



**N A R U C**  
National Association of Regulatory Utility Commissioners

## **Request for Proposals**

### **Briefing Paper on Carbon Dioxide Pipelines: State and Federal Regulatory, Permitting, and Enforcement Responsibilities**

**Solicitation Number: NARUC-2022-RFP129-  
FE3095-REV-1**

Released: October 5, 2022

Expressions of Interest Due: October 7, 2022

Responses Due: October 14, 2022

Center for Partnerships & Innovation  
National Association of Regulatory Utility Commissioners  
1101 Vermont Avenue NW, Suite 200  
Washington, D.C. 20005

Note on applicants' eligibility: All applicants must meet the *U.S. Department of Energy* Mandatory Requirements and Standard Provisions (Annex I).

## **I. Introduction and Background Information**

With funding support from the U.S. Department of Energy (*DOE*) Office of Fossil Energy and Carbon Management, the National Association of Regulatory Utility Commissioners (*NARUC*) seeks to engage a *Consultant* to research and write a publication exploring state and federal responsibilities for the economic and safety regulation, permitting, and enforcement of carbon dioxide pipelines. This publication is part of *NARUC*'s work under the DOE-*NARUC* Coal Modernization and Carbon Management Partnership, a collaborative effort to provide technical assistance resources and support to state public utility commissions (*PUCs*) on topics relating to coal-fired power; carbon capture, utilization, and storage (*CCUS*); and fossil energy transition challenges. The Partnership is administered by the *NARUC* Center for Partnerships and Innovation (*CPI*).

## **II. Objective**

The overall objective of this consultancy is to support *NARUC*'s development of valuable resources for members of the Subcommittee on Clean Coal and Carbon Management and the Staff Subcommittee on Clean Coal and Carbon Management. These subcommittees have supported discussions on *CCUS* at previous *NARUC* meetings and webinars, focusing on challenges and roles for state *PUCs*. During these discussions among commissioners, *PUC* staff, and diverse subject matter experts, the lack of dedicated pipelines to transport captured carbon from fossil fuel electricity generation facilities, industrial sites, and other point sources to locations for carbon utilization or geologic sequestration has been noted as a barrier to the broader deployment of carbon capture technologies. In order to achieve state and federal decarbonization goals, many policymakers and regulators are actively exploring the appropriate role for *CCUS* and discussing strategies to reduce barriers to its deployment. One such strategy is to facilitate an expansion of dedicated pipelines; however, experts note a lack of clarity on the regulatory treatment, permitting requirements, and safety enforcement for such pipelines, as well as blurred lines between the responsibilities of the Pipeline and Hazardous Materials Safety Administration (*PHMSA*), other federal agencies, state pipeline permitting agencies and commissions, state *PUC* pipeline safety staff, and other state pipeline safety enforcement entities. The output from this engagement will be one publication providing information about the economic and safety regulation, permitting, and enforcement of a growing network of dedicated carbon dioxide pipelines. The publication will address these areas of uncertainty and identify specific questions for which federal and/or state statutory clarity may be needed.

## **III. Approach, Statement of Work, Timeline, and Deliverables**

*NARUC* is seeking to engage a *Consultant* (organization or independent consultant) for various expert services and tasks as described below. *NARUC* envisions that this project will be initiated in October 2022 and conclude in April 2023. All specified deliverables are to be completed and submitted by the *Consultant* prior to the end of the period of performance. Interim deliverable dates are approximate and subject to change by mutual agreement between *NARUC* and the *Consultant*.

The *Consultant(s)* will conduct background research, facilitate interviews, and draft a briefing paper that provides context as to why increased availability of dedicated carbon dioxide pipelines is important to broader CCUS deployment, information about the roles of federal and state regulators in overseeing the permitting, safety, and affordability of these pipelines, and unanswered questions about federal and state economic and safety regulation and enforcement of a growing network of dedicated carbon dioxide pipelines. *NARUC* recommends that the *Consultant* perform the following steps to complete this work:

### **Task 1 – Finalize outline**

*NARUC* has provided a draft outline in Annex IV based on *NARUC* staff’s familiarity with the subject matter. To begin the project, *NARUC* welcomes suggestions from the *Consultant* on changes to the outline that would result in a more valuable and relevant resource for state PUCs.

