC funding is DOE funding.**

What Qualifies For Cost Sharing

While it is not possible to explain what specifically qualifies for cost sharing in one or even a couple of sentences, in general, if a cost is allowable under the cost principles applicable to the organization incurring the cost and is eligible for reimbursement under a DOE grant or cooperative agreement, then it is allowable as cost share. Conversely, if the cost is not allowable under the cost principles and not eligible for reimbursement, then it is not allowable as cost share. In addition, costs may not be counted as cost share if they are paid by the Federal Government under another award unless authorized by Federal statute to be used for cost sharing.

The rules associated with what is allowable as cost share are specific to the type of organization that is receiving funds under the grant or cooperative agreement, though are generally the same for all types of entities. The specific rules applicable to:

- Institutions of Higher Education, Hospitals, and Other Nonprofit Organizations are found at 10 CFR600.123;
- State and Local Governments are found at 10 CFR600.224;
- For-profit Organizations are found at 10 CFR600.313.

In addition to the regulations referenced above, other factors may also come into play such as timing of donations and length of the project period. For example, the value of ten years of donated maintenance on a project that has a project period of five years would not be fully allowable as cost share. Only the value

for the five years of donated maintenance that corresponds to the project period is allowable and may be counted as cost share.

Additionally, DOE generally does not allow pre-award costs for either cost share or reimbursement when these costs precede the signing of the appropriation bill that funds the award. In the case of a competitive award, DOE generally does not allow pre-award costs prior to the signing of the Selection Statement by the DOE Selection Official.

Following is a link to the DOE Financial Assistance Regulations. You can click on the specific section for each Code of Federal Regulations reference mentioned above.

DOE Financial Assistance Regulations:

<http://ecfr.gpoaccess.gov/cgi/t/text/text-idx?c=ecfr&sid=98a996164312e8dcf0df9c22912852b0&rgn=div5&view=text&node=10:4.0.1.3.9&idno=10>

As stated above, the rules associated with what is allowable cost share are generally the same for all types of organizations. Following are the rules found to be common, but again, the specifics are contained in the regulations and cost principles specific to the type of entity:

(A) *Acceptable contributions.* All contributions, including cash contributions and third party in-kind contributions, must be accepted as part of the recipient's cost sharing if such contributions meet all of the following criteria:

- (1) They are verifiable from the recipient's records.
- (2) They are not included as contributions for any other federally-assisted project or program.
- (3) They are necessary and reasonable for proper and efficient accomplishment of project or program objectives.
- (4) They are allowable under the cost principles applicable to the type of entity incurring the cost as follows:

(a) *For-profit organizations.* Allowability of costs incurred by for-profit organizations and those nonprofit organizations listed in Attachment C to OMB Circular A-122 is determined in accordance with the for-profit costs principles in 48 CFR Part 31 in the Federal Acquisition Regulation, except that patent prosecution costs are not allowable unless specifically authorized in the award document.

(b) *Other types of organizations.* Allowability of costs incurred by other types of organizations that may be subrecipients under a prime award is determined as follows:

(i) *Institutions of higher education.* Allowability is determined in accordance with OMB Circular No. A-21 -- Cost Principles for Educational Institutions

(ii) *Other nonprofit organizations.* Allowability is determined in accordance with OMB Circular A-122, Cost Principles for Non-Profit Organizations

(iii) *Hospitals.* Allowability is determined in accordance with the provisions of 45 CFR Part 74, Appendix E, Principles for Determining Costs Applicable to Research and Development Under Grants and Contracts with Hospitals

(iv) *Governmental organizations.* Allowability for State, local, or federally recognized Indian tribal government is determined in accordance with OMB Circular No. A-87, Cost Principles for State, Local, and Indian Tribal Governments

(5) They are not paid by the Federal Government under another award unless authorized by Federal statute to be used for cost sharing or matching.

(6) They are provided for in the approved budget.

(B) *Valuing and documenting contributions*

(1) *Valuing recipient's property or services of recipient's employees.* Values are established in accordance with the applicable cost principles, which mean that amounts chargeable to the project are determined on the basis of costs incurred. For real property or equipment used on the project, the cost principles authorize depreciation or use charges. The full value of the item may be applied when the item will be consumed in the performance of the award or fully depreciated by the end of the award. In cases where the full value of a donated capital asset is to be applied as cost sharing or matching, that full value must be the lesser of the following:

(a) The certified value of the remaining life of the property recorded in the recipient's accounting records at the time of donation; or

(b) The current fair market value. If there is sufficient justification, the contracting officer may approve the use of the current fair market value of the donated property, even if it exceeds the certified value at the time of donation to the project. The contracting officer may accept the use of any reasonable basis for determining the fair market value of the property.

