**U.S. Department of Energy**

**National Energy Technology Laboratory**

**Sources Sought**

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**Mission Execution & Strategic Analysis 2 (MESA2)**

**ISSUE DATE: January 31, 2020**

The U.S. Department of Energy (DOE), National Energy Technology Laboratory (NETL), is conducting market research to identify contractors capable of providing mission execution and strategic analysis for NETL. NETL’s mission is to discover, integrate, and mature technology solutions to enhance the nation’s energy foundation and protect the environment for future generations. NETL is the only national laboratory owned and operated by DOE. NETL scientists and engineers conduct and manage research activities at sites in Pittsburgh, Pennsylvania; Morgantown, West Virginia; and Albany, Oregon. The majority of the work required would be at one of the three above NETL sites, however NETL also maintains offices in Sugar Land, Texas; Anchorage, Alaska; and provides support to other DOE offices within the United States.

**THIS IS NOT A REQUEST FOR PROPOSAL. THIS IS A SOURCES SOUGHT NOTICE ONLY**

THIS IS A SOURCES SOUGHT NOTICE for information and planning purposes and is not to be construed as a commitment by the Government. This Sources Sought Notice is released pursuant to FAR Part 10 Market Research and is issued for the purpose of identifying available sources (interested entities) capable of performing the requirement. This is not a solicitation announcement for proposals and NO CONTRACT will be awarded from this announcement. No reimbursement will be made for any costs associated with providing information in response to this announcement or any follow-up information requests. The information gathered from this Sources Sought Notice will be utilized in the Government's determination for the contract and business type utilized in the solicitation.

The North American Industrial Classification System (NAICS) code for this effort is 541330 with a small business size standard of $15.0 M. The NAICS is provided for use by businesses in determining their appropriate business size in response to this Sources Sought Notice. For further information on business size definitions please refer to the Small Business Administration's web site at: <https://www.sba.gov/sites/default/files/files/Size_Standards_Table.pdf>

**PURPOSE:** The purpose of this Sources Sought Notice is to solicit input and gauge interest among those parties capable of Mission Execution & Strategic Analysis Support Services for the Department of Energy, National Energy Technology Laboratory.

Collectively, the anticipated magnitude of this effort is estimated to be approximately $40 Million or more per year ($25 Million for Mission Execution and $15 Million for Strategic Analysis) for the necessary services to be provided. Interested entities are requested to identify if they can provide all necessary technical and management expertise, equipment, supplies, personnel, materials, training, and any additional support required to provide Mission Execution and Strategic Analysis as a whole (all together) or for which portion (Mission Execution or Strategic Analysis) of the overall work.

**OBJECTIVES:** The intent of the Mission Execution and Strategic Analysis (MESA) services are to provide quality and timely technical and associated administrative support services for program and project planning, execution, monitoring, and assessment; and for high quality, credible analyses of the entire economic value chain of energy, from resource assessment, extraction, and transport, to conversion, distribution, and end-use. MESA services are broken down into two portions: Mission Execution (ME) and Strategic Analysis (SA), as follows:

**Mission Execution (ME):** Comprised of technology, regulatory, and policy information research; energy and cost data review; technical writing; graphic design support; meeting planning and facilitation; technical proposal review; peer review planning and logistical support; roadmapping; project portfolio and program assessments; data management and process improvement; international activities support; and National Environmental Policy Act (NEPA) support. The overarching primary functions for the ME requirement include, but are not limited to:

