NOTICE

Modifications to this Funding Opportunity Announcement (FOA) may have been made since this version was posted. Applicants are strongly advised to consult the FOA version posted on www.FedConnect.com, the official application website, for the latest changes regarding the application materials, dates, and other requirements.

The FedConnect system can be accessed through the following steps:

1. Go to http://www.FedConnect.net/
2. Click on "Search Public Opportunities"
3. Select "Reference Number" in the Search Criteria drop down box and then enter the Reference Number of the funding opportunity you are interested in (DE-FOA-XXXXXXX), followed by clicking the "Search" button
4. Click on the Title hyperlink after search results are displayed
5. On the right side of the screen, click on "BODY" under the "Solicitation" or "Amendment" folder; if multiple amendments exist, click on the most recent award amendment for the latest changes.

If you are new to the Federal grant application process, it can take 21 days or more to complete all of the registration processes needed to submit questions or application. These activities include acquiring a DUNS number, completing a Central Contract Registration (CCR), and FedConnect.com registration. Hence, if you are considering applying for this or another Funding Opportunity, we recommend beginning the registration process as soon as possible.

For further assistance throughout the application process, contact the following numbers:

- **General inquiries:** 1-888-DOE-RCVY (1-888-363-7289), https://recoveryclearinghouse.energy.gov/
- **Central Contract Registration (CCR) system**: 1-888-227-2423, http://www.ccr.gov/Help.aspx
- **FedConnect**: 1-800-899-6665, support@fedconnect.net
- **Specifics on FOA**: see "Questions" portion of the FOA

FINANCIAL ASSISTANCE
FUNDING OPPORTUNITY ANNOUNCEMENT

U.S. Department of Energy
Golden Field Office

Recovery Act: Geothermal Technologies Program

Topic Area 1: Validation of Innovative Exploration Technologies

Topic Area 2: Geothermal Energy Production from (A) Low Temperature Resources, (B) Coproduced Fluids from Oil and Gas Wells, and (C) Geopressured Resources

Topic Area 3: Geothermal Data Development, Collection, and Maintenance

Funding Opportunity Announcement Number: DE-FOA-0000109

Announcement Type: Initial

CFDA Number: 81.087

Issue Date:	**05/27/2009**
Final Application Due Date:	**07/22/2009, 11:59 PM Eastern Time**

NOTE: Questions regarding the content of this announcement must be submitted through FedConnect.net. Applicants must be registered in FedConnect to submit or view Questions.

APPLICATION SUBMISSION, FEDCONNECT QUICK START GUIDE,

REGISTRATION REQUIREMENTS, AND SUBMISSION OF QUESTIONS

1. **Application Submission**
   APPLICATIONS MUST BE SUBMITTED THROUGH FEDCONNECT AT https://www.fedconnect.net/ TO BE CONSIDERED FOR AWARD. The Adobe Application Package identified in Part IV. C. is posted as an attachment to this Funding Opportunity Announcement (FOA) in FedConnect. It is the responsibility of the applicant, prior to the Application due date and time, to verify successful transmission.

   Organizations with system-to-system capabilities with Grants.gov for their submissions may continue to use their systems, and their applications will be accepted in Grants.gov to be considered for award.

2. **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 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. Submission via FedConnect constitutes the authorized representative's electronic signature

3. **FedConnect Quick Start Guide**
   Use this guide to assist you with FedConnect:
   https://www.fedconnect.net/FedConnect/PublicPages/FedConnect_Ready_Set_Go.pdf

4. **Registration Requirements**

   To submit an application in response to this FOA, Applicants must be registered with FedConnect. Before you can register with FedConnect, you will need the following:

   A. Your organization's DUNS (including plus 4 extension if applicable). If you do not know your organization's DUNS or if your organization does not have a DUNS, you can search for it 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 FedConnect registration.

   C. Possibly, your organization's CCR MPIN. If you are the first person from your organization to register, FedConnect will need to create an organization account. Only a person who knows your organization's CCR MPIN can do this. To find out who this is in your organization, go to http://www.ccr.gov/ and click **Search CCR**. Once you've found your organization, locate the Electronic Business Point of Contact.

After the initial FedConnect account is created, employees can register themselves without the MPIN. If you are not sure whether your organization has an account with FedConnect, complete the registration form and FedConnect will let you know if your organization is registered. (PLEASE REFER TO THE FEDCONNECT QUICK START GUIDE).

Applicants who are not registered with CCR and FedConnect, should allow at least 21 days to complete these requirements. It is suggested that the process be started as soon as possible. For those Applicants already registered in CCR, the CCR registration must be updated annually at http://www.ccr.gov/Renew.aspx.

5. Adobe Application Package - Instructions for Completion of Forms

The Adobe Application Package was intended to be utilized in Grants.gov; however, the DOE is currently utilizing it with FedConnect. Please disregard any information within the Adobe Application Package regarding use with Grants.gov; specifically, DO NOT use the "Save & Submit" button in the Adobe Application Package, since that button is only used when submitting an application in Grants.gov.

A. Copy the Adobe Application Package to your desktop;

B. Open the Adobe Application Package, and first complete the SF-424 Application, Project/Performance Site Location(s) form, and SF-LLL form (if applicable) which are all part of the Adobe Application Package. To start this process, simply click on the form's name to select the item and then click on the => button. This will move the document to the appropriate "Documents for Submission" box and the form will be automatically added to your application package. Open the forms by selecting the form name and clicking on the "Open Form" button, then complete the required data fields.

C. Identify the remaining forms required to be completed, as identified in Part IV of the Announcement. Prepare and save these forms to your desktop (e.g., project narrative, resume file, budget file, …). Once finalized and files are named as indicated in Part IV of the Announcement, upload (attach) these files individually within the Adobe Application Package by clicking on "Add Mandatory Other Attachment" to attach the Project Narrative and clicking on "Add Optional Other Attachment" to attach the remaining files;

D. Once all completed files have been attached within the Adobe Application Package, save the Adobe Application Package to your desktop, and submit to FedConnect, following the steps outlined in the FedConnect Quick Start Guide at: https://www.fedconnect.net/Fedconnect/PublicPages/FedConnect_Ready_Set_Go.pdf Note that applications may be submitted to multiple Topic Areas; however, SEPARATE applications must be submitted for each Topic Area. If submitting to multiple Topic Areas, save the Adobe Application Package in a single file, using up to 10 letters of the Applicant's Organization Name as the file name (e.g., UCLA). 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., UCLA-1-Topic1).

Note that it is the responsibility of the applicant, prior to the Application due date and time, to verify successful transmission in FedConnect.

6. Questions

Questions regarding the content of the announcement must be submitted through the FedConnect portal. You must register with FedConnect to submit questions and to receive 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 distributed.

Questions pertaining to the submission of applications through FedConnect should be directed by e-mail to support@FedConnect.net or by phone to FedConnect Support at 1-800-899-6665.

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PART I – FUNDING OPPORTUNITY DESCRIPTION

A. INTRODUCTION: AMERICAN RECOVERY AND REINVESTMENT ACT OF 2009

Projects under this FOA will be issued with funds appropriated by the American Recovery and Reinvestment Act of 2009, Pub. L. 111-5, (Recovery Act or Act). The Recovery Act's purposes are to stimulate the economy and to create and retain jobs. The Act gives preference to activities that can be started and completed expeditiously, including a goal of using at least 50 percent of the funds made available by it for activities that can be initiated not later than June 17, 2009. Due to the schedule of this FOA, the preceding date does not impact applications to this FOA. Accordingly, special consideration will be given to projects that promote and enhance the objectives of the Act, especially job creation, preservation and economic recovery, in an expeditious manner.

