

**FINANCIAL ASSISTANCE
FUNDING OPPORTUNITY ANNOUNCEMENT**



U. S. Department of Energy

National Energy Technology Laboratory

**Recovery Act: Site Characterization of Promising Geologic
Formations for CO₂ Storage**

Funding Opportunity Number: DE-FOA-0000033

Announcement Type: Initial

CFDA Number: 81.089 Fossil Energy Research and Development

Issue Date: June 2, 2009
Letter of Intent Due Date: Not Applicable
Pre-Application Due Date: Not Applicable
Application Due Date: August 3, 2009 at 8:00:00 PM Eastern Time

NOTE: REGISTRATION/SUBMISSION REQUIREMENTS

Registration Requirements

There are several one-time actions you must complete in order to submit an application in response to this Announcement (e.g., obtain a Dun and Bradstreet Data Universal Numbering System (DUNS) number, register with the Central Contractor Registration (CCR), and register with FedConnect). Applicants who are not registered with CCR and FedConnect, should allow at least 10 days to complete these requirements. It is suggested that the process be started as soon as possible.

Applicants must obtain a DUNS number. DUNS website: <http://fedgov.dnb.com/webform>.

Applicants must register with the CCR. CCR website: <http://www.ccr.gov>

Applicants must register with FedConnect to submit their application. FedConnect website: https://www.fedconnect.net/FedConnect/PublicPages/FedConnect_Ready_Set_Go.pdf

Questions

Questions relating to the **registration process, system requirements, or how an application form works**, must be directed to Grants.gov at 1-800-518-4726 or support@grants.gov.

Questions regarding the **content** of the announcement must be submitted through the FedConnect portal. You must register with FedConnect to respond as an interested party to submit questions, and to view 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 <http://www.compusearch.com/products/fedconnect/fedconnect.asp>. DOE will try to respond to a question within 3 business days, unless a similar question and answer have already been posted on the website.

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

Application Preparation and Submission

Applicants must download the application package, application forms and instructions, from Grants.gov. Grants.gov website: <http://www.grants.gov/>
(Additional instructions are provided in Section IV A of this FOA.)

Applicants must submit their application through the FedConnect portal. FedConnect website: https://www.fedconnect.net/FedConnect/PublicPages/FedConnect_Ready_Set_Go.pdf
(Additional instructions are provided in Section IV H of this FOA.)

TABLE OF CONTENTS

SECTION I – FUNDING OPPORTUNITY DESCRIPTION.....4

SECTION II – AWARD INFORMATION.....9

A. TYPE OF AWARD INSTRUMENT9

B. ESTIMATED FUNDING.....9

C. MAXIMUM AND MINIMUM AWARD SIZE.....9

D. EXPECTED NUMBER OF AWARDS.....9

E. ANTICIPATED AWARD SIZE.....9

F. PERIOD OF PERFORMANCE.....9

G. TYPE OF APPLICATION9

SECTION III - ELIGIBILITY INFORMATION 11

A. ELIGIBLE APPLICANTS 11

B. COST SHARING..... 11

C. OTHER ELIGIBILITY REQUIREMENTS..... 11

SECTION IV – APPLICATION AND SUBMISSION INFORMATION 13

A. ADDRESS TO REQUEST APPLICATION PACKAGE 13

B. LETTER OF INTENT AND PRE-APPLICATION..... 13

C. CONTENT AND FORM OF APPLICATION – 424 (R&R) 13

D. SUBMISSIONS FROM SUCCESSFUL APPLICANTS..... 24

E. SUBMISSION DATES AND TIMES..... 24

F. INTERGOVERNMENTAL REVIEW..... 24

G. FUNDING RESTRICTIONS 24

H. OTHER SUBMISSION AND REGISTRATION REQUIREMENTS..... 25

SECTION V - APPLICATION REVIEW INFORMATION..... 26

A. CRITERIA 26

B. REVIEW AND SELECTION PROCESS..... 28

C. ANTICIPATED NOTICE OF SELECTION AND AWARD DATES 29

SECTION VI - AWARD ADMINISTRATION INFORMATION..... 30

A. AWARD NOTICES..... 30

B. ADMINISTRATIVE AND NATIONAL POLICY REQUIREMENTS 30

C. REPORTING 32

SECTION VII - QUESTIONS/AGENCY CONTACTS 33

A. QUESTIONS..... 33

B. AGENCY CONTACT..... 33

SECTION VIII - OTHER INFORMATION 34

A. MODIFICATIONS..... 34

B. GOVERNMENT RIGHT TO REJECT OR NEGOTIATE 34

C. COMMITMENT OF PUBLIC FUNDS..... 34

D. PROPRIETARY APPLICATION INFORMATION 34

E. EVALUATION AND ADMINISTRATION BY NON-FEDERAL PERSONNEL 34

F. INTELLECTUAL PROPERTY DEVELOPED UNDER THIS PROGRAM 35

G. NOTICE OF RIGHT TO REQUEST PATENT WAIVER..... 35

H. NOTICE REGARDING ELIGIBLE/INELIGIBLE ACTIVITIES..... 35

SECTION I – FUNDING OPPORTUNITY DESCRIPTION

American Recovery and Reinvestment Act of 2009 (ARRA 2009)

Projects under this Funding Opportunity Announcement (FOA) will be funded, in whole or in part, 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. 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 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 special terms and conditions can be found at http://management.energy.gov/policy_guidance/1672.htm.

The Office of Management and Budget (OMB) has issued Implementing Guidance for the Recovery Act. See M-09-10, [Initial Implementing Guidance for the American Recovery and Reinvestment Act of 2009](#) and M-09-15, [Updated 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, 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 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 require their first tier subawardees to obtain a DUNS number (or update the existing DUNS record) and register with the Central Contractor Registration (CCR).

Background

The Department of Energy's (DOE's) Carbon Sequestration Program within the Office of Fossil Energy's (FE's) Coal Program involves two key elements for technology development and research: 1) core R&D and 2) infrastructure. The core R&D element contains five focal areas for carbon sequestration technology development: 1) capture, 2) geologic carbon storage, 3) monitoring, verification, and accounting (MVA), 4) CO₂ use, and 5) simulation and risk assessment. Core R&D is driven by technology needs and is accomplished through laboratory, pilot-scale, and field-scale research aimed at developing new technologies and new systems for CO₂-emissions mitigation. The infrastructure element includes large-scale projects and the Regional Carbon Sequestration Partnerships (RCSPs).