#### Deliverables:

- List of any proposed additions, subtractions, reorganizations, and other edits to the outline (by November 18).
- Meeting with *NARUC* to discuss implementing the changes (by December 2).

*NARUC* will deliver a final, agreed-upon outline to the *Consultant* following the meeting.

### **Task 2 – Draft briefing paper and distribute for review**

Based on the finalized outline, the *Consultant* will begin research and writing for a draft briefing paper. If needed, *NARUC* is available to assist the *Consultant* in conducting informational interviews with PUC commissioners and commission staff as well as federal staff identified by the *Consultant*. The *Consultant* can set up interviews with external subject matter experts without *NARUC*’s involvement. The draft briefing paper should address all areas identified in the finalized outline and should be no more than 30 pages, excluding title page, table of contents, and citations.

Following receipt of the draft briefing paper, *NARUC* staff will conduct an internal review before distributing the draft to a review committee composed of PUC commissioners and staff, *DOE* and National Energy Technology Laboratory staff, and external subject matter experts, identified by *NARUC* with input from the *Consultant*.

#### Deliverables:

- List of recommended non-PUC reviewers, which may include representatives of federal and other state government entities, power generators, pipeline companies, CCUS advocates, and other perspectives (by December 23).
- Draft briefing paper, in the *Consultant*’s chosen format (by February 17).

*NARUC* will provide a list of PUC reviewers to complement the *Consultant*’s suggested subject matter experts. Once deemed acceptable, *NARUC* will distribute the draft to the full review committee. Reviewers will be given at least two weeks to review the draft.

### **Task 3 – Review and incorporate comments into final draft**

*NARUC* will deliver reviewer comments to the *Consultant*. The *Consultant* will review, centralize, and (if needed) reconcile comments, giving priority to PUC reviewers. The *Consultant* will incorporate reviewer comments into a final draft to be delivered to *NARUC*.

Deliverables:

- Final draft briefing paper, in the *Consultant's* chosen format (by March 31).

**Task 4 – Disseminate results**

*NARUC* will complete the process of copyediting, designing, and finalizing the briefing paper as a publication conforming to *NARUC's* publications format. The *Consultant* will present conclusions from the briefing paper during a virtual briefing with *NARUC* members and the public. The *Consultant* will prepare a PowerPoint presentation for review by *NARUC* prior to the webinar.

Deliverables:

- Webinar presentation and recording for posting on *NARUC's* website (by April 28).

As the *Consultant* undertakes work, *NARUC* recommends the review of previously released *NARUC* publications and past webinars with relevance to the scope of this project. These resources are available at: <https://www.naruc.org/cpi-1/energy-infrastructure-modernization/coal-modernization-and-carbon-management/>.

The *Consultant* will coordinate closely and work at the direction of the *NARUC* Center for Partnerships & Innovation Staff on all task activities.

**Other Reporting Requirements**

*NARUC* expects the *Consultant* to submit monthly invoices summarizing activities undertaken during the month. The *Consultant's* monthly invoice and progress reports will be in accordance with the template in Annex II, Sample 1.

**IV. Period of Performance**

This project is estimated to last from approximately November 1, 2022 to April 28, 2023.

**V. Project Budget**

The budget should reflect a cost reimbursable consulting agreement. This is a competitively bid project paid for with federal funds; costs should be feasible and prudent. The *Consultant* must submit cost proposals by task and sub-task for the entire Statement of Work, following the budget template included in Annex III of the RFP.

**Compensation:** *NARUC* shall reimburse the *Consultant* for time and other direct costs, not to exceed the ceiling price in accordance with the Budget Proposal (Annex III) for work outlined in statement of work, Section III of the RFP. Any travel must be pre-approved by *NARUC* and costs will be reimbursed via reimbursement authorization for travel (RAFT) form in accordance with Federal Travel Regulations and guidelines. No travel is expected during this agreement.