Be advised that special terms and conditions may apply to projects funded by the Act relating to:

- Reporting, tracking and segregation of incurred costs;
- Reporting on job creation and preservation;
- Publication of information on the Internet;
- Access to records by Inspectors General and the Government Accountability Office;
- Prohibition on use of funds for gambling establishments, aquariums, zoos, golf courses or swimming pools;
- Ensuring that iron, steel and manufactured goods are produced in the United States;
- Ensuring wage rates are comparable to those prevailing on projects of a similar character;
- Protecting whistleblowers and requiring prompt referral of evidence of a false claim to an appropriate inspector general; and
- Certification and Registration.

These special terms and conditions will be based on provisions included in Titles XV and XVI of the Act. The exact terms and conditions will be provided as soon as possible. The currently available Special Provisions are located at: http://management.energy.gov/business_doe/business_forms.htm.

The Office of Management and Budget (OMB) has issued Initial Implementing Guidance for the Recovery Act. See M-09-10, Initial Implementing Guidance for the American Recovery and Reinvestment Act of 2009. OMB will be issuing additional guidance concerning the Act in the near future. Applicants should consult the DOE website, www.energy.gov, the OMB website http://www.whitehouse.gov/omb/, and the Recovery website, www.recovery.gov, regularly to keep abreast of guidance and information as it evolves.

Recipients of funding appropriated by the Act shall comply with requirements of applicable Federal, State, and local laws, regulations, DOE policy and guidance, and instructions in this FOA, unless relief has been granted by DOE. Recipients shall flow down the requirements of applicable Federal, State and local laws, and regulations, DOE policy and guidance, and instructions in this FOA to subrecipients at any tier to the extent necessary to ensure the

recipient's compliance with the requirements.

Be advised that Recovery Act funds can be used in conjunction with other funding, as necessary to complete projects, but tracking and reporting must be separate to meet the reporting requirements of the Recovery Act and related OMB Guidance. Applicants for projects funded by sources other than the Recovery Act should plan to keep separate records for Recovery Act funds and to ensure those records comply with the requirements of the Act. Funding provided through the Recovery Act that is supplemental to an existing grant is one-time funding.

Applicants should begin planning activities for their first tier subawardees, including obtaining a DUNS number (or updating the existing DUNS record), and registering with the Central Contractor Registration (CCR). The extent to which subawardees will be required to register in CCR will be determined by OMB at a later date.

B. DESCRIPTION

Background

The U.S. Department of Energy's (DOE) Geothermal Technologies Program (GTP) intends to continue its partnership with the geothermal community on geothermal systems research, exploration, demonstration, and development throughout the United States. This three-topic FOA will focus on areas associated with geothermal energy as outlined in the Energy Independence and Security Act of 2007 (EISA), Sections 613 and 616. This FOA will also address section 931(a)(2)(C) of the Energy Policy Act (EPAct) of 2005. Funding will be made available through the American Recovery and Reinvestment Act of 2009.

Topic Area 1: Validation of Innovative Exploration Technologies

EISA Section 613 addresses the demonstration of innovative site characterization and/or drilling exploration technologies. GTP's goal is to reduce the high level of risk during the early stages of geothermal project development by funding the validation of innovative exploration activities to locate undiscovered geothermal systems and increase the reliability of site characterization to prioritize target sites for energy production (see page 5).

Topic Area 2: Geothermal Energy Production from (A) Low Temperature Resources, (B) Coproduced Fluids from Oil and Gas Wells, and (C) Geopressured Resources

EISA Section 616 addresses geothermal energy production from oil and gas fields as well as the recovery and production of geopressured resources, while EPAct 2005 Section 931(a)(2)(C) includes authorization for geothermal energy production from low temperature geothermal resources. GTP's goal is to demonstrate the technical and economic feasibility of geothermal energy production from these non-conventional geothermal resources (see page 9).

Topic Area 3: Geothermal Data Development, Collection, and Maintenance

EPAct 2005 Section 931(a)(2)(C) includes authorization for continued data submission to the National Geothermal Data System (NGDS) created from Funding Opportunity Announcement DE-PS36-08GO98020. GTP's goal is to develop, collect, and maintain data for the entire United States (i.e., the 50 states, the District of Columbia, and the

territories and commonwealths of the U.S.) for the NGDS in order to make geothermal data available to the public and reduce the risk associated with the initial stages of geothermal project development. (see page 13).

The Program seeks to maintain an aggressive schedule for project completion as well as the creation and maintenance of jobs. Applications with more aggressive schedules for completion, greater number of jobs created, cost share above the minimum level required, and cooperation between industry, accredited educational institutions, and/or Indian Tribes/Native Corporations may be given greater consideration.

A single Principal Investigator or organization may submit separate applications to multiple topic areas. **However, a single Principal Investigator or organization may not submit a single application that addresses multiple topic areas. Each application will be evaluated according to its respective merit review criteria. Therefore, applicants will be required to clearly declare which topic area they are applying for within each application. Applications that address more than one Topic Area will not pass the Initial Review.** Also, DOE reserves the right to make one award, multiple awards, or no awards in any given topic area.

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://www1.eere.energy.gov/geothermal/ for more information). The data shall be converted to a common file format (Word, PDF, .jpg, etc.) if necessary. DOE must also be provided with reasonable access to the project site.

Please reference the table on the next page for a summary of key parameters for each Topic Area.

Topic Area Summary

Topic Area	Total Estimated Federal Funding	Anticipated Award Type	Expected Number of Awards	Anticipated Award Size	Award Ceiling / Floor	Period of Performance
1 - Validation of Innovative Exploration Technologies	**$100 million**	**Grants or Cooperative Agreements**	**Up to 40**	**$3 million - $5 million**	**$5 million / None**	**Up to 3 years**
2 - Geothermal Energy Production from (A) Low Temperature Resources, (B) Coproduced Fluids from Oil and Gas Wells, and (C) Geopressured Resources	**$50 million**	**Grants or Cooperative Agreements**	**Up to 20**	**-**	**-**	**Up to 3 years**
Subtopic Area A: Low Temperature Resources	-	-	-	$1.5 million	$2 million / None	-
Subtopic Area B: Geothermal Fluids Coproduced from Oil and/or Gas Wells	-	-	-	$1.5 million	$2 million / None	-
Subtopic Area C: Geopressured Gas Resources	-	-	-	$5 million	$5 million / None	-
3 - Geothermal Data Development, Collection, and Maintenance	**$20 million**	**Grants or Cooperative Agreements**	**Up to 5**	**$1 million - $20 million**	**$20 million / None**	**Up to 3 years**

Detailed Topic Area Descriptions are included on the following pages.

Topic Area 1
Validation of Innovative Exploration Technologies

DOE's objective is to reduce the high level of risk during the early stages of geothermal project development by funding the validation of innovative exploration activities to locate undiscovered geothermal systems. DOE seeks to increase the reliability of site characterization to prioritize target sites for energy production. Innovative site characterization techniques include but are not limited to geophysical and geochemical studies, geologic models and tools, temperature gradient holes, remote sensing, and data processing. **Applications must include the exploration, siting, drilling, and characterization of a portfolio of at least two (2) wells utilizing innovative exploration techniques. Collecting at least 300 feet of core through the target interval is required.** In the Project Narrative, applicants should clearly identify the current state of the art, provide supporting evidence for proposed innovative techniques, and provide a technology transfer plan for replicability at other sites.