Initiated by DOE's FE, the RCSPs are a public/private cooperative effort tasked with determining the most suitable technologies, regulations, and infrastructure needs for carbon sequestration in different regions of the U.S. and Canada. The seven RCSPs that form this network currently include more than 350 state agencies, universities, and private companies, spanning 42 states and four Canadian provinces. The RCSPs' efforts to date consist of three phases: (1) Characterization Phase (2003-2005); (2) Validation Phase (2005-2009); (3) Development Phase (2008-2018). The Characterization Phase worked to develop the necessary framework to validate and potentially deploy carbon sequestration technologies. The Validation Phase focuses on validating the most promising regional opportunities to deploy carbon sequestration technologies by building upon the accomplishments of the Characterization Phase. The Development Phase is building on the information generated in the Characterization and Validation Phases and involves the injection of 1 million tons or more of CO₂ by each RCSP into a regionally significant geologic formation or reservoir of different depositional environments. These large-volume injection tests are designed to demonstrate that CO₂ storage sites have the potential to store regional CO₂ emissions safely, permanently, and economically for hundreds of years.

For additional information on DOE's carbon sequestration activity, please visit:
http://www.netl.doe.gov/technologies/carbon_seq/index.html.

For additional information on the RCSPs, please visit:
http://www.netl.doe.gov/technologies/carbon_seq/partnerships/partnerships.html and
http://www.netl.doe.gov/technologies/carbon_seq/refshelf/atlasII/index.html

Purpose and Objectives

The purpose of this FOA is to focus on regional site characterization of a minimum of 10 distinct "high-potential" (described in the next paragraph) geologic formations. Geologic storage formations can be saline formations, depleting/depleted oil fields, or coals seams. Each application submitted in response to this FOA should focus on a minimum of one specific site, formation, or area not previously characterized with public data, unless a strong case can be made for further characterization for deficiencies in the available data sets. It is anticipated that a minimum of 10 awards will be made, for a total site characterization of a minimum of 10 distinct "high-potential" geologic formations. It is expected that these characterization projects will increase our understanding of the potential for these formations to safely and permanently store CO₂.

To be a distinct "high-potential" geologic formation, the target formation should be representative of the regional geology that could be used to store CO₂ emissions from sources where CO₂ could be captured and economically transported. The site should have the potential to store at least 30 million tons of CO₂ and should be able to accept CO₂ from a large commercial source over the lifetime of the source. The formation should represent a significant storage opportunity in the region with appropriate structure and geology (seals) to protect against adverse impacts on the overlying formation or risks to Underground Sources of Drinking Water (USDW) and the surface. The Applicant must demonstrate to DOE that the formation is a significant CO₂ storage site (sink) in the region that could be developed commercially in the future. The Applicant will be required to provide a description of the sink, seals, and the expected

capacity. If stacked reservoirs (where multiple oil reservoirs, brine-filled formations, and/or coal seams are available for storage) are planned to be characterized for the project, the regional potential estimates should include a discussion of the extent and representativeness of the stacked geology.

The objectives of this FOA are to develop comprehensive data sets of formation characteristics (porosity, permeability, injectivity, mineralogy, saturations (if applicable), reservoir architecture, cap rock integrity, etc.); to determine usefulness of potential geologic storage sites; to augment existing data sets and refine best practices for approving storage site selection; and to characterize a minimum of 10 distinct “high-potential” geologic formations or reservoirs. Geologic formations to be evaluated may include saline formations, depleting/depleted oil fields (but not specifically or primarily for the purpose of Enhanced Oil Recovery), or coal seams. The formation selected for characterization should represent a significant storage opportunity in the region with adequate seals to protect against adverse impacts on the overlying formation or risks to Underground Sources of Drinking Water (USDW) and the surface. The projects will also support the President’s Energy Goals: develop and deploy near zero emission coal technologies; make the U.S. a leader on climate change; transfer Carbon Capture and Sequestration (CCS) technology globally; reduce our greenhouse gas emissions 80 percent by 2050; and increase CCS technology funding.

It is encouraged for Applicants to utilize the experience and expertise of U.S. State Geologic Surveys. It is desirable for applications to build upon the research and development already accomplished under the DOE’s carbon sequestration activity (administered by the National Energy Technology Laboratory, or NETL), and the Applicant should include details on how this would be accomplished. In addition, projects selected for negotiations leading to award will be required to coordinate with the RCSPs and the National Carbon Sequestration Database and Geographical Information System (NATCARB) to provide data acquired during the project to the NATCARB database. The Applicants should include appropriate task(s) with initial plans in their application for these collaborations and appropriate details of these tasks will be worked out during award negotiation.

Projects selected for award are expected to contribute to the knowledge base of best practices for site characterization and approving storage site selection. To accomplish this, projects will be required to develop best practices manuals on site characterization for their regions as well as participate in technical working groups for the development of a national framework for site characterization.

Awards made under this FOA are expected to last no longer than three years. Applications should include multiple budget periods of at least 12 months in length. The Applicant is asked to determine the logical structure and duration of each budget period. Logical break points with “go/no-go” decision points should conclude each budget period. For example, budget period 1 could consist of acquiring existing reservoir data, determining characterization protocols, acquiring tools, and estimating storage capacity followed by a go/no-go decision of the estimated storage capacity being above a certain volume. Budget period 2 could then consist of coring and evaluating the reservoir, completing analysis, confirming storage estimates, and publishing results.

Research Goals

The research conducted under this FOA will have a goal of developing comprehensive data sets of formation characteristics (porosity, permeability, injectivity, reservoir architecture, cap rock integrity, etc.). The projects will work to determine the usefulness of potential geologic storage sites, and augment existing data sets through coordination with the NATCARB database and participating in technical working groups on best practices for site characterization and approving storage site selection.

Many issues associated with the site characterization should be addressed. Different regions of the country will have different geologic sinks, overlying seals, and structural issues that can affect the safe and effective storage of CO₂ for centuries. The following are the issues that each of the projects should, at a minimum, address.