(2) *Valuing services of others' employees.* If an employer other than the recipient furnishes the services of an employee, those services are valued at the employee's regular rate of pay, provided these services are for the same skill level for which the employee is normally paid.

(3) *Valuing volunteer services.* Volunteer services furnished by professional and technical personnel, consultants, and other skilled and unskilled labor may be counted as cost sharing or matching if the service is an integral and necessary part of an approved project or program. Rates for volunteer services must be consistent with those paid for similar work in the recipient's organization. In those markets in which the required skills are not found in the recipient organization, rates must be consistent with those paid for similar work in the labor market in which the recipient competes for the kind of services involved. In either case, paid fringe benefits that are reasonable, allowable, and allocable may be included in the valuation.

(4) *Valuing property donated by third parties.*

(a) Donated supplies may include such items as office supplies or laboratory supplies. Value assessed to donated supplies included in the cost sharing or matching share must be reasonable and must not exceed the fair market value of the property at the time of the donation.

(b) Normally only depreciation or use charges for equipment and buildings may be applied. However, the fair rental charges for land and the full value of equipment or other capital assets may be allowed, when they will be consumed in the performance of the award or fully depreciated by the end of the award, provided that the contracting officer has approved the charges. When use charges are applied, values

must be determined in accordance with the usual accounting policies of the recipient, with the following qualifications:

(i) The value of donated space must not exceed the fair rental value of comparable space as established by an independent appraisal of comparable space and facilities in a privately-owned building in the same locality.

(ii) The value of loaned equipment must not exceed its fair rental value.

(5) *Documentation.* The following requirements pertain to the recipient's supporting records for in-kind contributions from third parties:

(a) Volunteer services must be documented and, to the extent feasible, supported by the same methods used by the recipient for its own employees.

(b) The basis for determining the valuation for personal services and property must be documented.

**SAMPLE COST SHARE CALCULATION
FOR BLENDED COST SHARE PERCENTAGE**

Following example shows the math for calculating required cost share for a project with \$2,000,000 in Federal funds with four tasks requiring different Non-federal cost share percentages:

<u>Task</u>	<u>Proposed Federal Share</u>	<u>Required Federal Share %</u>	<u>Non-federal Cost Share %</u>
Task 1 (R&D)	\$1,000,000	80%	20%
Task 2 (R&D)	500,000	80%	20%
Task 3 (Demonstration)	400,000	50%	50%
Task 4 (Outreach)	<u>100,000</u>	100%	0%
	\$2,000,000		

Federal share (\$) divided by Federal share (%) = Task Cost

Each task must be calculated individually as follows:

Task 1

\$1,000,000 divided by 80% = \$1,250,000 (Task 1 Cost)

Task 1 Cost minus federal share = Non-federal share

\$1,250,000 - \$1,000,000 = **\$250,000 (Non-federal share)**

Task 2

\$500,000 divided 80% = \$625,000 (Task 2 Cost)

Task 2 Cost minus federal share = Non-federal share

\$625,000 - \$500,000 = **\$125,000 (Non-federal share)**

Task 3

\$400,000 / 50% = \$800,000 (Task 3 Cost)

Task 3 Cost minus federal share = Non-federal share

\$800,000 - \$400,000 = **\$400,000 (Non-federal share)**

Task 4

Federal share = \$100,000

Non-federal cost share is not mandated for outreach = **\$0 (Non-federal share)**

The calculation may then be completed as follows:

<u>Task</u>	<u>Proposed Federal Share</u>	<u>Federal Share %</u>	<u>Required Non-federal Cost Share \$</u>	<u>Required Non-federal Cost Share %</u>	<u>Total Project Cost</u>
Task 1	\$1,000,000	80%	\$250,000	20%	\$1,250,000
Task 2	500,000	80%	125,000	20%	625,000
Task 3	400,000	50%	400,000	50%	800,000
Task 4	<u>100,000</u>	100%	<u>0</u>	0%	<u>100,000</u>
	\$2,000,000		\$775,000		\$2,775,000

Blended Cost Share %

Non-federal share (\$775,000) divided by Total Project Cost (\$2,775,000) = 27.9% (Non-federal)

Federal share (\$2,000,000) divided by Total Project Cost (\$2,775,000) = 72.1% (Federal)

Appendix D – Budget Justification

Using the “Object Class Categories” in the SF-424A Budget form, justify the costs in each category **for each budget period of the project.**

The SF424A Budget form and the Budget Justification must include both Federal (DOE), and Non-Federal (cost share) funds, thereby reflecting TOTAL PROJECT COSTS proposed.