*NARUC* shall directly pay and/or reimburse *Consultant* costs (non-travel) as described below:

- a. **RFP Budget item: Consultant Labor**
- b. **RFP Budget item: Reimbursable Other Direct Costs**
- c. **RFP Budget item: Indirect Costs, if applicable**

### **Rejection of Proposals & Incurred Costs**

*NARUC* reserves the right to reject any or all submitted proposals not in conformance with this RFP, or for other causes. *NARUC* shall not be liable for any costs incurred by any *Consultant* prior to the execution of a contract.

## **VI. Grant Requirements**

The work for this Request for Proposals (RFP) will be undertaken as part of the U.S. Department of Energy (*DOE*) Cooperative Agreement, DE-FE0032095, with *NARUC*. *DOE* reserves the right to alter any activities under this RFP, subject to availability of funds.

The prime award/agreement consists of DOE Assistance Regulations, 2 CFR part 200 as amended by 2 CFR part 910 at <http://www.eCFR.gov>. Respondents must be able to ensure compliance with monitoring procedures in accordance with all provisions of 2 CFR 200, 2 CFR 910, and all Standard and Mandatory Provisions attached to this RFP in Annex 1.

## **VII. Responding to the RFP**

All questions regarding the RFP should be directed to *NARUC* by email to [kzitelman@naruc.org](mailto:kzitelman@naruc.org). Please submit an initial expression of interest (EOI) by October 7, 2022 to Kiera Zitelman, [kzitelman@naruc.org](mailto:kzitelman@naruc.org), to ensure receipt of any respondent questions and answers.

Submit responses to the RFP to [RFPs@naruc.org](mailto:RFPs@naruc.org) by e-mail. **RFP responses are due no later than 11:59 pm EST on October 14, 2022.**

Please limit your description of relevant experience and narrative addressing the proposed approach and treatment of the project tasks to no more than six (6) pages. Responses shall fully address the following within the page limit:

- Cover letter
- Proposed approach and proposed treatment of the tasks and sub-tasks with a view toward expected deliverables
- Description of relevant experience
- One-page resume(s) of staff expected to work on the project (not included in page limit)
- Proposed budget, using template provided in Annex III (not included in page limit)

## **VIII. Consultant Selection & Evaluation Criteria – Required Qualifications**

*NARUC* will select a *Consultant*(s) through a competitive selection process, which will include consideration of the following:

- Availability
- Competitive budget proposal
- Existing knowledge of relevant energy and investment issues and entities

- Quality of academic and professional experience in relevant fields
- Strong oral and written communication skills

The *NARUC* Evaluation Team will use the following criteria in assessing all responses to this RFP.

**Technical Experience and Applicant Qualifications (35% of total score)**

1. Relevant experience in proposed topics and work in energy sector, particularly with state utility commissions and/or Wall Street and the investment community.
2. Adequate level of technical knowledge to meet the demands of the project.
3. Quality of academic and professional experience in relevant field.

**Proposed Approach for Implementation (45% of total score)**

1. Proposal responds to the outlined topics in the RFP.
2. Ability to identify technical assistance needs and information gaps to help regulators move from their current status towards goals and results.
3. Existing resources / consultant availability to meet needs of rapid deployment.
4. Overall quality and professionalism of the proposal (well written, structured and organized) and materials provided in the format requested.

**Budget (20% of total score)**

1. Given the scope, are the hourly rates and estimated costs appropriate?
2. Does overall cost reflect an efficient value for the level of effort?
3. Is the level of effort for each task appropriate?

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***ATTENTION: NEW DUNS REQUESTS***

Due to the Unique Entity ID transition on 4/4/22, Dun and Bradstreet (D&B) is no longer accepting new DUNS Number requests or updates to names or addresses of existing DUNS Numbers for the purpose of doing business with the U.S. federal government. If you require a unique entity identifier for SAM.gov entity registration or an update to your entity name or address, go to SAM.gov on or after 4/4/22 to complete the process.

SAM.gov is expected to be accessible no later than 9:00 AM EST Monday, April 4, 2022. This downtime is to implement the system changes needed to transition from using DUNS numbers to using Unique Entity IDs.