* Strategic Planning - NETL strategic planning implements the Department's goals and objectives to set organizational direction, strengthen operations, prioritize research, focus resources, set employee and stakeholder goals, and determine RD&D outcomes. Strategic planning efforts are centered on NETL’s enduring missions: effective resource development, efficient energy conversion, and environmental sustainability and typically performed twice annually.
* Technology Roadmapping - NETL technology roadmapping identifies a portfolio of technology alternatives aligned to strategic plans through assessment of near and longer term technical performance targets and goals, baselining of current technology performance, identification of critical technology gaps and cost drivers, assessment of alternative solutions, and identification of risks. Technology roadmapping is typically performed annually, updated quarterly, and spans technologies associated with unconventional oil and gas, natural gas, carbon capture, carbon storage, advanced energy systems, and fossil energy enabling technologies.
* Multi-Year Planning – NETL multi-year program planning implements strategic plans through alignment of program goals, prioritization of program thrusts, prioritization of technologies identified within technology roadmaps, and transparently documents prioritization methodologies to inform investment approaches. Multi-year program planning is typically performed annually, updated quarterly, and spans technologies associated with unconventional oil and gas, natural gas, carbon capture, carbon storage, advanced energy systems, and fossil energy enabling technologies.
* Operational Planning - NETL operational planning implements multi-year program plans to prioritize and align budgets, schedules, and technical performance of internal and extramural RD&D. Operational planning includes allowances for funding opportunities in support of energy technology advancement and demonstrations, and establishment of milestones. It also serves as a basis for an operational budget and defines activities based on each fiscal year’s budget. At NETL, operating plans are commonly developed as Annual Operating Plans (AOP).
* Acquisition Planning and Execution - Through NETL, the DOE funds relevant research at universities, national laboratories, not-for profit institutions, and industry. NETL issues funding opportunity announcements to advance the laboratory’s mission, assemble the most prudent portfolio of research, and to advance technologies. NETL acquisition planning and execution implements operational planning through competitively and non-competitively selected awards for cost shared technology RD&D. NETL typically releases over 100 funding opportunity announcements annually resulting in over 3,000 applications for financial assistance and over 500 annual awards. Additionally, NETL typically receives approximately 30 non-competitive applications for funds. Key information is extracted, organized, and managed from the submitted applications, which are then evaluated in terms of technical approach, management capabilities, and other factors. Information from the applications, as well as reviewer comments, are routinely packaged into one or more briefings to the source selection official and possibly other Departmental officials, depending on the nature of the funding opportunity announcement. It is imperative that schedules and procurement integrity are maintained throughout the entire process.
* Proposal Review - NETL will require the contractor to support proposal review which employs technical subject matter experts, thorough, objective, and consistent independent technical reviews of applications for federal financial assistance in accordance with prescribed evaluation criteria. NETL typically requires independent technical reviews for approximately 500 applications in a government fiscal year.
* Program, Portfolio, and Project Review and Assessment - NETL program, portfolio, and project assessment implements a disciplined process to assess the status and progress of a program, portfolio, or project in achieving technical performance goals and targets while also considering current market conditions, scientific breakthroughs, changing regulatory environments and evolutionary improvements to existing systems and technologies in order to identify and implement value added adjustments. NETL implements several program areas that reach across over 1,500 projects. Typically, up to 50 key projects are assessed annually. These projects comprise technology portfolios and ultimately aggregate into the programs funded by Congress. The individual research activities supported by DOE have established budgets, milestones, technical and cost goals. Variance in terms of baseline costs, attainment of milestones, and advancements toward goals must be reviewed periodically in order to assess the effectiveness of a given research activity, as well as groups of projects, and a program as a whole. These reviews allow for issues to surface and be addressed, and for goals and targets to be modified as a function of complementary research findings. These reviews ensure that public funds support relevant and timely research.
* Project Control and Oversight – NETL project control and oversight actively assesses project status and progress through assessment of key data elements, milestone status, schedule progress, and project costs to identify risks and issues in time to make adjustments that assure success in achieving program targets and goals. Typically, up to 50 key projects are submitted for detailed assessments annually. Interim findings and other results must be dynamically managed so that adjustments to the overall portfolio can be made in order to realize program goals. Ensuring the availability of quality data sets and research reports is also an oversight function that is essential to public domain information.
* Outreach and Technology Transfer – NETL outreach and technology transfer conveys general information about NETL, specific information about NETL programs, develops strategies for technology patents and copyrights, as well as licensing and commercialization strategies, and transfers appropriate research findings to the public for further development or commercialization. NETL closes out several hundred awards every year. Typically, between 50-100 of these awards are determined to be worthy of technology transfer outreach annually. To be effective, communications must identify the target audience and develop messages and materials that are appropriate. Outreach and technology transfer is a priority at NETL given the organization’s extensive research and technology development programs.
* Environmental Review - NETL environmental review employs a systematic, interdisciplinary approach to assess RD&D environmental impacts to make inform decisions through compliance with National Environmental Policy Act (NEPA) and related environmental reviews (e.g., National Historic Preservation Act, Endangered Species Act, Fish and Wildlife Coordination Act, and others) that are necessary prior to project implementation. NETL processes over 3,000 NEPA environmental questionnaires annually, with the majority resulting in categorical exclusions. There may be more complex situations in which an Environmental Assessment (EA) or Environmental Impact Statement (EIS) is required. The Contractor does not perform the assessment or impact study but is responsible to provide support to the Government NEPA personnel who are completing the action.
* Strategic Partnering Activities - Depending on whether NETL elects to make or buy a technical solution to an energy problem, NETL may need partners whose expertise compliments NETL’s capabilities (make decision) or requires technically competent stakeholders that understand NETL’s mission, objectives and strategies to execute the technical solution on NETL’s behalf (buy). NETL is also expected to collaborate with the other DOE national laboratories in leveraging each other’s unique strengths in solving mission critical problems within any of the DOE program areas. Additionally, as a national laboratory, NETL is expected to engage with the private sector in moving NETL intellectual property into the marketplace and assisting the private sector in implementing technology solutions with the aid of unique capabilities found at NETL. This requires the development of relationships at various levels by leveraging activities in strategic planning, technology roadmapping, program/portfolio/project review and assessment, technology assessment, and outreach activities to identify organizations that have overlapping programmatic and technical needs and where NETL core competencies may be of interest to the organization in solving their issue(s). The overlapping interests should be broader in scope (strategic level) and focus on creating opportunities to enter into strategic partnerships (reimbursable work for a private sector client) or offering opportunities to demonstrate NETL- created technology and pave the way for future commercialization opportunities for that NETL technology.