The intent of this Topic Area is to validate innovation exploration technologies to reduce upfront exploration risk in geothermal development. Validation will be done by utilizing innovative methods to identify undiscovered geothermal resources and confirming geothermal resource capacity by drilling and characterizing slimhole[1] geothermal exploration wells. Production wells[2] are also allowable, however – drilling of a production well generally requires that an Environmental Assessment (EA) be completed prior to drilling. EAs typically require several months and the expenditure of tens of thousands of dollars from the project budget. Per Recovery Act program policy factor (#6) on page 15, Recovery Act funds are intended to be utilized to create/preserve jobs in an expeditious manner. Therefore, production wells that require EAs may not satisfy this program policy factor. It is NOT the intent of this Topic Area to fund the drilling of bore holes for geothermal heat pumps. **Any costs incurred prior to selection for negotiation of award (such as temperature gradient well drilling, collection of rock/core cuttings, etc.) are not allowable project costs.**

Projects may consist of up to three phases, and projects must include plans to drill at least two (2) wells. Phases II and III may be completed in parallel if necessary. **Applicants must provide cost share detail by phase within applications.** Minimum recipient cost share by phase is detailed in Part III.B on page 19.

The total Federal share for each project funded shall not exceed $5 million. If funds remain following the completion of all phases for two wells, the funds can be applied to another well in a different area of the same geothermal field under the same guidelines as the second well until funds are completely expended.

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[1] Slim-hole is defined as a hole having a diameter less than 6 inches through the productive interval (hole diameters may be larger near the surface).

[2] Production well is any well with appropriate size and tubular construction that has the ability to supply economically recoverable heat.

Within each phase, compliance with all environmental, health, safety and legal regulations must be maintained, which may include securing necessary permits and approvals, performing necessary site, archaeological and other surveys, etc.

Phase I – Resource Evaluation

For applicants who have not completed Phase I for the proposed site, provide the following information within the Project Narrative. Technical requirements for Phase I activities include utilization of innovative exploration technologies to identify a potential geothermal resource, define a drilling target within the field and optimally site confirmation wells to access that target. Phase I exploration work may include any appropriate combination of innovative, improved or adapted geologic field work and interpretation, geophysical survey acquisition and processing, geochemistry sampling and analyses, geomechanical studies, drilling of shallow temperature gradient wells, remote sensing, any other appropriate surface studies, acquisition and re-analysis of previous geophysical surveys, and integration of the results. The minimum technical requirement for Phase I is to select an optimum target location using innovative exploration techniques for the exploration wells to be drilled in Phase II.

For applicants who have already completed Phase I for the proposed site, provide the following information within the application as an attachment to the Project Narrative. Specifically label any proprietary data provided within the application. Otherwise, this information should be documented in a Phase I report. In conjunction with the Phase I report, the following minimum data package will be collected and provided to DOE to be made public:

- All exploration data that led to the proposal of the site as a new geothermal resource are required. Results of all geophysical, geological, geochemical, and geomechanical surveys and analyses performed as a part of this project are required.
- All reports, plans, permits, licenses, and other items required by governmental regulatory agencies for the performance of this work, the agency whose requirement the item fulfills, and the actual or projected submittal and agency approval dates will be identified. Note that any costs incurred for these activities prior to selection for negotiation of award will not be considered project costs, even though the effort served as a prerequisite for this task.
- A final compilation of the geologic/geothermal reservoir model that is developed during Phase I exploratory activities and a target location for the well(s) based upon the model.
- Technology performance data on the innovative exploration technology/method utilized.

Phase II – Drilling

Technical requirements for Phase II activities include drilling of two wells and appropriate evaluations, sampling, and studies to characterize the geologic environment contacted by the wells. Phase II work may include site access development, rig mobilization and demobilization, drilling, mud logging, casing and cementing, coring, running geophysical or production logs, performing limited flow testing, fluid sampling, and other appropriate well-related activities. The minimum technical requirement for Phase II is that the resource be accessed by the wells for subsequent Phase III testing and assessment work and to gather information to confirm the geologic/geothermal conceptual model of the resource. This information should be documented in a Phase II report.

Well data will be collected from the top of both wells to the total depth of the wells. In order to receive funding under this program, wells must not be drilled until after selection for award and compliance with NEPA regulations. **Collecting at least 300 feet of core through the target interval is required.** Non-proprietary data collected must be transferred to DOE as soon as practical for inclusion within the National Geothermal Data System.

In conjunction with the Phase II report, the following minimum data package should be provided to DOE, which will be considered non-proprietary:

- Daily drilling reports, drilling and casing program, and well survey plan;
- A lithologic drilling log;
- Lost circulation amounts, times, and depths;
- Well pressure and temperature data;
- All logs run in the wells; and
- Data and results of all injection or flow tests of the wells.

Phase III – Well Testing

Technical requirements for Phase III testing and assessment activities include the acquisition/rental of appropriate well and surface equipment for an extended flow test, appropriate logging, sampling and monitoring of the testing, interpretation of the test data, integration of the well-test results with the previous geological, geothermal, and hydrological models, validation of innovative exploration technology/method, and final assessment of the site capacity for heat extraction from the geothermal resource. **One of DOE's goals is to quantify the amount of additional resources discovered by this drilling program. Therefore, DOE requires an estimated capacity (in MWe) of the wells and overall geothermal reservoir from an independent expert, selected by DOE. The independent expert costs will be incurred by DOE and are not included in the project costs.** The recipient shall be solely responsible to restore the well sites in accordance with governing state and Federal regulations. Site restoration cost should be included as a part of Phase III.

In conjunction with the final report, the following information should be provided to DOE, which will be considered non-proprietary:

- A summary of the findings of the capacity of the wells/reservoir by the independent expert
- Results from all well tests, including flow rate and pressures from down-hole measurements in the producing zone and at the surface
- Data from representative samples of formation water collected for chemical analysis.

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: Technology Innovation and Validation **Weight: [30%]**

- Degree and documentation of innovation of proposed exploration techniques

- Extent that proposed exploration techniques will advance technologies necessary to lower geothermal exploration risk
- Quality, clarity and completeness of technology validation and technology transfer plans

Criterion 2: Project Description and Implementation Plan **Weight: [30%]**

- Level of technical quality, clarity, and completeness of application including operations description, project budget, timeline, drilling plan with cost estimate, well completions, and data acquisition
- Clarity and completeness of a plan to address potential risks and liabilities (e.g., technical, financial, and environmental) that are associated with the exploration project and drilling plan
- Likelihood of achieving project objectives through realistic milestones, timely schedule, and task structure

Criterion 3: Geothermal Resource Potential **Weight: [20%]**

- Likelihood that resultant data will reveal an undiscovered geothermal resource as evidenced by the description of proposed location(s) and the target depth(s)
- Adequacy of the geologic model, including existing data and rationale for selecting this site and target depth
- Adequacy of discussion/map of the exploration site showing the land ownership of the proposed site and adjacent property
- Soundness of the discussion regarding permitting and site access considerations including clear ownership, in-place permits, or clear permitting path

Criterion 4: Project Team and Resources **Weight: [20%]**

- Capabilities of key project personnel to comprehensively address all aspects of the proposed project
- Level of participation by project participants as evidenced by letter(s) of commitment
- Demonstrated availability of equipment, facilities, project site, analytic support and other necessary resources for performing the proposed project and adequacy of resources to accommodate the proposed project
- Adequacy of plan to provide non-proprietary data to the National Geothermal Data System

<u>Other Selection Factors</u>

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

1. Technological diversity of projects
2. Geographic diversity of projects
3. Proposed cost share above the minimum level required
4. Degree of student involvement from academic institutions

5. Projects in high electricity cost regions and rural or remote areas, or projects proposed by Indian Tribes/Tribal Energy Resource Development Organizations or Groups
6. Selection of applications which promote and enhance the objectives of the American Recovery and Reinvestment Act of 2009, P.L. 111-5, especially job creation, and/or preservation and economic recovery in an expeditious manner

Topic Area 2
Geothermal Energy Production from (A) Low Temperature Resources, (B) Coproduced Fluids from Oil and Gas Wells, and (C) Geopressured Resources

DOE's goal is to promote the development and commercial application of energy production from the following Subtopic Areas:

A. Low-Temperature Geothermal Fluids at temperatures between 150-300° Fahrenheit (F)

B. Geothermal Fluids Coproduced from productive, unproductive, or marginal oil and/or gas wells (or other hydrocarbon production). Per EISA Section 616.b, projects utilizing coproduced fluids should:
    1. include not less than 5 oil or gas well sites per project award;
    2. use a range of oil or gas well hot water source temperatures from 150° F to 300° F;
    3. cover a range of sizes up to one megawatt;
    4. cover a range of sites;
    5. be able to be replicated at a wide range of sites;
    6. facilitate identification of optimum technologies among competing alternatives;
    7. include business commercialization plans that have the potential for production of equipment at high volumes and operation and support at a large number of sites; and
    8. satisfy other criteria that the Secretary determines are necessary to carry out the program and collect necessary data and information.