## **ANNEX I: Additional Flow Down Requirements Applicable to the Subaward**

Department of Energy (DOE) Cooperative Agreement, DE-FE0032095

This award/agreement consists of DOE Assistance Regulations, 2 CFR part 200 as amended by 2 CFR part 910 at <http://www.eCFR.gov>.

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### ***CONFERENCE SPENDING (FEBRUARY 2015)***

The recipient shall not expend any funds on a conference not directly and programmatically related to the purpose for which the grant or cooperative agreement was awarded that would defray the cost to the United States Government of a conference held by any Executive branch department, agency, board, commission, or office for which the cost to the United States Government would otherwise exceed \$20,000, thereby circumventing the required notification by the head of any such Executive Branch department, agency, board, commission, or office to the Inspector General (or senior ethics official for any entity without an Inspector General), of the date, location, and number of employees attending such conference.

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### ***SITE VISITS***

DOE/NNSA's authorized representatives have the right to make site visits at reasonable times to review project accomplishments and management control systems and to provide technical assistance, if required. You must provide, and must require your subrecipients to provide, reasonable access to facilities, office space, resources, and assistance for the safety and convenience of the government representatives in the performance of their duties. All site visits and evaluations must be performed in a manner that does not unduly interfere with or delay the work..

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### ***REPORTING REQUIREMENTS (APRIL 2018)***

a. Requirements. The reporting requirements for this award are identified on the Federal Assistance Reporting Checklist, DOE F 4600.2, attached to this award. Failure to comply with these reporting requirements is considered a material noncompliance with the terms of the award. Noncompliance may result in withholding of future payments, suspension, or termination of the current award, and withholding of future awards. A willful failure to perform, a history of failure to perform, or unsatisfactory performance of this and/or other financial assistance awards, may also result in a debarment action to preclude future awards by Federal agencies.

b. Dissemination of scientific/technical reporting products. Reporting project results in scientific and technical information (STI) publications/products to the DOE Office of Scientific and Technical Information (OSTI) ensures dissemination of research results to the public as well as preservation of the results. The DOE form F 4600.2, B. Scientific/Technical Reporting, has instructions for the DOE Energy Link (E-Link) system managed by OSTI. Scientific/technical reports and other STI products submitted under this award will be disseminated publicly on the Web via OSTI.GOV (<https://www.osti.gov>), unless the STI contains patentable material, protected data, or SBIR/STTR data, which must be indicated per instructions in DOE 4600.2.

c. Restrictions. STI products submitted to the DOE via E-link must not contain any Protected Personally Identifiable Information (PII), classified information, information subject to export control classification, or other information not subject to release.

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## ***PUBLICATIONS***

- a. You are encouraged to publish or otherwise make publicly available the results of the work conducted under the award.
- b. An acknowledgment of Federal support and a disclaimer must appear in the publication of any material, whether copyrighted or not, based on or developed under this project, as follows:

Acknowledgment: "This material is based upon work supported by the Department of Energy under Award Number DE-FE0032095."

Disclaimer: "This report was prepared as an account of work sponsored by an agency of the United States Government. Neither the United States Government nor any agency thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof. The views and opinions of authors expressed herein do not necessarily state or reflect those of the United States Government or any agency thereof."

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## ***FEDERAL, STATE, AND MUNICIPAL REQUIREMENTS***

You must obtain any required permits and comply with applicable federal, state, and municipal laws, codes, and regulations for work performed under this award.

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## ***INTELLECTUAL PROPERTY PROVISIONS AND CONTACT INFORMATION***

- a. The intellectual property provisions applicable to this award are provided as an attachment to this award or are referenced on the Assistance Agreement Face Page. A list of all intellectual property provisions may be found at <http://energy.gov/gc/standard-intellectual-property-ip-provisions-financial-assistance-awards>
- b. Questions regarding intellectual property matters should be referred to the DOE Award Administrator and the Patent Counsel designated as the service provider for the DOE office that issued the award. The IP Service Providers List is found at <http://energy.gov/gc/downloads/intellectual-property-ip-service-providers-acquisition-and-assistance-transactions>

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## ***NATIONAL SECURITY: CLASSIFIABLE RESULTS ORIGINATING UNDER AN AWARD (DECEMBER 2014)***