Specifically, the ME requirement includes, but is not limited to, the following functional areas broken down as follows:

* Program and Project Implementation includes but is not limited to:
	1. Ensure compliance with mandated reporting requirements related to performance and program management within DOE
	2. Coordinate program and project-related meetings
	3. Provide technical expertise in planning program initiatives, evaluating alternative approaches to meeting program goals, and ensure technical excellence with technology portfolios
	4. Conduct high quality program and project peer reviews
	5. Participate in proposal review and evaluation processes
	6. Conduct assessments and develop recommendations to enable continual improvement of program and project management practices
	7. Complete assessments to ensure compliance with Environmental Safety and Health (ES&H) programs, policies, and procedures
	8. Develop and employ procedures to ensure the security of valuable and sensitive information contained within NETL
	9. Process information to ensure compliance with the National Energy Policy Act (NEPA)
	10. Inform NETL staff of technology and policy developments that are relevant to NETL program areas
* Systems and Databases includes but is not limited to:
	1. Populate and exercise various databases, models, and analytical tools used to assist in efficient implementation of the technology programs being managed at NETL
	2. Program changes within the tools or develop mid-ware products that improve the efficiency of the program and project management processes at NETL or that accommodate changes in performance requirements
* Assessments/Reviews/Evaluations includes but is not limited to:
	1. Perform cursory reviews of technical studies and technology/project reports and develop summaries thereof
	2. Assess selected research and/or technology development and demonstrations
	3. Conduct portfolio assessments of program elements to quantify the technical risk of achieving program goals and to identify areas of vulnerability
	4. Perform situational analyses that identify factors external to NETL that have the potential to adversely or positively affect projects and programs managed by NETL
	5. Conduct post-project assessments of selected technology development projects and demonstrations
* Technical Information includes but is not limited to:
	1. Generate information and data to support the development of program plans for programs implemented at and supported by NETL
	2. Conduct research and prepare information products to support responding questions about programs and projects managed by NETL
	3. Conduct research and analysis and develop text and graphical elements that describe programs and projects managed at NETL
	4. Prepare background technical information in support of the acquisition process
	5. Develop general outreach products and prepare narrative, technology, visualization materials, and tools for internal and external stakeholders, including on-demand, short notice, detailed presentations, technical brochures, and video productions
* Business/Partnership Development includes but is not limited to:
	1. Conduct background research relevant to the business or partnership opportunity identified to prepare the NETL representatives for meetings, discussions, and other interactions
	2. Facilitate discussions between NETL and potential partners that have been identified by completing meeting logistics and preparing talking points, formal presentations, infographics, and other engagement or briefing materials
	3. Maintain records of communication between NETL and the organization of interest
	4. Make recommendations to mature the nascent partnerships