C. Geopressured Gas Resources that show potential for economic recovery of the heat, kinetic energy, and/or gas

The intent of this Topic Area is to technically and economically demonstrate energy production (i.e. electricity generation or direct use) from nonconventional geothermal resources. It is NOT the intent of this Topic Area to fund the drilling of new exploratory, production, or injection wells, nor bore holes for geothermal heat pumps. However, DOE funds may be applied to rework activities on existing wells. **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.**

To accomplish this, DOE would like to collaborate with leaseholders, developers, owners,

operators, academics, and/or other partners on projects to install, operate, and report on the performance of geothermal energy projects that meet the criteria above **for Subtopic Areas A (Low-Temperature Geothermal Fluids) and B (Coproduced Geothermal Fluids).** Projects may also include plans for cogeneration of thermal energy and electricity, cascading geothermal systems, or the combined use of geothermal with other renewable energy technologies.

Projects for Subtopic Area A (Low-Temperature Geothermal Fluids) may be composed of the following three phases. In order to ensure timely completion of the project, Phase A1 shall not exceed 10% of the total project costs and should be completed within 6-12 months.

Phase A1 – Feasibility Study and Engineering Design

The objectives of Phase A1 are to conduct a feasibility study to ensure that energy can be produced economically at the site, fully design/engineer the equipment necessary for energy production, and characterize the target geothermal resource. Phase A1 activities will also include necessary and appropriate site engineering studies, appropriate feasibility studies to determine whether the demonstration can be replicated, and analysis regarding design or adaptation of existing technology for site specific circumstances or conditions. This phase shall not exceed 10% of the total project cost. Regulatory and environmental permitting must also be completed prior to the end of this phase. A program review may be included at the end of this phase.

Phase A2 – Procurement, Installation, and Commissioning of Equipment

The objectives of Phase A2 are to procure and install the equipment necessary to harness geothermal energy and to report data on capital costs. Data to be reported to DOE shall include direct and indirect equipment costs (or purchase of off-the-shelf units) and installation costs, as well as direct and indirect jobs created by the project. Supporting activities such as reservoir engineering or technology development may be included.

Phase A3 – Operation & Maintenance (O&M)

The objective of Phase A3 is to operate the geothermal energy facility for a minimum of two years and to report on its economic, performance, and operating characteristics. The final report shall include a validation of technical and economic assumptions and documentation of lessons learned.

Projects for Subtopic Area B (Coproduced Geothermal Fluids) may be composed of the following three phases. In order to ensure timely completion of the project, Phase B1 shall not exceed 10% of the total project costs and should be completed within 6-12 months.

Phase B1 – Feasibility Study and Engineering Design

The objectives of Phase B1 are to conduct a feasibility study to ensure that energy can be produced economically at the site, fully design/engineer the equipment necessary for energy production, and characterize the target geothermal resource. Phase B1 activities will also include necessary and appropriate site engineering studies, appropriate feasibility studies to determine whether the demonstration can be replicated, and analysis regarding design or adaptation of existing technology for site specific circumstances or conditions. This phase shall not exceed 10% of the total project cost. Regulatory and environmental permitting must also be completed prior to the end of this phase. A program review may be included at

the end of this phase.

Phase B2 – Procurement, Installation, and Commissioning of Equipment
The objectives of Phase B2 are to procure and install the equipment necessary to harness geothermal energy and to report data on capital costs. Data to be reported to DOE shall include direct and indirect equipment costs (or purchase of off-the-shelf units) and installation costs, as well as direct and indirect jobs created by the project. Supporting activities such as reservoir engineering or technology development may be included.

Phase B3 – Operation & Maintenance (O&M)
The objective of Phase B3 is to operate the geothermal energy facility for a minimum of two years and to report on its economic, performance, and operating characteristics. The final report shall include a validation of technical and economic assumptions and documentation of lessons learned.

For Subtopic Area C, DOE will partner with selected applicants to implement a program to support the research, development, demonstration, and commercial application of cost-effective techniques to produce energy from geopressured resources. Applications to this subtopic area should include completed preliminary engineering designs and feasibility studies for geopressured resources production and recovery facilities. Feasibility studies should include an estimate of the capacity of the geopressured resource, the geothermal model, and economic analysis including capital and operating costs. The preliminary engineering design should include process unit design/costing and a bill of materials.

Projects for Subtopic Area C may be composed of the following phases. In order to ensure timely completion of the project, Phase C1 shall not exceed 10% of the total project costs and should be completed within 6-12 months.

Phase C1 – Detailed Design and Construction Plans
The objective of this phase is to complete the detailed engineering, architectural, and technical plans needed to support construction of new designs including any unfinished elements of the preliminary engineering and/or feasibility study. Regulatory and environmental permitting must also be completed prior to the end of this phase.

At the end of Phase C1, DOE will conduct a go/no go review based on the final design plans. Specifically, GTP will only award cost-shared development and construction grants for demonstration geopressured production facilities that show potential for the economic recovery of heat, kinetic energy and gas resources from geopressured resources.

Phase C2 – Construction and Demonstration
Based upon a DOE review of the final design plans and a go decision in Phase C1, applicants will construct and begin operation of geopressured production facilities that show potential for economic recovery of the heat, kinetic energy and gas resources from geopressured resources. Reporting will be completed on the power plant's economic, performance, and operating characteristics including direct and indirect equipment costs (or purchase of off-the-shelf units) and installation costs, as well as direct and indirect jobs created by the project. Supporting activities such as reservoir engineering or technology development may

also be included.

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: Non-Technical Considerations **Weight: [40%]**

Note: Per the first two bullets of this Criterion, applications including sufficient legal documentation[3] 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. Applicants who provide evidence of required permits, regulatory approvals, environmental assessments/environmental impact statements will be rated higher than those without. If required permits have not been obtained, applicants with clear permitting plans to obtain required documents within 3 months from notification of selection will be rated higher than those without.

- 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
- Adequacy of site infrastructure and applicant/partner resources
    - **For Subtopic Area B only:** inclusion of not less than five well sites, proposed plant capacities up to 1 MWe, and identification of optimum power conversion technologies
- Likelihood of achieving project objectives in an expeditious manner through logical task structure and reasonableness of the schedule (completion of Phases A1, B1, or C1 within 6-12 months) and milestones including Gantt Chart and risk mitigation plan
- Adequacy of feasibility study including an assessment of potential jobs, cost/benefit analysis, avoided cost of electricity, and project budget

Criterion 2: Technical Considerations **Weight: [30%]**

- Adequacy and completeness of the Statement of Project Objectives (SOPO) including a descriptions of how all objectives will be met
- Technical feasibility of utilizing energy contained in low temperature, coproduced, or geopressured geothermal fluids
- Level of innovation of the proposed project above current state-of-the-art
- **For Subtopic Area B only:** Ability to replicate results of the project at a wide range of geographic sites, including assumptions and quantitative data, and inclusion of business commercialization plans that have the potential for production of equipment at high volumes and operation and support at a large number of sites

[3] 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.