Geologic Storage Assessment

Parameter	Goal	Suggested Approach
Regional Significance	Assess the injectivity and formation's capacity to store a significant amount of CO ₂ (at least 30 million tons) from future commercial CCS operations.	Use project data and regional characterization to determine if similar sinks can accommodate injections from all sources in the region.
Capacity Estimates (Site)	Use results of the project to refine capacity estimates of the target formation to meet DOE's goal of estimating capacity +/- 30%.	Assess the potential of current model(s) to predict capacity estimates and refinements needed for existing models. Define minimum data required to accurately assess capacity. Deploy measurement technologies to substantiate capacity estimates.
Injectivity (Site)	Injectivity in distinct "high-potential" formations and area of influence should represent a significant storage opportunity in the region with adequate seals to protect against adverse impacts on the overlying formation or risks to Underground Sources of Drinking Water (USDW) and the surface.	Gather available field data and use simulation to assess injectivity into the target formation(s). Consider various possible well design/configurations, and operating conditions.
Containment - Stratigraphic (site)	Assess the effectiveness of the overlying caprock layers(s) to contain the CO ₂ for millennia without adversely impacting USDW's.	Through proper characterization (e.g., capillary entry pressure tests) of overlying caprock show that vertical migration of CO ₂ would be near zero. Novel techniques, such as pressure monitoring above the caprock during well testing or advances seismic imaging are encouraged, where appropriate.
Containment - brine	Assess the rate effect of dissolution of CO ₂ in brine in the formation.	Use experimentally-validated simulation models to determine the rate of dissolution of CO ₂ into brine and effects on vertical mixing, storage, and the host rock and overlying caprock.
Containment - mineralization	Assess the rate of mineralization in the formation and effect on injection rate and storage.	Use laboratory measurement to emulate and measure the rate of mineralization with the host rock in a CO ₂ storage site and its effect on injectivity and permanent storage of CO ₂ .
Leakage Pathways	Develop methodologies to determine the presence/absence of leakage pathways and that the proposed mitigation strategy can sustain a near zero leakage.	Deploy technologies to identify presence/absence of faults, fractures, and or other leakage pathways and quantify potential impacts on storage. Deploy technologies to assess the containment of CO ₂ in the formation.

Site Selection	Define assessment requirements to select a storage site to meet the goals for containment and injectivity discussed above.	List and summarize the minimum set of tools that were demonstrated during site selection process and that can meet the goals listed above.
Risk Assessment	From the site characterization, identify site attributes that might pose a risk to future commercial operations and use of the formation for storage.	Conduct an analysis to determine and rank the potential risks that a future commercial project may face (e.g., well bore failure, operation failure, project induced seismicity, natural disasters). Identify strategies to monitor for the major risks and to mitigate the situation if a problem is found.
Well bore management	Identify, assess risk, and develop mitigation strategy for existing or planned wells within the area being evaluated.	Development of well bore management plan to mitigate potential risks from migration of CO ₂ through new or old well bores.
Produced Fluid Management and Opportunities for Beneficial Use (if applicable, and excluding Enhanced Oil Recovery)	Identify volumes and qualities of produced fluids and potential management options including beneficial use	Estimates of fluids produced and if non-hydrocarbon fluids produced for reservoir management, possible uses or other management techniques.

Applicants should include a map(s) of the proposed area(s) of the project in the application and a description of the landowner(s). DOE is requiring that the Applicants include commitment letters from landowners for site access and provide full disclosure of known land-use concerns (such as cultural, wildlife, or natural resource concerns). The Applicant should also include details on the stratigraphic column. The site should not be located under wetlands or a sole source aquifer where if commercialized in the future, injection or monitoring wells would penetrate. The target formation should not contain drinking waters as defined by the Safe Drinking Water Act (SDWA).

SECTION II – AWARD INFORMATION

A. TYPE OF AWARD INSTRUMENT

DOE anticipates awarding cooperative agreements under this program announcement (See Section VI.B.2 Statement of Substantial Involvement)

B. ESTIMATED FUNDING

Approximately \$49.75 million of DOE funding, appropriated by the Recovery Act, is expected to be available for new awards under this announcement.

C. MAXIMUM AND MINIMUM AWARD SIZE

Ceiling (i.e., the maximum amount for an individual award made under this announcement):
\$4,975,000 DOE funding

Floor (i.e., the minimum amount for an individual award made under this announcement):
\$3,000,000 DOE funding

D. EXPECTED NUMBER OF AWARDS

DOE anticipates making a minimum of 10 awards under this announcement.

E. ANTICIPATED AWARD SIZE

The maximum **DOE funding** for each award will be \$4.975 million. The Recipient will be required to cost share a minimum of 20 % of the total project costs (Total Project Costs = DOE Share + Federally Funded Research and Development Center (FFRDC) Costs + Recipient Cost Share).

F. PERIOD OF PERFORMANCE

DOE anticipates making awards with project periods not to exceed three years. The Applicant is requested to determine the logical structure and duration of each budget period. Logical break points with “go/no-go” decision points should conclude each budget period. Budget periods generally do not exceed 12 months in duration. For example, Budget Period 1 could consist of acquiring existing reservoir data, determining characterization protocols, acquiring tools, and estimating storage capacity. Followed by a go/no-go decision of the estimated storage capacity being above a certain volume. Budget Period 2 could then consist of coring and evaluating the formation or reservoir, completing analysis, confirming storage estimates, and publishing results.

G. TYPE OF APPLICATION

DOE will accept new and renewal applications under this announcement. Renewal applications are requests for additional funding for a period subsequent to that provided by a current award. Renewal applications compete with all other applications and must be submitted by any established due date/deadline or at least six months before additional funding is required if there is no specified due date/deadline. In preparing a renewal application, Applicants should assume that reviewers will not have access to previous applications. The application should be developed as fully as though the

Applicant were applying for the first time. The application must include all the information required for a new project, plus the project narrative section should discuss the results from prior work.

SECTION III - ELIGIBILITY INFORMATION

A. ELIGIBLE APPLICANTS

All types of domestic entities are eligible to apply, except other Federal agencies, FFRDC Contractors, and nonprofit organizations described in section 501(c)(4) of the Internal Revenue Code of 1986 that engaged in lobbying activities after December 31, 1995.

B. COST SHARING

The cost share must be at least 20 % of the total allowable costs for research and development projects (i.e., the sum of the Government share, including FFRDC contractor costs if applicable, and the Recipient share of allowable costs equals the total allowable cost of the project) and must come from non-Federal sources unless otherwise allowed by law. (See 10 CFR Part 600 for the applicable cost sharing requirements.) (For example: Total Project Costs are \$6,000,000 the maximum DOE share would be \$4,800,000 and the Recipient would be required to cost share a minimum of \$1,200,000.)