**Strategic Analysis (SA):** Requires expertise in the application of scientific, engineering, business, economic, energy market, and policy-related disciplines that result in highly credible studies and analyses. The required technical expertise encompasses high level scientific and engineering disciplines appropriate to address the changing US energy outlook, as well as technology and system-specific engineering and market expertise required for expert analysis of alternatives. Expertise will be needed to address issues across diverse areas of national interest, incorporating broader energy-related initiatives involving both the government and the private sector. SA encompasses the following functional areas:

* Process and Cost Engineering includes but is not limited to:
	1. Assess the performance of integrated energy conversion systems containing commercial and/or novel technology components
	2. Assist in collaborating with NETL-sponsored intramural and extramural researchers to perform analyses
	3. Utilize optimization techniques to systematically assess optimal configurations for integrated advanced energy systems in lieu of reliance on a priori assumptions and traditional sensitivity cases
	4. Summarize, review and/or critique R&D and demonstration projects from a process and cost engineering perspective
	5. Assess technical and economic risks associated with RD&D
	6. Support development of RD&D goals and identification of gaps in RD&D plans and/or opportunities for new RD&D
	7. Support DOE program planning through analyses of engineering issues and test plans associated with transitioning advanced technologies across lab, pilot, and commercial scales
	8. Summarize, review, and/or critique third-party cost and performance assessments of energy conversion systems
	9. Review and expand NETL’s series of Quality Guidelines for Energy System Studies
* Financial Analysis includes but is not limited to:
	1. Review and assessment of RD&D project recipients’ pro forma funding plans and financial models
	2. Recommend appropriate project finance structures for different types of energy projects across various market and risk scenarios for use in NETL process and cost engineering estimates
	3. Maintain NETL’s Power Systems Financial Model, utilize it where applicable, and offer suggestions for improvement
* Life Cycle Analysis includes but is not limited to:
	1. Identifying, collecting, analyzing publicly available data to characterize existing operations and collaborating with industry experts and relevant stakeholders to ascertain the best available data to characterize each operation
	2. Developing and using environmental life cycle assessment models capable of management and analyzing life cycle inventory data
	3. Identifying environmental impacts to the biosphere caused by primary, secondary, or tertiary operations across the life cycle of energy technologies and developing impact characterization methodologies and factors to assess the potential benefits and drawbacks of such environmental interventions
	4. Identifying knowledge gaps in existing life cycle related data necessary to support decision-making processes
	5. Effectively communicating the quality of life cycle analyses based on existing data limitations to ensure proper use of study results
	6. Collecting primary data through interviews, surveys, and site visits to improve quality of existing unit process data to increase the accuracy and utility of study results
	7. Developing custom life cycle cost models capable of aggregating a broad range of cost information into a comparable platform to calculate and report results
	8. Assessing the uncertainty of life cycle analysis results based on the temporal, geophysical, and technical applicability of data to stated study goals and scope
* Economic, Market, and Regulatory Analysis includes but is not limited to:
	1. Analyze international and national energy and economic trends that impact the availability and progress of fossil-fuel based technology
	2. Analyze fuel, feedstock, and/or product markets
	3. Analyze electricity markets, particularly with respect to the valuation of generation and transmission assets, under varying regulatory and market conditions
	4. Perform market assessments for energy-related technologies of interest to NETL management
	5. Analyze the technical and economic implications of proposed legislation and regulation affecting the energy industry, energy technologies, and the economy of the United States
* Technology Deployment and Program Benefit Analysis includes but is not limited to:
	1. Applications of the methodologies and adherence to the guidelines pertaining to conducting federal economic analyses
	2. Installation of models and tools as requested on both federal and contractor network systems
	3. Assessment of published systems analyses to develop necessary technology cost and performance inputs for models and tools as requested
	4. Exercising models and tools as requested to develop analyses and evaluations of DOE programs
	5. Evaluation of models and tools to identify and analyze source code, variables and parameters of interest
	6. Gathering data and conducting analysis of potential export market opportunities and related benefits for technologies of interest using credible methodologies and models
	7. Application of econometric analysis, as applied to cross sectional, time series, and panel data, in order to formulate credible functions to be used to parameterize models and tools, as well as to perform stand-alone analysis of varying components of the energy sector
	8. Development of new modeling capabilities representing various components of the energy economy
	9. Performing economic impact analysis at the national, regional, state and local levels using credible input-output models and methods in order to quantify economic impacts of technology deployments
* Energy Infrastructure Analysis includes but is not limited to:
	1. Assessing electric power systems
	2. Tracking robust performance trends on the electric power system
	3. Tracking robust trends for changes in installation and usage of assets of the electric power system
	4. Evaluating impacts if existing and proposed legislation on electric power industry
	5. Examining the interplay of coal, natural gas, and oil resources with other energy sources including nuclear, solar, wind, geothermal, hydropower, and other unconventional energy resources
	6. Performing analyses on natural gas and petroleum systems, including but not limited to, assessment of costs and benefits, reliability, distribution optimization, environmental impacts, security and resiliency
* Subsurface Analysis includes but is not limited to:
	1. Evaluating the economic supply and exploring scenarios for the expanded use of unconventional natural gas
	2. Interpreting and documenting the relationship between recovery efficiency and well economics
	3. Gathering information on R&D being performed on the subjects of recovery efficiency and environmental protection by the oil and gas industry
	4. Developing regional price/supply projections for unconventional natural gas
	5. Determining minimum gas prices along with levels of drilling, production facilities, natural gas plants, pipelines, and storage facilities required to satisfy scenarios involving various levels of natural gas consumption
	6. Geologic modeling and numerical simulation of tight oil and shale gas horizontal completions in order to determine methods of optimizing the recovery efficiency
	7. Geologic modeling and numeric simulation of mature oil fields undergoing CO2 enhanced oil recovery using next generation technologies in order to determine technical performance and conduct cost/benefit analyses
	8. Developing detailed cost estimates for all aspects of oil and natural gas exploration and production.