Criterion 3: Project Team and Technology Transfer Considerations Weight: [30%]

- Qualifications, capabilities, credentials, and experience of the principal investigator and other members of the project team
- Degree of commitment from project partners as evidenced by letters of commitment
- Adequacy of plan to provide non-proprietary data to the National Geothermal Data System
- Adequacy of information dissemination and technology transfer plan

Other Selection Factors

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

1. Technological diversity of projects
2. Proposed cost share above the minimum level required
3. Degree of student involvement from academic institutions
4. Projects in high electricity cost regions and rural or remote areas, or projects proposed by Indian Tribes/Tribal Energy Resource Development Organizations or Groups
5. **For Subtopic Area B only,** preference may be given to projects that address multiple elements of the eight (8) items from EISA Section 616.b listed on page 9
6. Selection of applications which promote and enhance the objectives of the American Recovery and Reinvestment Act of 2009, P.L. 111-5, especially job creation, and/or preservation and economic recovery in an expeditious manner

Topic Area 3
Geothermal Data Development, Collection, and Maintenance

A single award was made as a result of DOE Funding Opportunity Announcement DE-PS36-08GO98020 to establish a National Geothermal Data System (NGDS) to serve as a central repository/virtual portal for all publicly accessible geothermal data. Please reference the GTP website at http://www1.eere.energy.gov/geothermal/ for more information on the NGDS awardee. The primary focus of this Topic Area is the collection of technical geothermal and institutional data (such as transmission infrastructure access, risk mitigation mechanisms, and policy information).

The purpose of this Topic Area is to develop, collect, and maintain data for the United States (i.e., the 50 states, the District of Columbia, and the territories and commonwealths of the U.S.) for the NGDS in order to make geothermal data available to the public and reduce the risk associated with the initial stages of geothermal project development. This additional funding will accelerate data system development and populate critical geothermal site attribute information such as temperature at depth, seismicity/microseismicity, fracture maps, drilling data, permeability data, well logs, geophysical surveys, etc. The data system will be inclusive of all types of geothermal resources such as hydrothermal, geopressured, Enhanced Geothermal Systems, geothermal fluids coproduced with oil and/or gas, etc. It will also utilize information from existing USGS geothermal resource assessments and DOE funded R&D projects.

It is anticipated that the additional data for this Topic Area may come from either one nation-wide team or distributed regional teams. The team(s) will collect data from state geologists, university professors and graduate students, as well as National Laboratories to update and maintain the NGDS. Selected applicants will be expected to collaborate with the United States Geological Survey (USGS) on geothermal resource assessment and resource classification system activities.

Where possible, Applicants shall provide links and/or virtual portals to the additional data rather than providing hard data. Also, applicants shall preferentially seek to preserve data that is deteriorating rapidly (cores, film, paper, non-digitized files, etc.). Data that is collected/developed must fit the prescribed metadata format of the NGDS.

A detailed data collection and quality assurance plan shall be included with applications, including plans for collecting existing data and developing new data as it becomes available. In addition, a data maintenance sustainability plan shall be provided by the applicant detailing a data maintenance strategy.

Projects should be composed of the following phases:

Phase I – Data Retrieval, Collection, Development, and Quality Analysis
Relevant technical geothermal and institutional data shall be collected and provided to the NGDS in accordance with the applicant's data collection and quality assurance plan. Applicants should make efforts to preferentially preserve data that is deteriorating rapidly (rock cores, film, paper, non-digitized files, etc), and to collect/develop data from the small scale (highest level of detail) to the larger scale (i.e. individual well data and/or regional heat flow data). Quality and integrity analysis must be completed on the data during collection.

Phase II - Transfer and Validation of Information to Data System
Data collected in Phase I shall be uploaded to the NGDS; applicants should provide links and/or virtual portals to the retrieved/collected/developed data. System testing will be completed in conjunction with the operators of the NGDS to ensure that data submitted can be accessed through the data system with assurance of the integrity of the original data set.

Phase III – Execution of Data Maintenance Sustainability Plan
Data transferred to the NGDS in Phase II shall be maintained and updated as necessary. Also, new technical or institutional data that becomes available following the initial data transfer shall be added to the system in this phase. This phase should also include a process to publicize the addition of the new data.

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: Project Description **Weight: [35%]**

- Clarity and completeness of the description of each activity necessary to complete the project
- Adequacy of data collection and quality verification plan including description of the condition/state of existing non-digitized data that may be deteriorating (cores, film, paper, non-digitized files, etc.)
- Level of technical quality, clarity, and completeness of the application including the amount of additional data that will be made available online
- Feasibility of the proposed work

Criterion 2: Project Management Plan **Weight: [35%]**

- Soundness of the data collection and maintenance plans with respect to proposed tasks and organizational structure to achieve project objectives (including plan to collaborate with the NGDS team and USGS)
- Likelihood of achieving project objectives through realistic milestones and/or deliverables and logical task structure and reasonableness of the schedule and milestones including Gantt Chart
- Adequacy, appropriateness, and reasonableness of the proposed budget to complete the proposed project

Criterion 3: Roles, Responsibilities, and Capabilities **Weight: [30%]**

- Qualifications, capabilities, credentials, and experience of the principal investigator and other members of the project team
- Level of Commitment as evidenced by letter(s) of commitment from all project partners
- Adequacy of facilities and resources to accommodate the proposed project

Other Selection Factors

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

1. Geographic diversity of source data (by state or region)
2. Degree of student involvement from academic institutions
3. Diversity of the applicant's teaming arrangement
4. Proposed cost share
5. Selection of applications which promote and enhance the objectives of the American Recovery and Reinvestment Act of 2009, P.L. 111-5, especially job creation, and/or preservation and economic recovery in an expeditious manner.

PART II – AWARD INFORMATION

A. TYPE OF AWARD INSTRUMENT

DOE anticipates awarding grants, cooperative agreements, or technology investment agreements (TIAs) under this FOA. If it is determined that a cooperative agreement is the appropriate award instrument, the nature of the Federal involvement will be included in a special award condition.

TIAs are 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 TIAs in the type of available award instruments are to encourage non-traditional Government contractors to participate in this Research, Development and Demonstration (RD&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).

An applicant may request a TIA if it believes that using a TIA could benefit the RD&D objectives of the program (see section 603.225) and can document these benefits. After an applicant is selected for award, the Contracting Officer will determine if awarding a TIA would benefit the RD&D objectives of the program in ways that likely would not happen if another type of assistance instrument were used (e.g., cooperative agreement subject to all the requirements of 10 CFR part 600). The Contracting Officer will use the criteria in 10 CFR 603, Subpart B to make this determination.

Other Requirements for a TIA. In accordance with 10 CFR 603.215, to the maximum extent practicable, non-Federal parties carrying out a RD&D project under a TIA are to provide at least 50% cost sharing, even though the statutory cost sharing requirement may be less. The Contracting Officer will consider the amount of cost sharing proposed in determining if a TIA is the appropriate instrument for a particular project.