1. This award is intended for unclassified, publicly releasable research. You will not be granted access to classified information. DOE/NNSA does not expect that the results of the research project will involve classified information. Under certain circumstances, however, a classification review of information originated under the award may be required. The Department may review research work generated under this award at any time to determine if it requires classification.
2. Executive Order 12958 (60 Fed. Reg. 19,825 (1995)) states that basic scientific research information not clearly related to the national security shall not be classified. Nevertheless, some information concerning (among other things) scientific, technological, or economic matters relating to national security or cryptology may



require classification. If you originate information during the course of this award that you believe requires classification, you must promptly:

1. Notify the DOE Project Officer and the DOE Award Administrator;
2. Submit the information by registered mail directly to the Director, Office of Classification and Information Control, SO-10.2; U.S. Department of Energy; P.O. Box A; Germantown, MD 20875-0963, for classification review.
3. Restrict access to the information to the maximum extent possible until you are informed that the information is not classified, but no longer than 30 days after receipt by the Director, Office of Classification and Information Control.

3. If you originate information concerning the production or utilization of special nuclear material (i.e., plutonium, uranium enriched in the isotope 233 or 235, and any other material so determined under section 51 of the Atomic Energy Act) or nuclear energy, you must:

- Notify the DOE Project Officer and the DOE Award Administrator;
- Submit the information by registered mail directly to the Director, Office of Classification and Information Control, SO-10.2; U.S. Department of Energy; P. O. Box A; Germantown, MD 20875-0963 for classification review within 180 days of the date the recipient first discovers or first has reason to believe that the information is useful in such production or utilization; and
- Restrict access to the information to the maximum extent possible until you are informed that the information is not classified, but no longer than 90 days after receipt by the Director, Office of Classification and Information Control.

4. If DOE determines any of the information requires classification, you agree that the Government may terminate the award with consent of the recipient in accordance with 2 CFR part 200.339(a)(3). All material deemed to be classified must be forwarded to the DOE, in a manner specified by DOE.

5. If DOE does not respond within the specified time periods, you are under no further obligation to restrict access to the information.

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### ***NOTICE REGARDING THE PURCHASE OF AMERICAN-MADE EQUIPMENT AND PRODUCTS – SENSE OF CONGRESS***

It is the sense of the Congress that, to the greatest extent practicable, all equipment and products purchased with funds made available under this award should be American-made.

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### ***INSURANCE COVERAGE (DECEMBER 2014)***

See 2 CFR 200.310 for insurance requirements for real property and equipment acquired or improved with Federal funds.

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### ***REAL PROPERTY (DECEMBER 2014)***

Subject to the conditions set forth in 2 CFR Part 200.311, title to real property acquired or improved under a Federal award will vest upon acquisition in the non-Federal entity.

The non-Federal entity cannot encumber this property and must follow the requirements of 2 CFR Part 200.311 before disposing of the property.

Except as otherwise provided by Federal statutes or by the Federal awarding agency, real property will be used for the originally authorized purpose as long as needed for that purpose. When real property is no longer needed for the originally authorized purpose, the non-Federal entity must obtain disposition

instructions from the Federal awarding agency or passthrough entity. The instructions must provide for one of the following alternatives:

1. Retain title after compensating the Federal awarding agency as described in 2 CFR Part 200.311(c)(1);
2. Sell the property and compensate the federal awarding agency as specified in CFR Part 200.311(c)(2);  
or
3. Transfer title to the Federal awarding agency or to a third Party designated/approved by the Federal awarding agency as specified in CFR Part 200.311(c)(3).

See 2 CFR Part 200.311 for additional requirements pertaining to real property acquired or improved under a Federal award.

Also see 2 CFR Part 910.360 for amended requirements for Real Property for For-Profit recipients.

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### ***EQUIPMENT (DECEMBER 2014)***

Subject to the conditions provided in 2 CFR Part 200.313, title to equipment (property) acquired under a Federal award will vest conditionally with the non-Federal entity.

The non-Federal entity cannot encumber this property and must follow the requirements of 2 CFR Part 200.313 before disposing of the property.

States must use equipment acquired under a Federal award by the state in accordance with state laws and procedures.