For each sub-recipient with total project costs of \$100,000 or more, a separate SF-424A budget and budget justification form must be submitted. For sub-recipients with estimated costs less than \$100,000, provide what Statement of Project Objectives task(s) are being performed, the purpose/need for the effort, and a basis of the estimated costs that is considered sufficient for DOE evaluation.

All costs incurred by the Applicant’s sub-recipients, vendors, contractors, consultants and Federal Research and Development Centers (FFRDCs), should be entered only in section f. Contractual. All other sections are for the costs of the Applicant only.

Personnel

List costs solely for employees of the Applicant. Identify positions to be supported. Key personnel should be identified by title. All other personnel should be identified either by title or a group category. State the amounts of time (e.g., hours or % of time) to be expended, the composite base pay rate, total direct personnel compensation and identify the rate basis (e.g., actual salary, labor distribution report, technical estimate, state civil service rates, etc.). Identify the number of employees (on a Full Time Equivalent) that will be employed in each position or group category. Note the prevailing wage requirements in the ARRA (P.L. 111-5). See example below.

Task # and Title	Position Title	Budget Period 1			Budget Period 2			Budget Period 3			Project Total Hours	Project Total Dollars	Rate Basis
		Time (Hours)	Pay Rate (\$/Hr)	Total Budget Period 1	Time (Hours)	Pay Rate (\$/Hr)	Total Budget Period 2	Time (Hours)	Pay Rate (\$/Hr)	Total Budget Period 3			
Task 1. – Task Name	Sr. Engineer (1)	2000	\$85.00	\$170,000	200	\$50.00	\$10,000	200	\$50.00	\$10,000	2400	\$190,000	Actual Salary
Task 2 – Task Name	Process engineers (3)	6200	\$35.00	\$217,000	400	\$35.00	\$14,000	600	\$35.00	\$21,000	7200	\$252,000	Actual Salary
Task 3 – Task Name	Technician (1)	1800	\$20.00	\$36,000	0	\$0.00	\$0	0	\$0.00	\$0	1800	\$36,000	Actual Salary

Fringe

A federally approved fringe benefit rate agreement, or a proposed rate supported and agreed upon by DOE for estimating purposes is required if reimbursement for fringe benefits is requested. If a fringe benefit rate has been negotiated with, or approved by, a federal government agency, a copy of the latest rate agreement must be included with this application. If there is not a current, federally approved rate agreement negotiated and available, provide a copy of the proposal with the application. If selected, the rate agreement will be finalized during award negotiations. Calculate the fringe rate and enter the total amount in Section B, line 6.b. (“Fringe Benefits”) of form SF-424A.

IMPORTANT: Provide all fringe rates, along with a complete explanation and the full calculations used to derive the total fringe costs. If the total fringe costs are a cumulative amount of more than one calculation or rate application, the explanation and calculations should identify all rates used, along with the base they were applied to (and how the base was derived), and a total for each (along with grand total). The rates and how they are applied should not be averaged to get one fringe rate. **NOTE:** The fringe rate should be applied to both the Federal Share and Recipient Cost Share.

Travel

See example of travel detail below. Identify total Foreign and Domestic Travel as separate items. Purpose of travel are items such as professional conferences, DOE sponsored meetings, project management meetings, etc. Identify number of travelers, estimated cost per traveler, and duration of trip. The Basis for Estimating Costs could be items such as past trips, current quotations, Federal Travel Regulations, etc. All listed travel must be necessary for performance of the Statement of Project Objectives. NOTE: All projects should include travel for 1-2 travelers to a DOE project review during each year of the project. Each review will take approximately 2-3 days.