C. OTHER ELIGIBILITY REQUIREMENTS

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 subject to the following guidelines:

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

Authorization for DOE FFRDCs. The contracting officer for the 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 complimentary 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 25 % of the total estimated cost of the project, including the Applicant's and the FFRDC contractor's portions of the effort.

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

SECTION IV – APPLICATION AND SUBMISSION INFORMATION

A. ADDRESS TO REQUEST APPLICATION PACKAGE

Application forms and instructions are available at Grants.gov. To access these materials, go to <http://www.grants.gov>, select “Apply for Grants,” and then select “Download Application Package.” Enter the CFDA and/or the funding opportunity number located on the cover of this announcement and then follow the prompts to save the application package. Once you have SAVED the application package and completed all the required documentation, you will submit your application via the FedConnect portal. **DO NOT use the Save & Submit selection in Grants.gov.**

B. LETTER OF INTENT AND PRE-APPLICATION

1. Letter of Intent

Letters of Intent are not required.

2. Pre-application

Pre-applications are not required.

C. CONTENT AND FORM OF APPLICATION – 424 (R&R)

The Applicant must complete the mandatory forms and any applicable optional forms (e.g., Disclosure of Lobbying Activities (SF-LLL)) in accordance with the instructions on the forms and the additional instructions below. Files that are attached to the forms must be in Adobe Portable Document Format (PDF) unless otherwise specified in this announcement.

1. SF 424 (R&R)

Complete this form first to populate data in other forms. Complete all the required fields in accordance with the pop-up instructions on the form. To activate the instructions, turn on the “Help Mode” (Icon with the pointer and question mark at the top of the form). The list of certifications and assurances referenced in Field 18 can be found on the DOE Financial Assistance Forms Page at http://management.energy.gov/business_doe/business_forms.htm under Certification and Assurances.

2. Research and Related Other Project Information

Complete questions 1 through 6 and attach files. The files must comply with the following instructions:

Project Summary/Abstract (Field 7 on the Form)

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

Project Narrative (Field 8 on the Form)

The project narrative must not exceed **25 pages**, **DOUBLE SPACED**, 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). **EVALUATORS WILL ONLY REVIEW 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, because the information contained in these sites will not be reviewed. See Section VIII.D for instructions on how to mark proprietary application information. To attach a Project Narrative, click “Add Attachment.”

The project narrative must include the following information that **WILL** count in the Project Narrative page limitation.

- **Project Objectives**: This section should provide a clear, concise statement of the specific objectives/aims of the proposed project.
- **Merit Review Criterion Discussion**: This section should be formatted to address each of the merit review criterion and sub-criterion listed in Section V.A. Provide sufficient information so that reviewers will be able to evaluate the application in accordance with these merit review criteria. **DOE WILL EVALUATE AND CONSIDER ONLY THOSE APPLICATIONS THAT ADDRESS SEPARATELY EACH OF THE MERIT REVIEW CRITERION AND SUB-CRITERION.**
- **Relevance and Outcomes/Impacts**: This section should explain the relevance of the effort to the objectives in the program announcement and the expected outcomes and/or impacts.
- **Roles Of Participants**: For multi-organizational or multi-investigator projects, describe the roles and the work to be performed by each participant/investigator, business agreements between the Applicant and participants, and how the various efforts will be integrated and managed.
- **Multiple Principal Investigators**: The Applicant, whether a single organization or team/partnership/consortium, must indicate if the project will include multiple PIs. This decision is solely the 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.
- **Statement Of Project Objectives (SOPO)**: The Department of Energy's, National Energy Technology Laboratory uses a specific format for Statement of Project Objectives in its

awards. In announcements such as this one, where the Government does not provide a Statement of Project Objectives, the Applicant is to provide one, which the DOE will then use to generate the Statement of Project Objectives to be included in the award.

The project narrative must contain a single, detailed Statement of Project Objectives that addresses how the project objectives will be met. The Statement of Project Objectives must contain a clear, concise description of all activities to be completed during project performance and follow the structure discussed below. The Statement of Project Objectives may be released to the public by DOE in whole or in part at any time. It is therefore required that it shall not contain proprietary or confidential business information.

The Statement of Project Objectives is generally less than 10 pages in total for the proposed work. Applicants shall prepare the Statement of Project Objectives in the following format:

TITLE OF WORK TO BE PERFORMED

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

A. OBJECTIVES

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

B. SCOPE OF WORK

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

C. TASKS TO BE PERFORMED

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

PHASE I

Task 1.0 – Project Management and Planning

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

Subtask 1.1

(Description)

Task 2.0 - (Title)

PHASE II (Optional)

Task 3.0 - (Title)

D. DELIVERABLES

The periodic, topical, and final reports shall be submitted in accordance with the attached "Federal Assistance Reporting Checklist" and the instructions accompanying the checklist.

[Note: The Recipient shall provide a list of deliverables other than those identified on the "Federal Assistance Reporting Checklist" that will be delivered. These reports shall also be identified within the text of the Statement of Project Objectives. See the following examples:

1. Task 1.1 - (Report Description)
2. Task 2.2 - (Report Description)

E. BRIEFINGS/TECHNICAL PRESENTATIONS (If applicable)

The Recipient shall prepare detailed briefings for presentation to the Project Officer at the Project Officer's facility located in Pittsburgh, PA or Morgantown, WV. Briefings shall be given by the Recipient to explain the plans, progress, and results of the technical effort. The Recipient shall make presentations to the NETL Project Officer/Manager at a project kick-off meeting (to be held by November 2009), annual briefings (to be held by October 2010, September 2011 and September 2012), and a final project briefing.

The Recipient shall provide and present a technical paper(s) at the DOE/NETL Annual Contractor's Review Meeting to be held at the NETL facility located in Pittsburgh, PA or Morgantown, WV, and at least one other technical conference each year, as approved by the NETL Project Officer/Manager.

The Recipient shall hold an open house event at their project site by June 2011.

(End of SOPO)

- Identification of Potential Conflicts of Interest or Bias in Selection of Reviewers
Appendix: This appendix **WILL NOT** count in the Project Narrative page limitation. Provide the following information in this section.