B. ESTIMATED FUNDING

A total of $170,000,000 is expected to be available for new awards under this announcement. The following approximate funding amounts are expected to be available for new awards under each Program/Topic Area:

Program/Topic Area:	DOE Funding Level
1	$100,000,000
2	$50,000,000
3	$20,000,000

C. MAXIMUM AND MINIMUM AWARD SIZE

The DOE funding ceiling is defined as the maximum amount for an individual award made under this announcement. The DOE funding floor is defined as the minimum amount for an

individual award made under this announcement. The following funding levels are expected for each Topic Area:

Program/Topic Area:	DOE Funding Ceiling	DOE Funding Floor
1	$5,000,000	None
2	$2,000,000 for Subtopic Areas A and B $5,000,000 for Subtopic Area C	None None
3	$20,000,000	None

D. EXPECTED NUMBER OF AWARDS

Under this announcement, DOE expects to make the following number of awards for each Program/Topic Area:

Program/Topic Area:	Number of Awards
1	Up to 40
2	Up to 20
3	Up to 5

E. ANTICIPATED AWARD SIZE

The anticipated award size for projects under each Program/Topic Area in this announcement is:

Program/Topic Area	Anticipated Award Size
1	$3,000,000 - $5,000,000
2	$1,500,000 for Subtopics Areas A and B $5,000,000 for Subtopic Area C
3	$1,000,000-$20,000,000

F. PERIOD OF PERFORMANCE

The anticipated period of performance for projects under each Program/Topic Area in this announcement is:

Program/Topic Area	Award Duration
1	Up to 3 years
2	Up to 3 years
3	Up to 3 years

G. TYPE OF APPLICATION

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

H. GENERAL INFORMATION

Awards under this FOA will be issued with funds appropriated by the American Recovery and Reinvestment Act of 2009, Pub. L. 111-5, (Recovery Act or Act). Be advised that special terms and conditions may apply to projects funded by the Act relating to:

- Reporting, tracking and segregation of incurred costs;
- Reporting on job creation and preservation;
- Publication of information on the Internet;
- Access to records by Inspectors General and the Government Accountability Office;
- Prohibition on use of funds for gambling establishments, aquariums, zoos, golf courses or swimming pools;
- Ensuring that iron, steel and manufactured goods are produced in the United States;
- Ensuring wage rates are comparable to those prevailing on projects of a similar character;
- Protecting whistleblowers and requiring prompt referral of evidence of a false claim to an appropriate inspector general; and
- Certification and Registration.

These special terms and conditions will be based on provisions included in Titles XV and XVI of the Act. These Special Provisions are located at: http://management.energy.gov/business_doe/business_forms.htm.

PART III - ELIGIBILITY INFORMATION

A. ELIGIBLE APPLICANTS

The following domestic entities are eligible to apply for this announcement: institutions of higher education, non-profit and for-profit private entities, State and Local Governments, Indian tribes, and Tribal Energy Resource Development Organizations or Groups.

DOE Federally Funded Research and Development Centers (FFRDCs), non-DOE FFRDCs, National Laboratories, and Federal agencies are not eligible to apply as prime recipients for this announcement; however, these entities are eligible as sub-recipients **providing their scope and budget does not exceed 20% of total project costs.**

Foreign participants are eligible as sub-recipients provided that:

- The foreign sub-recipient effort, in aggregate, shall not exceed one-third (33%) of the total project costs which includes both the applicant's and the foreign subcontractor's portions of the effort.
- The foreign sub-recipient must provide the minimum required cost share for the Topic Area for its own portion of the project.

B. COST SHARING

Recipient cost share funds should be based on total project costs (or total costs by Phase for Topic Area 1) and must come from non-Federal sources unless otherwise allowed by law.

- **For Topic Area 1, (Validation of Innovative Exploration Technologies),** DOE is seeking applications providing a minimum cost share of 20% for Phase I and 50% Phases II and III. However, applications with proposed cost share as low as 10% for Phase I and 25% for Phases II and III will be considered, using the Secretary of Energy's authority to reduce cost-share requirements under the Recovery Act. For Indian Tribes or Tribal Energy Resources Groups, cost share may be waived in full. **Applicants proposing cost-share below 20% in Phase I and 50% in Phases II and III must provide a justification for their request in the Project Narrative Part IV.C.b.** The justification should explain why the applicant cannot cost share at the statutory level (20% for Phase I and 50% for Phases II and III) including specifics as to why the applicant is proposing at the lower level.

  For Phase I, there is a maximum DOE funding level of $250,000 for conventional resource evaluation technology. If the proposed exploration technique or methodology has never been deployed in a geothermal field before, DOE may consider funding up to $500,000.

- **For Topic Area 2 (Geothermal Energy Production from (A) Low Temperature Resources, (B) Coproduced Fluids from Oil and Gas Wells, and (C) Geopressured Resources),** DOE is seeking applications providing a minimum cost share of 50% of the total project costs. However, applications with proposed cost share as low as 25% of the total project costs will be considered, using the Secretary of Energy's authority to reduce cost-share requirements under the Recovery Act. For Indian Tribes or Tribal Energy Resources Groups, cost share may be waived in full. **Applicants proposing cost share below 50% must provide a justification for their request in the Project Narrative Part IV.C.b.** The justification should explain why the applicant cannot cost share at the statutory level (50%) including specifics as to why the applicant is proposing at the lower level.

- **For Topic Area 3 (Geothermal Data Development, Collection, and Maintenance), recipient cost share is not required.**

C. OTHER ELIGIBILITY REQUIREMENTS

- **Federally Funded Research and Development Center (FFRDC) Contractors**

  FFRDC contractors are not eligible for an award under this announcement, but they may be proposed as a team member on another entity's application **for all Topic Areas,** subject to the following guidelines:

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

contractor in direct competition with the private sector. Save the authorization in a single file named "FFRDC_Auth.pdf," and attach.

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

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

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.

FFRDC Contractor Effort:

- The FFRDC contractor effort, in aggregate, **shall not exceed 20% of the total estimated cost of the project for all Topic Areas**, including the applicant's and the FFRDC contractor's portions of the effort.

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

D. MULTIPLE PRINCIPAL INVESTIGATORS

The assignment and use of multiple Principal Investigators (PIs) in projects awarded under this FOA is allowed. The applicant, whether a single organization or team/partnership/consortium, must however indicate in the application if the project will include multiple PI's. The decision to use multiple PIs for a project is the sole responsibility of the applicant. If multiple PI's will be designated, the application must identify in the application 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 PI's. 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
- PI's roles and administrative, technical and scientific responsibilities for the project.

PART IV – APPLICATION AND SUBMISSION INFORMATION

A. ADDRESS TO REQUEST APPLICATION FORMS

1. Apply at FedConnect

APPLICATIONS MUST BE SUBMITTED THROUGH FEDCONNECT AT https://www.fedconnect.net/ TO BE CONSIDERED FOR AWARD. The Adobe Application Package identified in Part IV. C. is posted as an attachment to this FOA (in FedConnect). It is the responsibility of the applicant, prior to the Application due date and time, to verify successful transmission.

2. Adobe Application Package - Instructions for Completion of Forms

The Adobe Application Package was intended to be utilized in Grants.gov; however, the DOE is currently utilizing it with FedConnect. Please disregard any information within the Adobe Application Package regarding use with Grants.gov; specifically, DO NOT use the "Save & Submit" button in the Adobe Application Package, since that button is only used when submitting an application in Grants.gov.

1) Copy the Adobe Application Package to your desktop;

2) Open the Adobe Application Package, and first complete the SF-424 Application, Project/Performance Site Location(s) form, and SF-LLL form (if applicable) which are all part of the Adobe Application Package. To start this process, simply click on the form's name to select the item and then click on the => button. This will move the document to the appropriate "Documents for Submission" box and the form will be automatically added to your application package. Open the forms by selecting the form name and clicking on the "Open Form" button, then complete the required data fields.

3) Identify the remaining forms required to be completed, as identified in Part IV of the Announcement. Prepare and save these forms to your desktop (e.g., project narrative, resume file, budget file, …). Once finalized and files are named as indicated in Part IV of the Announcement, upload (attach) these files individually within the Adobe Application Package by clicking on "Add Mandatory Other Attachment" to attach the Project Narrative and clicking on "Add Optional Other Attachment" to attach the remaining files;

4) Once all completed files have been attached within the Adobe Application Package, save the Adobe Application Package to your desktop, and submit to FedConnect, following the steps outlined in the FedConnect Quick Start Guide at: https://www.fedconnect.net/Fedconnect/PublicPages/FedConnect_Ready_Set_Go.pdf.