Purpose of travel	No. of Travelers	Depart From	Destination	No. of Days	Cost per Traveler	Cost per Trip	Basis for Estimating Costs
Budget Period 1							
Domestic Travel							
Visit to reactor mfr. to set up vendor agreement	2	Denver CO	Dallas TX	2	\$650	\$1,300	Internet prices
Domestic Travel subtotal						\$1,300	
International Travel							
Visit to technology provider to discuss IP agreement	2	Denver CO	Berlin Germany	5	\$4,000	\$8,000	Previous experience
International Travel subtotal						\$8,000	
Budget Period 1 Total						\$9,300	
(repeat as necessary for each Budget Period)							

Equipment

Equipment is generally defined as an item with an acquisition cost greater than \$5,000 and a useful life expectancy of more than one year. All proposed equipment should be identified, providing a basis of cost such as vendor quotes, catalog prices, prior invoices, etc., and briefly justifying its need as it applies to the Statement of Project Objectives. If it is existing equipment, and the value of its contribution to the project budget is being shown as cost share, provide logical support for the estimated value shown. If it is new equipment which will retain a useful life upon completion of the project, provide logical support for the estimated value shown. For equipment over \$50,000 in price, also include a copy of the associated vendor quote or catalog price list. See example below.

Equipment Item	Qty	Unit Cost	Total Cost	Basis of Cost	Justification of need
Budget Period 1					
EXAMPLE ONLY!!! Thermal shock chamber	2	\$20,000	\$40,000	Vendor Quote	Reliability testing of PV modules- Task 4.3
Budget Period 1 Total			\$40,000		
(repeat as necessary for each Budget Period)					

Supplies

Supplies are generally defined as an item with an acquisition cost of \$5,000 or less and a useful life expectancy of less than one year. Supplies are generally consumed during the project performance. Further definitions can be found in 10 CFR 600.

Proposed supplies should be identified, providing a basis of cost such as vendor quotes, catalog prices, prior invoices, etc., and briefly justifying the need for the Supplies as they apply to the Statement of Project Objectives. Note that Supply items must be direct costs to the project at this budget category, and

not duplicative of supply costs included in the indirect pool that is the basis of the indirect rate applied for this project.

General Category of Supplies	Qty	Unit Cost	Total Cost	Basis of Cost	Justification of need
Budget Period 1					
EXAMPLE ONLY!!! Wireless DAS components	10	\$360.00	\$3,600	Catalog price	For Alpha prototype - Task 2.4
Budget Period 1 Total			\$3,600		
(repeat as necessary for each Budget Period)					

Contractual

The applicant must provide and justify all costs related to sub-recipients, vendors, contractors, consultants and FFRDC partners. See example below.

Sub-recipients (partners, sub-awardees):

For each sub-recipient with total project costs of \$100,000 or more, a separate SF-424A budget and budget justification form must be submitted. For sub-recipients with estimated costs less than \$100,000, provide what Statement of Project Objectives task(s) are being performed, the purpose/need for the effort, and a basis of the estimated costs that is considered sufficient for DOE evaluation.

Vendors (includes contractors and consultants):

Identify all vendors, contractors and consultants supplying commercial supplies or services used to support the project. The support to justify vendor costs (in any amount) should provide the purpose for the products or services and a basis of the estimated costs that is considered sufficient for DOE evaluation.

Federal Research and Development Centers (FFRDCs):

For FFRDC partners, the applicant should provide a Field Work Proposal (if not already provided with the original application), along with the FFRDC labor mix and hours, by category and FFRDC major purchases greater than \$25,000, including Quantity, Unit Cost, Basis of Cost, and Justification.

Sub-Recipient Name/Organization	Purpose/Tasks in SOPO	Budget Period 1 Costs	Budget Period 2 Costs	Budget Period 3 Costs	Project Total
EXAMPLE ONLY!!! XYZ Corp.	Partner to develop optimal fresnel lens for Gen 2 product - Task 2.4	\$48,000	\$32,000	\$16,000	\$96,000
	Sub-total	\$48,000	\$32,000	\$16,000	\$96,000
Vendor Name/Organization	Product or Service, Purpose/Need and Basis of Cost (Provide additional support at bottom of page as needed)	Budget Period 1 Costs	Budget Period 2 Costs	Budget Period 3 Costs	Project Total
EXAMPLE ONLY!!! ABC Corp.	Vendor for developing custom robotics to perform lens inspection, alignment, and placement (Task 4). Required for expanding CPV module mfg. capacity. Cost is from competitive quotes.	\$32,900	\$86,500		\$119,400
	Sub-total	\$32,900	\$86,500	\$0	\$119,400
FFRDC Name/Organization	Purpose	Budget Period 1 Costs	Budget Period 2 Costs	Budget Period 3 Costs	Project Total
					\$0
	Sub-total	\$0	\$0	\$0	\$0
Total Contractual		\$80,900	\$118,500	\$16,000	\$215,400

Construction

Construction, for the purpose of budgeting, is defined as all types of work done on a particular facility, including erecting, altering, or remodeling. Construction conducted by the award recipient should be justified in this category. Any construction work that is performed by a vendor or subrecipient to the award recipient should be entered under “Contractual.”