Collaborators and Co-editors: List in alphabetical order all persons, including their current organizational affiliation, who are, or who have been, collaborators or co-authors with you on a research project, book or book article, report, abstract, or paper during the 48 months preceding the submission of this application. Also, list any individuals who are currently, or have been, co-editors with you on a special issue of a journal, compendium, or conference proceedings during the 24 months preceding the submission of this application. If there are no collaborators or co-editors to report, state "None."

Graduate and Postdoctoral Advisors and Advisees: List the names and current organizational affiliations of your graduate advisor(s) and principal postdoctoral sponsor(s) during the last 5 years. Also, list the names and current organizational affiliations of your graduate students and postdoctoral associates.

- Bibliography & References Cited Appendix: This appendix **WILL NOT** count in the Project Narrative page limitation. Provide a bibliography of any references cited in the Project Narrative. Each reference must include the names of all authors (in the same sequence in which they appear in the publication), the article and journal title, book title, volume number, page numbers, and year of publication. Include only bibliographic citations. Applicants should be especially careful to follow scholarly practices in providing citations for source materials relied upon when preparing any section of the application. In order to reduce the number of files attached to your application, please provide the Bibliography and References Cited information as an appendix to your project narrative. Do not attach a file in field 9.
- Facilities & Other Resources Appendix: This appendix **WILL NOT** count in the project narrative page limitation. This information is used to assess the capability of the organizational resources, including subawardee resources, available to perform the effort proposed. Identify the facilities to be used (Laboratory, Animal, Computer, Office, Clinical, and Other). If appropriate, indicate their capacities, pertinent capabilities, relative proximity, and extent of availability to the project. Describe only those resources that are directly applicable to the proposed work. Describe other resources available to the project (e.g., machine shop, electronic shop) and the extent to which they would be available to the project. In order to reduce the number of files attached to your application, please provide the Facility and Other Resource information as an appendix to your project narrative. Do not attach a file in field 10.
- Equipment Appendix: This appendix **WILL NOT** count in the Project Narrative page limitation. List major items of equipment already available for this project and, if appropriate identify location and pertinent capabilities. In order to reduce the number of files attached to your application, please provide the Equipment information as an appendix to your project narrative. Do not attach a file in field 11.

(End of Project Narrative)

Other Attachments (Field 12 on the form):

If you need to elaborate on your responses to questions 1-6 on the “Other Project Information” document, attach a file in field 12.

Also, attach the following files:

Project Management Plan

This plan should be formatted to include the following sections with each section to include the information as described below:

A. Executive Summary: Provide a description of the project that includes the objective, project goals, and expected results. For purposes of the application, this information is included in the Project Narrative (Field 8) and should be simply copied to this document for completeness, so that the Project Management Plan is a stand-alone document.

B. Risk Management: Provide a summary description of the proposed approach to identify, analyze, and respond to perceived risks associated with the proposed project. Project risk events are uncertain future events that, if realized, impact the success of the project. As a minimum,

include the initial identification of significant technical, resource, and management issues that have the potential to impede project progress and strategies to minimize impacts from those issues.

C. Milestone Log: Provide milestones for each budget period (or phase) of the project. Each milestone should include a title and planned completion date. Milestones should be quantitative and show progress toward budget period and/or project goals.

The milestone log should include the following milestones in addition to any milestones developed by the Applicant. These milestones should include initial estimated due dates. The official due dates will be established during negotiation of projects selected for award:

- Updated Project Management Plan
- Document links between project and RCSPs and NATCARB
- Submit Site Characterization Plan
- Notification to Project Manager that reservoir data collection has been initiated
- Notification to Project Manager that subcontractors have been identified for drilling/field service operations
- Notification to Project Manager that field service operations have begun at the project site
- Annual Progress Report submitted
- Notification to Project Manager that activities to populate database with geologic characterization data has begun
- Notification to Project Manager that characterization wells have been drilled
- Notification to Project Manager that well logging has been completed
- Notification to Project Manager that activities on the lessons learned document on site characterization have been initiated

[Note: During project performance, the Recipient will report the Milestone Status as part of the required quarterly Progress Report as prescribed under Attachment 4, Reporting Requirements Checklist. The Milestone Status will present actual performance in comparison with Milestone Log, and include:

- (1) the **actual** status and progress of the project,
- (2) specific progress made toward achieving the project's milestones, and,
- (3) any proposed changes in the project's schedule required to complete milestones.]

D. Funding and Costing Profile: Provide a table (the Project Funding Profile) that shows, by budget period, the amount of government funding going to each project team member. Also, provide a table (the Project Costing Profile) that projects, by month, the expenditure of government funds for the first budget period, at a minimum.

E. Resource Loaded Schedule: Provide a resource loaded schedule linking scope, schedule, and budgeted cost of specific Work Breakdown Structure elements. This shall include a timeline of the project (created in Microsoft Project or equivalent software) broken down by each task and subtask, as described in the Statement of Project Objectives. The timeline should include for each task, a start date, and end date. The timeline should show interdependencies between tasks and include the milestones that are identified in the Milestone Log (Section C). This will be used to guarantee that sufficient resources will be allocated to ensure completion of all activities.

F. Success Criteria at Decision Points: Provide success criteria for each decision point in the project, including go/no-go decision points and the conclusions of budget periods and the entire project. The success criteria should be objective and stated in terms of specific, measurable, and repeatable data. Usually, the success criteria pertain to desirable outcomes, results, and observations from the project.

[Note: As the first task in the Statement of Project Objectives, successful Applicants will revise the version of the Project Management Plan that is submitted with their applications by including details from the negotiation process. This Project Management Plan will be updated by the Recipient as the project progresses, and the Recipient must use this plan to report schedule and budget variances.]

Save this plan in a single file named “pmp.pdf” and click on “Add Attachments” in Field 12 to attach.

Commitment Letters from Third Parties Contributing to Cost Sharing

If a third party, (i.e., a party other than the organization submitting the application) proposes to provide all or part of the required cost sharing, the Applicant must include a letter from the third party stating that it is committed to providing a specific minimum dollar amount of cost sharing. The letter should also identify the proposed cost sharing (e.g., cash, services, and/or property) to be contributed. Letters must be signed by the person authorized to commit the expenditure of funds by the entity and be provided in a PDF format. Save this information in a single file named “CLTP.pdf” and click on “Add Attachments” in Field 12 to attach.