With regard to underground CO2 storage (and joint EOR/storage operations), analyses may include, but are not limited to, the following:

* 1. Developing detailed cost estimates for all aspects of CO2 storage project, modeling of economic performance, and calculation of key economic metrics
	2. Developing detailed cost estimates for all aspects of pipelines for transporting CO2, oil and natural gas
	3. Estimating geographically heterogeneous leasing and transaction costs associated with CO2 storage and CO2 EOR/storage projects
	4. Applying federal and relevant state regulations to the design of systems to store CO2 and recover subsurface energy resources
	5. Applying financial responsibility instruments under EPA UIC Class VI regulations

The information gathered from this Sources Sought Notice will be used by the Government in determining the appropriate type of contract (expected to be predominately cost reimbursement), business type, period of performance, set-side requirements, and used to refine the requirements for these services. NETL anticipates that a successor entity would provide the core competencies led by experienced key personnel backed by a corporate structure experienced in providing these type of support services.

**EXPRESSION OF INTEREST/CAPABILITY STATEMENT:**

With specific emphasis placed on the areas of support described in the above sections, interested organizations are requested to provide a capability statement (brief discussion) that does not exceed 20 pages in total (including cover page) and no smaller than 11-point font with 1 inch margins and in either MS Word (.doc or .docx) or Adobe Acrobat (.pdf) format. The provided information must be in sufficient detail to allow the Government to analyze the current market conditions. As such, the following information is requestedto be included in all responses:

1. A cover page (no longer than one page) which provides the following information: The entities name, address, phone number, email address for the point of contact, DUNS number, CAGE code (if applicable), business size (as it relates to the above stated NAICS code and size standard information listed and in accordance with the SBA size standards), type of ownership for the organization, and how long your company has provided these types of services. Specify the small business classification: small business, small disadvantaged business, woman owned, veteran owned, disabled veteran owned, 8(a) or HUB Zone. (Note: If a teaming arrangement is proposed, your business size should be considered large unless you have obtained written SBA approval for your team to be considered in another size category.)
2. Describe your organization’s abilities in performing the requirements as described above. Clearly identify which requirements (**mission execution, strategic analysis, or both**) your organziation is providing capabilities in response to. Describe the experience in performing, what was performed, and whether or not you intend to perform these requirements as the Prime contractor or whether you are providing information from a teaming perspective. If providing as a teaming organization, describe each team members information separately so that a full picture can be determined on who has capabilities for which sections of the requirement. Specify your technical capabilities to perform the specific requirements for mission execution, strategic analysis, or mission execution and strategic analysis as a whole. The description should address specific information to clearly identify the organizations capability to support claims of organizational and staffing capability.
3. Identify any performance challenges and potential risks in meeting the requirements as described above and how your organization minimizes any risks in order to satisfactorily perform requirements similar to those described in this notice.
4. Describe your organization’s ability to assume the financial responsibilities associated with receiving a contract of this projected dollar amount. Specifically, discuss the assurance that resources are available to meet payroll, subcontracting, and material obligations at this magnitude. Please do not provide financial statements as part of your response; it should be limited to discussion of the rationale.
5. Describe your organization’s ability to ensure a seamless contract transition. Provide any past experiences with contract transition of this size and nature.
6. If subcontracting is anticipated, describe your organization’s experience in successfully managing subcontracts. Include a detailed description of how your organization guarantees the performance and participation of the potential subcontractor, including a description of the type and expected levels of subcontracting (magnitude) as well as the type of work that a subcontractor may perform for your organization. Furthermore, identify the technical capabilities the subcontractor encompasses and for which specific requirements they will be used to execute the work; rather for mission execution, strategic analysis, or the mission execution and strategic analysis work as a whole, if applicable. It should be clear whether the subcontractor is being used to fill gaps in capabilities from the prime or whether it is to compliment the prime’s capabilities.
7. If your organization holds a GSA (or other) schedule for performing these type services, please include the GSA contract number and the schedule number to which it was issued.

**DISCLAIMERS AND INFORMATION:** DOE reserves the right to use any and all information submitted by, or obtained from, an interested party in any manner DOE determines appropriate, including, but not limited to, the creation of a competitive solicitation. An interested party should avoid including any classified, business confidential, and/or proprietary information in its response. However, if an interested party must submit such information, the information must be clearly marked accordingly, and the interested party must provide sufficient justification as to why such information is classified, business confidential, and/or proprietary.

All interested parties responding to this Sources Sought Notice must submit their responses no later than 4:00 PM Eastern Daylight Time on **March 16, 2020** through the FedConnect Portal or to Amanda.Lopez@netl.doe.gov. For consistency purposes, responses are to be submitted electronically in either MS Word (.doc or .docx) or Adobe Acrobat (.pdf) format using a minimum of 11-point font and allowing for 1-inch margins no more than 20 pages in length. Sources Sought responses may be attached to a notification in the Message Center portion of FedConnect. Information regarding how to submit information via FedConnect can be found at <https://www.fedconnect.net>. DOE personnel may contact firms responding to this announcement to clarify a responder’s capabilities, discuss potential contractual mechanisms, or obtain other information as part of this market research process.

Please note that FedConnect is owned and operated by Compusearch Software Systems, Inc., not by the Department of Energy and therefore the Government does not provide help desk assistance for FedConnect. For assistance with FedConnect, please contact the FedConnect helpdesk directly:

By email: support@FedConnect.net. By phone: 1-800-899-6665 (8:00 a.m. to 8:00 p.m. Eastern Daylight

Time, except Federal Holidays).

You are strongly encouraged to submit your Expression of Interest/Capability Statement in response to this Sources Sought Notice at least 24 hours before the specified due date in order to have time to resolve any transmission problems.

As previously indicated, this is NOT a solicitation; therefore, no cost or pricing information should be provided. Telephone inquiries will not be accepted or acknowledged, and no feedback or evaluations will be provided to companies regarding their submissions. This is a market survey to identify potential sources capable of performing the effort required. Responses should be limited to the entity’s expression of interest and capabilities statement (as identified above) along with their respective business size based upon the list provided. It is not mandatory for an offeror to respond to this Sources Sought Notice in order to be eligible for proposing on a subsequent solicitation when/if issued.