Note that applications may be submitted to multiple Topic Areas; however, SEPARATE applications must be submitted for each Topic Area. If submitting to multiple Topic Areas, save the Adobe Application Package in a single file, using up to 10 letters of the Applicant's Organization Name as the file name (e.g., UCLA). 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., UCLA-1-Topic1).

Note that it is the responsibility of the applicant, prior to the Application due date and time, to verify successful transmission in FedConnect.

Organizations with system-to-system capabilities with Grants.gov for their submissions may continue to use their systems, and their applications will be accepted in Grants.gov to be considered for award.

B. LETTER OF INTENT AND PRE-APPLICATION

1. Letter of Intent

- Letters of Intent are not required.

2. Preliminary Application

- Preliminary applications are not required.

C. CONTENT AND FORM OF APPLICATION

The Adobe Application Package is provided as a separate attachment to this Funding Opportunity Announcement (on FedConnect).

Organizations with system-to-system capabilities with Grants.gov for their submissions may continue to use their systems, and their applications will be accepted in Grants.gov to be considered for award.

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 Adobe Application Package in a single file, using up to 10 letters of the Applicant's Organization Name as the file name (e.g., UCLA). If your organization is submitting more than one Application, you must identify an application number at the end of each file name (e.g., UCLA-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., UCLA-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 pop-up 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.

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**.

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). Applicants are cautioned that this document must not include any proprietary or sensitive business information, as DOE 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 15 pages, including cover page, table of contents, charts, graphs, maps, photographs, and other pictorial presentations, when printed using standard 8.5" by 11" paper with 1 inch margins (top, bottom, left, and right), 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 Part 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 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.

- American Recovery and Reinvestment Act of 2009, P.L. 111-5 (Recovery Act) Information:

  This section should address how the project will promote and enhance the objectives of the Recovery Act, especially job creation and/or preservation, and economic recovery in an expeditious manner. The response must include quantitative data supporting the number of jobs created and/or preserved, as well as data supporting any other direct economic recovery impacts attributable to the performance and conduct of the project.

- Justification, if any, for reduced recipient cost share request (see Part III.B):
  Factors to be addressed when an Applicant requests DOE contributions in excess of the statutory level should include: (1) whether the additional DOE contribution is necessary to finance the project - that sufficient equity or debt financing is not readily available in the commercial markets; (2) whether the project's financial model requires the additional DOE contribution to be viable; and, (3) whether the additional contribution is necessary to achieve the objectives of the Topic Area.

Multiple Principal Investigators, if applicable:

- 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 above listed components of your Project Narrative combined, must be within the 15-page limit specified above.

If cost share is proposed, you must have a letter from each third party contributing cost share (i.e., a party other than the organization submitting the application) that proposes to provide all or part of the required cost share. Each letter must state 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. 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. **All Letters of Commitment must be attached to the Project Narrative File.** Letters of Commitment will not count towards the Project Narrative page limit.
Documents listed below may also 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 subrecipients 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. Each resume must not exceed 2 pages when printed on 8.5" by 11" paper with 1 inch margins (top, bottom, left, and right) 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). If multiple PI's are proposed, the applicant must provide the information indicated in Part III, Section D. as part of this file.

The resume file does not count towards the 15-page limit of the Project Narrative.

d. Budget File

SF 424 A Excel, Budget Information – Non-Construction Programs File
You must provide a separate budget for each year of support requested and accumulative budget for the total project period. Use the SF 424 A Excel, "Budget Information – Non Construction Programs" form on the Applicant and Recipient 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 PART 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, 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 as part of the budget justification or under the comments under the Indirect tab of the Budget Justification form. Save the budget justification information in a single file named "Budget_Justification.pdf" and click on "Add Optional Other Attachment" to attach.

f. American Recovery and Reinvestment Act of 2009, P.L. 111-5 (Recovery Act) Additional Budget Justification Information

Applications shall provide information which validates that all laborers and mechanics on projects funded directly by or assisted in whole or in part by and through funding appropriated by the Recovery Act are paid wages at rates not less than those prevailing on projects of a character similar in the locality as determined by Subchapter IV of Chapter 31 of Title 40, United States Code (Davis-Bacon Act). For guidance on how to comply with this provision, see http://www.dol.gov/esa/whd/contracts/dbra.htm.

To satisfy this requirement, please provide a written assurance that you will comply with the Davis-Bacon Act, as identified above, along with the signature of the authorized representative of your organization. Save the written assurance in a single file named "Davis-Bacon_Assurance.pdf" and click on "Add Optional Other Attachment" to attach.

g. Subaward Budget File(s)

You must provide a separate budget (i.e., budget for each budget year and a cumulative budget) for each subawardee that is expected to perform work estimated to be more than $100,000 or 50 percent of the total work effort (whichever is less). Use the SF 424 A Excel for Non Construction Programs, which can be found on the Applicant and Recipient 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 (plus424.xls) as the file name (e.g., ucla424.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.

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

If a 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. This order and the DOE Field Work Proposal form are available at the following link: http://www.management.energy.gov/documents/o4121.pdf. 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.

i. Authorization for non-DOE or DOE FFRDCs

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

j. Environmental Questionnaire, if applicable

For Topic Areas 1 and 2 ONLY, 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-0000109" 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.

k. 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.

Summary of Required Forms/Files

Your application must include the following documents:

Name of Document	Format	File Name	Topic Area 1: Validation of Innovative Exploration Technologies	Topic Area 2: Geothermal Energy Production from (A) Low Temperature Resources, (B) Coproduced Fluids from Oil and Gas Wells, and (C) Geopressured Resources	Topic Area 3: Geothermal Data Development, Collection, and Maintenance
1) SF 424 - Application for Federal Assistance	Part of Adobe Application Package		**X**	**X**	**X**
2) Project/ Performance Site Location(s)	Part of Adobe Application Package		**X**	**X**	**X**
3) Other Attachments Form: Attach the following files to this form:	Part of Adobe Application Package	See Instructions	**X**	**X**	**X**
a) Project Summary/Abstract File	PDF	Summary.pdf	**X**	**X**	**X**
b) Project Narrative File, including required appendices (e.g., Letters of Commitment)	PDF	Project.pdf	**X**	**X**	**X**
c) Resume File	PDF	Resume.pdf	**X**	**X**	**X**
d) SF 424A Excel – Budget Information for Non-Construction Programs File	Excel	SF424A.xls	**X**	**X**	**X**
e) Budget Justification File	PDF	See Instructions	**X**	**X**	**X**

For Internal Use Only

f) Davis-Bacon Act Assurance	PDF	See Instructions	**X**	**X**	**X**
g) Subaward Budget File(s), if applicable Budget Justification(s), if applicable	Excel for Budget PDF for Justification	See Instructions	**if applicable**	**if applicable**	**if applicable**
h) Budget for Federally Funded Research and Development Center (FFRDC) Contractor File, if applicable	PDF	See instructions	**if applicable**	**if applicable**	**if applicable**
i) Authorization from cognizant Contracting Officer for FFRDC, if applicable	PDF	FFRDC_Auth. pdf	**if applicable**	**if applicable**	**if applicable**
j) Environmental Questionnaire	PDF	See Instructions	**X**	**X**	**N/A**
k) Project Management Plan	PDF	PMP.pdf	**X**	**X**	**X**

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
- Because Recovery Act funds apply to awards under this announcement, additional certification requirements will be required for state or local governments. See Special Provisions located at: http://management.energy.gov/business_doe/business_forms.htm.

E. SUBMISSION DATES AND TIMES

Pre-application Due Date

- Pre-applications are not required.

Application Due Date

- Applications must be received by 07/22/2009, 11:59 PM 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.**

  FedConnect questions should be directed to: support@fedconnect.net or 1-800-899-6665.

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 (other than State or Local Governments) 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 DOE contracting officer for any pre-award costs that are for periods greater than this 90 day calendar period.