Commitment Letters from Landowners

DOE is requiring that Applicants include commitment letters from landowners for site access and provide full disclosure of known land-use concerns (such as cultural, wildlife, or natural resource concerns). Letters must be signed by the person authorized to commit these resources by the entity and be provided in a PDF format. Save this information in a single file named “CLL.pdf” and click on “Add Attachments” in Field 12 to attach.

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

If a DOE FFRDC contractor is to perform a portion of the work, you must provide a DOE Field Work Proposal in accordance with the requirements in DOE Order 412.1 Work Authorization System. This order and the DOE Field Work Proposal form are available at http://management.energy.gov/business_doe/business_forms.htm. Use the FFRDC name as the

file name (up to 10 letters) and attach to the R&R Other Project Information form in Field 12 – Add Attachments.

SF 424 C Excel, Budget Information – Construction Programs

If you plan to have a subawardee provide construction services on your proposed RD&D project, submit a SF 424 C Excel Budget Information – Construction Programs form (available at http://management.energy.gov/business_doe/business_forms.htm) for the subawardee's construction effort, instead of an R&R Subaward Budget Attachment. Complete a SF 424 C budget ***for each year of support requested and a cumulative budget for the total project period***. You must also identify the subawardees construction costs on your RESEARCH AND RELATED BUDGET form on the Subaward/Consortium/Contractual Costs line (Line F.5). Justify the construction costs in your budget justification file and identify who will be performing the work. Save the SF 424 C budgets in a single file named "SF424C.xls," and attach to the RESEARCH AND RELATED Other Project Information form. Click on "Add Attachments" in Field 12 to attach.

3. Research and Related Senior/Key Person Profile (Expanded)

Complete this form before the Budget form to populate data on the Budget form. Beginning with the PD/PI, provide a profile for each senior/key person proposed. A senior/key person is any individual who contributes in a substantive, measurable way to the scientific/technical development or execution of the project, whether or not a salary is proposed for this individual. Subawardees and consultants must be included if they meet this definition. . Use the Next Person button to expand the form to add additional senior/key persons.

For each senior/key person provide:

Biographical Sketch

Complete a biographical sketch for each senior/key person and attach to the "Attach Biographical Sketch" field in each profile. The biographical information for each person 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 must include:

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

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

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

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

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

Current and Pending Support

Provide a list of all current and pending support (both Federal and non-Federal) for the Project Director/Principal Investigator(s) (PD/PI) and senior/key persons, including subawardees, for ongoing projects and pending applications. For each organization providing support, show the total award amount for the entire award period (including indirect costs) and the number of person-months per year to be devoted to the project by the senior/key person. Concurrent submission of an application to other organizations for simultaneous consideration will not prejudice its review. Save the information in a separate file and attach to the “Attach Current and Pending Support” field in each profile.

4. Research and Related Budget (Total Fed + Non-Fed)

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

Budget Justification (Field K on the form).

Provide the required supporting information for the following costs (See R&R instructions): equipment; domestic and foreign travel; participant/trainees; material and supplies; publication; consultant services; ADP/computer services; subaward/consortium/contractual; equipment or facility rental/user fees; alterations and renovations; and indirect cost type. Provide any other information you wish to submit to justify your budget request. If cost sharing is required, provide an explanation of the source, nature, amount, and availability of any proposed cost sharing. Attach a single budget justification file for the entire project period in Field K. The file automatically carries over to each budget year.

ARRA 2009 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 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>.

5. R&R Subaward (Total Fed + Non-Fed) Form

Budgets for Subawardees, other than DOE FFRDC Contractors. You must provide a separate cumulative R&R 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). Download the R&R Budget Attachment from the R&R SUBAWARD BUDGET (Total Fed + Non-Fed) FORM and e-mail it to each subawardee that is required to submit a separate budget. After the Subawardee has e-mailed its completed budget back to you, attach it to one of the blocks provided on the form. Use up to 10 letters of the subawardee’s name as the file name.

6. Project/Performance Site Location(s)

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

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

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

7. Disclosure of Lobbying Activities (SF-LLL)

If applicable, complete SF- LLL. Applicability: If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the grant/cooperative agreement, you must complete and submit Standard Form - LLL, "Disclosure Form to Report Lobbying."

8. Summary of Required Forms and Files

Your application must include the following documents:

Name of Document	Format	Attach to
SF 424 (R&R)	Form	N/A
RESEARCH AND RELATED Other Project Information	Form	N/A
Project Summary/Abstract	PDF	Field 7
Project Narrative, including required appendices	PDF	Field 8
Budget for DOE FFRDC, if applicable	PDF	Field 12
Project Management Plan	PDF	Field 12
Commitment Letters from Third Parties	PDF	Field 12
Commitment Letters from Landowners	PDF	Field 12
SF 424C Excel - Budget Information for Construction Programs File	PDF	Field 12
RESEARCH & RELATED SENIOR/KEY PERSON Profile (Expanded)	Form	N/A
Biographical Sketch	PDF	Attach to appropriate block
Current and Pending Support	PDF	Attach to appropriate block
RESEARCH AND RELATED BUDGET (Total Fed + Non-Fed)	Form	N/A
Budget Justification	PDF	Field K
R&R SUBAWARD BUDGET (Total Fed + Non-Fed) ATTACHMENT(S) FORM , if applicable	Form	N/A
PROJECT/PERFORMANCE SITE LOCATION(S)	Form	N/A
SF-LLL Disclosure of Lobbying Activities , if applicable	Form	N/A

D. SUBMISSIONS FROM SUCCESSFUL APPLICANTS

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

- Indirect cost information
- Other budget information
- Name and phone number of the Designated Responsible Employee for complying with national policies prohibiting discrimination (See 10 CFR 1040.5)
- Representation of Limited Rights Data and Restricted Software, if applicable
- Commitment Letter from Third Parties Contributing to Cost Sharing, if applicable
- Environmental Questionnaire (http://www.netl.doe.gov/business/forms.html#POST_SEL_AP)

E. SUBMISSION DATES AND TIMES

1. Pre-application Due Date

Pre-applications are not required.

2. Application Due Date

Applications must be received by **August 3, 2009, not later than 8:00:00 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.**

F. INTERGOVERNMENTAL REVIEW

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

G. FUNDING RESTRICTIONS

Cost Principles: Costs must be allowable in accordance with the applicable Federal cost principles referenced in 10 CFR Part 600. The cost principles for commercial organization are in FAR Part 31.