Identify all proposed construction, providing a basis of cost such as engineering estimates, prior construction, etc., and briefly justify its need as it applies to the Statement of Project Objectives. For major endeavors, a copy of the engineering estimate or quote should also be provided. See example below.

Overall description of construction activities:			
Example Only!!! - Build wind turbine platform			
General Description	Cost	Basis of Cost	Justification of need
Budget Period 1			
Three days of excavation for platform site EXAMPLE ONLY!!!	\$28,000	Engineering estimate	Site must be prepared for construction of platform.
Budget Period 1 Total	\$28,000		
(repeat as necessary for each Budget Period)			

Other Direct Costs

Other direct costs are direct cost items required for the project which do not fit clearly into other categories, and are not included in the indirect pool for which the indirect rate is being applied to this project. Basis of cost are items such as vendor quotes, prior purchases of similar or like items, published price list, etc.

General description	Cost	Basis of Cost	Justification of need
Budget Period 1			
EXAMPLE ONLY!!! Grad student tuition	\$16,000	Established UCD costs	Support of graduate students working on project
Budget Period 1 Total	\$16,000		
(repeat as necessary for each Budget Period)			

Indirect Costs

A federally approved indirect rate agreement, or rate proposed supported and agreed upon by DOE for estimating purposes is required if reimbursement of indirect benefits is requested. If there is a federally approved indirect rate agreement, a copy must be provided with this application and if selected, must be provided electronically to the Contracting Officer for this project. If there is no current, federally approved indirect rate agreement or if the federally approved indirect rate agreement has been changed or updated, a rate proposal must be included with the application. If selected, the rate agreement will be finalized during award negotiations. Calculate the indirect rate dollars and enter the total in the Section B., line 6.j. (Indirect Charges) of form SF 424A.

IMPORTANT: Provide a complete explanation and the full calculations used to derive the total indirect costs. If the total indirect costs are a cumulative amount of more than one calculation or rate application, the explanation and calculations should identify all rates used, along with the base they were applied to (and how the base was derived), and a total for each (along with grand total). The rates and how they are

applied should not be averaged to get one indirect cost percentage. NOTE: The indirect rate should be applied to both the Federal Share and Recipient Cost Share.

Cost Share

A detailed presentation of the cash or cash value of all cost share proposed for the project must be provided. Identify the source and amount of each item of cost share proposed by the Applicant and each sub-recipient. Letters of commitment must be submitted for all third party cost share (other than award recipient).

Note that “cost-share” is not limited to cash investment. Other items that may be assigned value in a budget as incurred as part of the project budget and necessary to performance of the project, may be considered as cost share, such as: contribution of services or property; donated, purchased or existing equipment; buildings or land; donated, purchased or existing supplies; and/or unrecovered personnel, fringe benefits and indirect costs, etc. For each cost share contribution identified as other than cash, identify the item and describe how the value of the cost share contribution was calculated.

Funds from other Federal sources MAY NOT be counted as cost share. This prohibition includes FFRDC sub-recipients. Non-Federal sources include private, state or local Government, or any source not originally derived from Federal funds.

Fee or profit will not be paid to the award recipients or subrecipients of financial assistance awards. Additionally, foregone fee or profit by the applicant shall not be considered cost sharing under any resulting award. Reimbursement of actual costs will only include those costs that are allowable and allocable to the project as determined in accordance with the applicable cost principles prescribed in 10 CFR 600.127, 10 CFR 600.222 or 10 CFR 600.317. Also see 10 CFR 600.318 relative to profit or fee. See example below.

Organization/Source	Type (cash or other)	Cost Share Item	Budget Period 1 Cost Share	Budget Period 2 Cost Share	Budget Period 3 Cost Share	Total Project Cost Share
ABC Company EXAMPLE ONLY!!!	Cash	Project partner ABC Company will provide 40 PV modules for product development at 50% off the of the retail price of \$680	\$13,600			\$13,600
		Totals	\$0	\$0	\$0	\$0
Total Project Cost:		\$312,300	Cost Share Percent of Award:			0.0%