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.

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.

For Topic Area 1, any costs incurred prior to selection for negotiation of award (such as temperature gradient well drilling, collection of rock/core cuttings, etc.) are not allowable project costs.

For Topic Area 2, 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.

H. SUBMISSION AND REGISTRATION REQUIREMENTS

1. Where to Submit

APPLICATIONS MUST BE SUBMITTED THROUGH FEDCONNECT TO BE CONSIDERED FOR AWARD. Submit electronic applications through the FedConnect

portal at www.FedConnect.net. Information regarding how to submit applications via Fed Connect can be found at https://www.fedconnect.net/FedConnect/PublicPages/FedConnect_Ready_Set_Go.pdf.

Organizations with system-to-system capabilities with Grants.gov for their submissions may continue to use their systems, and their applications will be accepted in Grants.gov to be considered for award.

Further, it is the responsibility of the applicant, prior to the Application due date and time, to verify successful transmission.

2. Registration Process Requirements

To submit an application in response to this FOA, Applicants must be registered with FedConnect. Before you can register with FedConnect, you will need the following:

A. Your organization's DUNS (including plus 4 extension if applicable). If you don't know your organization's DUNS or if your organization does not have a DUNS, you can search for it 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 FedConnect registration.
C. Possibly, your organization's CCR MPIN. If you are the first person from your organization to register, FedConnect will need to create an organization account. Only a person who knows your organization's CCR MPIN can do this. To find out who this is in your organization, go to http://www.ccr.gov/ and click **Search CCR**. Once you've found your organization, locate the Electronic Business Point of Contact.

   After the initial FedConnect account is created, employees can register themselves without the MPIN. If you are not sure whether your organization has an account with FedConnect, complete the registration form and FedConnect will let you know if your organization is registered. (PLEASE REFER TO QUICK START GUIDE).

Applicants who are not registered with CCR and FedConnect, should allow at <u>least 21 days</u> to complete these requirements. It is suggested that the process be started as soon as possible. For those Applicants already registered in CCR, the CCR registration must be updated annually at http://www.ccr.gov/Renew.aspx.

PART V - APPLICATION REVIEW INFORMATION

A. REVIEW CRITERIA

1. Initial Review Criteria

- **For all Topic Areas,** 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 separate applications to multiple topic areas. **However, a single Principal Investigator or organization may not submit a single application that addresses multiple topic areas. Each application will be evaluated according to its respective merit review criteria. Therefore, applicants will be required to clearly declare which topic area they are applying for within each application. Applications that address more than one Topic Area will not pass the Initial Review.**

2. Merit Review Criteria

- Applications will be evaluated against the merit review criteria listed under each Topic Area in Part I of this Funding Opportunity Announcement.

3. Other Selection Factors

- The Selection Official may consider the program policy factors as listed under each Topic Area in Part I of this Funding Opportunity Announcement.

B. REVIEW AND SELECTION PROCESS

1. Merit Review

Applications that pass the initial review will be subjected to a merit review in accordance with the guidance provided in the "Department of Energy Merit Review Guide for Financial Assistance and Unsolicited Proposals." This guide is 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

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

3. Discussions and Award

The Government may enter into discussions with a selected applicant for any reason deemed necessary, including, but not limited to: (1) the budget is not appropriate or reasonable for the requirement; (2) only a portion of the application is selected for award; (3) the Government needs additional information to determine that the recipient is capable of complying with the requirements in 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 negotiation of awards by the following dates for each Topic Area:
  - Topic Area 1: November 15, 2009
  - Topic Area 2: December 1, 2009
  - Topic Area 3: January 15, 2010

  DOE anticipates making awards from November 2009 through September 2010.

PART VI - AWARD ADMINISTRATION INFORMATION

A. AWARD NOTICES

1. Notice of Selection

DOE will notify applicants selected for negotiation of award. This notice of selection is not an authorization to begin performance. (See Part 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 issued by the DOE contracting officer is the authorizing award document. It normally includes, either as attachments 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; and 7) 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.bfa/dias/policy/rtc/index.jsp.

American Recovery and Reinvestment Act 2009 Award Administration Information – Special Provisions relating to work funded under American Recovery and Reinvestment Act of 2009, Pub. L. 111-5 shall apply. (Special Provisions are located at: http://management.energy.gov/business_doe/business_forms.htm.) Also, the Office of Management and Budget may be promulgating additional provisions or modifying existing provisions. Those additions and modifications will be incorporated into the Special Provisions as they become available.

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.

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

Special Provisions relating to work funded under American Recovery and Reinvestment Act of 2009, Pub. L. 111-5 shall apply. (Special Provisions are located at: http://management.energy.gov/business_doe/business_forms.htm.) Also, the Office of Management and Budget may be promulgating additional provisions or modifying existing provisions. Those additions and modifications will be incorporated into the Special Provisions as they become available.

Statement of Substantial Involvement: Either a grant or cooperative agreement may be awarded under this announcement. If the award is a cooperative agreement, the DOE Specialist and DOE Project Officer will negotiate a Statement of Substantial Involvement prior to award.

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.

C. REPORTING

Reporting requirements are identified on the Federal Assistance Reporting Checklist, DOE F 4600.2, attached to the award agreement. The proposed Checklist for this program can be found at https://www.eere-pmc.energy.gov/procurenet/FinancialAssistance/Forms/DOE_Forms/DOEF4600_2.doc.

Awards under this announcement will be issued with funds appropriated by the American Recovery and Reinvestment Act of 2009, Pub. L. 111-5, (Recovery Act or Act). Be advised that Recovery Act reporting requirements may apply to projects funded by the Act. The reporting requirements will be specified in the DOE F 4600.2 or other related Recovery Act guidance as they become available.

PART VII - QUESTIONS/AGENCY CONTACTS

A. QUESTIONS

Questions regarding the content of the announcement must be submitted through the FedConnect portal at www.FedConnect.net. 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 three (3) business days, unless a similar question and answer have already been posted on the website.

Questions pertaining to the **submission** of applications through FedConnect should be directed by e-mail to support@FedConnect.net or by phone to FedConnect Support at 1-800-899-6665.

B. AGENCY CONTACT(S)

Name: Pete Simon
E-mail: go.geothermal@go.doe.gov

All questions should be submitted through the FedConnect portal (see Part VII.A. above.)

PART VIII - OTHER INFORMATION

A. MODIFICATIONS

Notices of any modifications to this announcement will be distributed through the FedConnect portal. You can receive an email when a modification or an announcement

message is posted by registering with FedConnect as an interested party for this FOA. It is recommended that you register as soon as possible after the release of the FOA, to ensure you receive timely notice of any modifications or other announcements.

B. GOVERNMENT RIGHT TO REJECT OR NEGOTIATE

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

C. COMMITMENT OF PUBLIC FUNDS

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

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 Topic Areas 1 and 2 (all subtopics)**, 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 intends to 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 any). 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.

"Credential Provider" is an organization that validates the electronic identity of an individual through electronic credentials, PINS, and passwords for Grants.gov. Funding Opportunity Announcements which require application submission through Grants.gov require that the individual applying on behalf of an organization first be registered with the Credential Provider at https://apply.grants.gov/OrcRegister.

"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

"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

"Enhanced Geothermal Systems (EGS)" is defined as cost-effective methods of transforming geothermal resources that lack adequate water and/or rock permeability into functional hydrothermal reservoirs.

"**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.

"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

"Hydrothermal Resources" are defined as those geothermal resources that contain sufficient heat, fluid and permeability to be commercially productive using existing drilling, reservoir engineering and power conversion technologies; are currently being produced.

"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.

"**Key Personnel**" means 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).

“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.

"**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.

“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.

“Workover” refers to the performance of remedial operations on a well in order to prepare it for stimulation activities.

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. Here "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 or 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.