Pre-award Costs: Recipients may charge to an award resulting from this announcement pre-award costs that were incurred within the ninety (90) calendar day period immediately preceding the effective date of the award, if the costs are allowable in accordance with the applicable Federal cost principles referenced in 10 CFR Part 600. Recipients must obtain the prior approval of the contracting officer for any pre-award costs that are for periods greater than this 90-day calendar period.

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

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

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

2. Registration Process

There are several one-time actions you must complete in order to submit an application in response to this Announcement (e.g., obtain a DUNS number, register with the CCR, and register with FedConnect). Applicants who are not registered with CCR and FedConnect, should allow at least 10 days to complete these requirements. It is suggested that the process be started as soon as possible.

SECTION V - APPLICATION REVIEW INFORMATION

A. CRITERIA

1. Initial Review Criteria

Application Award Eligibility

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.

2. Merit Review Criteria

Scientific and Technical Merit (40%)

- The overall quality, soundness, and reasonableness of the Applicant's methodology(ies) to characterize the formation and evaluate CO₂ sequestration opportunities.
- Degree to which the proposed technology or methodology represents an important advancement toward achieving the FOA Objectives.
- The degree to which the proposed work identifies and/or makes progress on new concepts.
- The Applicant's description of the geology and justification based on existing field data, that the proposed formation is a distinct "high-potential" formation and has the potential to store at least 30 million tons of CO₂ and could accept CO₂ from a large commercial source over the lifetime of the source.
- Feasibility of the proposed project; the degree to which the proposed work is based on sound scientific and engineering principles.
- The proposed project's ability to address the regional and national significance of future development of CCS projects in geologic formations similar to the one proposed for evaluation.
- Awareness of commercial and emerging technologies and processes and how the proposed project provides significant improvement.
- Adequacy of the discussion of the technical and process risks associated with the proposed project.
- Significance of the anticipated benefits of the proposed work.
- The availability of existing data from industrial partners, the regional partnerships, and/or geologic surveys which could be used to augment the characterization effort.

Technical Approach, Plan, and Understanding (30%)

- Adequacy and feasibility of the Applicant's technical approach, work plan, and management plan.
- Appropriateness of the division of the project into logical phases, budget periods, tasks, and subtasks necessary to accomplish the project objectives.
- Appropriateness, rationale, and completeness of the proposed Statement of Project Objectives.
- Reasonableness of the proposed project schedule, staffing plan, and planned travel.
- Adequacy of the plan to: develop best practices manuals on site characterization for their formation; to participate in technical working groups for the development of a national framework for site characterization; and to provide data acquired during the project to the

NATCARB database.

- Adequacy of the Applicant's plan to address the issues described in the Geologic Storage Assessment table under the Research Goals section of the FOA.

Applicant/Team Capabilities, Organization, Facilities, and Management Capabilities (20%)

- Appropriateness and extent of key personnel credentials, capabilities, and experience.
- Demonstrated experience of the Applicant and participating organizations in the technology areas addressed in the application and in managing similar projects.
- Clarity, logic and likely effectiveness of the project organization, including subcontractors; the roles and responsibilities of each partner for each task and the availability of key personnel to complete the proposed project.
- The adequacy (quality, availability, and appropriateness) of the facilities and equipment to perform project tasks.
- The ability of the Applicant to succeed based on prior experience in managing projects of similar type, size, and complexity.
- Adequate details provided to support the Applicant's ability to complete activities within the timeframe identified for each Budget Period, and all activities within three years of award.
- Adequacy of the Applicant's plans to leverage the experience and expertise of organizations such as State Geologic Surveys and the RCSPs.

Project Management Plan (10%)

This criterion relates entirely to the stand-alone Project Management Plan described in this Funding Opportunity Announcement under Section IV. C. 3. Other Attachments. If the Application does not include this stand-alone Project Management Plan, reviewers will be instructed to assign a score of zero to this criterion.

In general, this criterion evaluates the completeness, clarity and effectiveness of the Project Management Plan in establishing a credible project base and in delineating how the SOPO will be successfully executed. Items to be assessed include effectiveness of risk management methodologies and procedures, resource loaded schedule including sequencing of project activities, such as milestones and decision points, success criteria, and organizational structure and management.

The following specific aspects of the Project Management Plan shall be evaluated:

- Adequacy and completeness of the discussion of how the specific tasks to be performed under the SOPO are designed and integrated to achieve the project objectives, including the scheduling and sequencing of all tasks and the identification of key relationships between task activities and important milestones and decision points.
- Adequacy of the plan for establishing the baseline cost for the project and for assigning costs to specific tasks identified in the SOPO.
- Adequacy of the project management system to monitor and control project scope, cost, and schedule.
- Adequacy of the plan for ensuring effective coordination and communication between: (1) all project team members and other project participants, including technical, business, financial, permitting and other appropriate entities; (2) the project performers and DOE; and (3) the project performers and external stakeholders.
- Adequacy of the plan for assessing, identifying, tracking, and managing project risk.
- Adequacy of the plan for assessing, monitoring, and reporting the potential environmental

- impacts to air, land and water resources, and potential impacts of waste production.
- Adequacy of plans for providing real-time status updates on project status, such as plans to provide daily drilling reports, etc.

3. Other Selection Factors

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

- 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.
- It may be desirable to select for award a group of projects, which represents a diversity of technical approaches and methods.
- It may be desirable to support complementary and/or duplicative efforts or projects, which, when taken together, will best achieve the research goals and objectives.
- It may be desirable to select a project based on its amount of the selected region's, formations, and or basin's potential for storing CO₂ compared to other equivalently scored proposals.
- It may be desirable that different kinds and sizes of organizations be selected for award in order to provide a balanced programmatic effort and a variety of different technical perspectives.
- It may be desirable, because of the type of projects envisioned, or limitations of past efforts, to select for award a group of projects with a broad or specific geographic distribution.
- It may be desirable to select or to avoid selecting multiple projects, which would characterize the same formation or region.
- It may be desirable to select for award a variety of projects with respect to the type of formation to be characterized (saline formations, depleting/depleted oil fields, or coal seams).

B. REVIEW AND SELECTION PROCESS

1. Merit Review

Applications Subject to Merit Review

Applications that pass the initial review will be subjected to a merit review in accordance with the guidance provided in the "Department of Energy Merit Review Guide for Financial Assistance." This guide is available under Financial Assistance, Regulations and Guidance at <http://www.management.energy.gov/documents/meritrev.pdf>.

2. Selection

Selection Official Consideration

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

3. Discussions and Award

Government Discussions with Applicant

The Government may enter into discussions with a selected Applicant for any reason deemed necessary, including but not limited to: (1) the budget is not appropriate or reasonable for the

requirement; (2) only a portion of the application is selected for award; (3) the Government needs additional information to determine that the Recipient is capable of complying with the requirements in 10 CFR Part 600; and/or (4) special terms and conditions are required. Failure to resolve satisfactorily the issues identified by the Government will preclude award to the Applicant.

C. ANTICIPATED NOTICE OF SELECTION AND AWARD DATES

Selection and Award Date

DOE anticipates notifying Applicants selected for award by the end of August 2009 and making awards by mid December 2009.

SECTION VI - AWARD ADMINISTRATION INFORMATION

A. AWARD NOTICES

1. Notice of Selection

Selected Applicants Notification

DOE will notify Applicants selected for award. This notice of selection is not an authorization to begin performance. (See Section IV.G with respect to the allowability of pre-award costs.)

Non-selected Notification

Organizations whose applications have not been selected will be advised as promptly as possible.

2. Notice of Award

An Assistance Agreement issued by the contracting officer is the authorizing award document. It normally includes either as an attachment or by reference: (1). Special Terms and Conditions; (2). Applicable program regulations, if any; (3). Application as approved by DOE.; (4). DOE assistance regulations at 10 CFR Part 600, or, for Federal Demonstration Partnership (FDP) institutions, the FDP terms and conditions; (5). National Policy Assurances To Be Incorporated As Award Terms; (6). Budget Summary; and (7). Federal Assistance Reporting Checklist, which identifies the reporting requirements.

B. ADMINISTRATIVE AND NATIONAL POLICY REQUIREMENTS

1. Administrative Requirements

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

ARRA 2009 Award Administration Information

Special Provisions relating to work funded under American Recovery and Reinvestment Act of 2009, Pub. L. 111-5 shall apply. These provisions can be found at http://management.energy.gov/policy_guidance/1672.htm.

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

Intellectual Property Provisions

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

Statement of Substantial Involvement

RECIPIENT'S RESPONSIBILITIES. The Recipient is responsible for:

Performing the activities supported by this award in accordance with the Project Management Plan, including providing the required personnel, facilities, equipment, supplies and services;

Managing and controlling project activities in accordance with established processes and procedures to ensure tasks and subtasks are completed within schedule and budget constraints defined by the current Project Management Plan;

Implementing an approach to identify, analyze, and respond to project risks that is commensurate with the complexity of the project;

Defining and revising approaches and plans, submitting the plans to DOE for review, and incorporating DOE comments;

Coordinating related project activities with external suppliers to ensure effective integration of all work elements, including data reporting to the NATCARB database and appropriate coordination with RCSPs and State Geologic Surveys.

Developing a best practices manual on site characterization for the project's region, and participating in technical working groups for the development of a national framework for site characterization;

Attending annual program review meetings and reporting project status;

Submitting technical reports and incorporating DOE comments;

Presenting the project results at appropriate technical conferences or meetings as directed by the DOE Project Officer; and

The Recipient shall, at least ten (10) working days prior to the planned issue date, submit to the Contracting Officer via email a draft copy of any planned press releases related to work performed under this Award.

DOE RESPONSIBILITIES. DOE is responsible for:

Developing a program plan consistent with requirements specified in OMB guidance M-09-15, Sec. 2.8.

Reviewing in a timely manner project plans, including project management and testing plans, and recommending alternate approaches, if the plans do not address critical programmatic issues;

Participating in project management planning activities, including risk analysis, to ensure DOE's program requirements or limitations are considered in performance of the work elements;

Reviewing Continuation Applications to ensure adequate progress and that the work accomplishes the

program and project objectives. Recommending alternate approaches or shifting work emphasis, if needed;

Integrating and redirecting the work effort to ensure that project results address critical system and programmatic goals established by DOE FE, in coordination with the DOE's carbon sequestration activity;

Promoting and facilitating technology transfer activities, including disseminating program results to the activity stakeholders, including other federal agencies, through presentations and publications;

Serving as scientific/technical liaison between awardees and other program or industry staff; and

The Contracting Officer will coordinate all necessary reviews and clearances from the NETL Office of Public Affairs and Project Office and provide the Recipient with the results of such reviews at least 2 working days prior to the planned issue date.

C. REPORTING

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

Also see http://management.energy.gov/policy_guidance/1672.htm for Recovery Act terms, conditions, and reporting requirements.

SECTION VII - QUESTIONS/AGENCY CONTACTS

A. QUESTIONS

Questions regarding the **content** of the announcement must be submitted through the FedConnect portal. You must register with FedConnect to respond as an interested party to submit questions, and to view 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 <http://www.compusearch.com/products/fedconnect/fedconnect.asp>. DOE will try to respond to a question within 3 business days, unless a similar question and answer have already been posted on the website.

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

B. AGENCY CONTACT

Questions regarding FOA and program requirements must be directed to:

Contact Name:	Debra A. Duncan
E-mail address:	duncan@netl.doe.gov

SECTION VIII - OTHER INFORMATION

A. MODIFICATIONS

Notices of any modifications to this announcement will be posted on Grants.gov and the FedConnect portal. You can receive an email when a modification or an announcement message is posted by registering with FedConnect as an interested party for this FOA. It is recommended that you register as soon after release of the FOA as possible to ensure you receive timely notice of any modifications or other announcements. More information is available at <http://www.fedconnect.net> and <http://www.compusearch.com/products/fedconnect/fedconnect.asp>.

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 [*Insert pages*] of this application have been submitted in confidence and contain trade secrets or proprietary information, and such data shall be used or disclosed only for evaluation purposes, provided that if this Applicant receives an award as a result of or in connection with the submission of this application, DOE shall have the right to use or disclose the data herein to the extent provided in the award. This restriction does not limit the government’s right to use or disclose data obtained without restriction from any source, including the Applicant.”

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

“The following contains proprietary information that (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. 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. 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.

G. NOTICE OF RIGHT TO REQUEST PATENT WAIVER

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

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

H. NOTICE REGARDING ELIGIBLE/INELIGIBLE ACTIVITIES

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