Equipment must be used by the non-Federal entity in the program or project for which it was acquired as long as it is needed, whether or not the project or program continues to be supported by the Federal award. When no longer needed for the originally authorized purpose, the equipment may be used by programs supported by the Federal awarding agency in the priority order specified in 2 CFR Part 200.313(c)(1)(i) and (ii).

Management requirements, including inventory and control systems, for equipment are provided in 2 CFR Part 200.313(d).

When equipment acquired under a Federal award is no longer needed, the non-Federal entity must obtain disposition instructions from the Federal awarding agency or pass-through entity.

Disposition will be made as follows:

1. Items of equipment with a current fair market value of \$5,000 or less may be retained, sold, or otherwise disposed of with no further obligation to the Federal awarding agency;
2. Non-Federal entity may retain title or sell the equipment after compensating the Federal awarding agency as described in 2 CFR Part 200.313(e)(2); or
3. Transfer title to the Federal awarding agency or to an eligible third Party as specified in CFR Part 200.313(e)(3).

See 2 CFR Part 200.313 for additional requirements pertaining to equipment acquired under a Federal award. Also see 2 CFR Part 200.439 Equipment and other capital expenditures.

See 2 CFR Part 910.360 for amended requirements for Equipment for For-Profit recipients.

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### ***SUPPLIES (DECEMBER 2014)***

See 2 CFR Part 200.314 for requirements pertaining to supplies acquired under a Federal award.

See also § 200.453 Materials and supplies costs, including costs of computing devices.

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### ***INTANGIBLE PROPERTY (DECEMBER 2014)***

Title to intangible property (as defined in 2 CFR Part 200.59) acquired under a Federal award vests upon acquisition in the non-Federal entity. Intangible property includes trademarks, copyrights, patents and patent applications.

See 2 CFR Part 200.315 for additional requirements pertaining to intangible property acquired under a Federal award. Also see 2 CFR Part 910.362 for amended requirements for Intellectual Property for For-Profit recipients.

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### ***INSOLVENCY, BANKRUPTCY OR RECEIVERSHIP***

- a. You shall immediately notify the DOE of the occurrence of any of the following events:
- you or your parent's filing of a voluntary case seeking liquidation or reorganization under the Bankruptcy Act;
  - your consent to the institution of an involuntary case under the Bankruptcy Act against you or your parent;
  - the filing of any similar proceeding for or against you or your parent, or its consent to, the dissolution, winding-up or readjustment of your debts, appointment of a receiver, conservator, trustee, or other officer with similar powers over you, under any other applicable state or federal law; or
- your insolvency due to your inability to pay your debts generally as they become due.
- b. Such notification shall be in writing and shall:
- specifically set out the details of the occurrence of an event referenced in paragraph a;
  - provide the facts surrounding that event; and
  - provide the impact such event will have on the project being funded by this award.
- c. Upon the occurrence of any of the four events described in the first paragraph, DOE reserves the right to conduct a review of your award to determine your compliance with the required elements of the award (including such items as cost share, progress towards technical project objectives, and submission of required reports). If the DOE review determines that there are significant deficiencies or concerns with your performance under the award, DOE reserves the right to impose additional requirements, as needed, including
- change your payment method; or
  - institute payment controls.
- d. Failure of the Recipient to comply with this term may be considered a material noncompliance of this financial assistance award by the Contracting Officer.

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## ***PROPERTY TRUST RELATIONSHIP (DECEMBER 2014)***

Real property, equipment, and intangible property, that are acquired or improved with a Federal award must be held in trust by the non-Federal entity as trustee for the beneficiaries of the project or program under which the property was acquired or improved.

See 2 CFR Part 200.316 for additional requirements pertaining to real property, equipment, and intangible property acquired or improved under a Federal award.

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## ***PERFORMANCE OF WORK IN UNITED STATES***

The Recipient agrees that at least **100%** of the direct labor cost for the project (including subrecipient labor) shall be incurred in the United States, unless the Recipient can demonstrate to the satisfaction of the Department of Energy that the United States economic interest will be better served through a greater percentage of the work being performed outside the United States.

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## ***REPORTING SUBAWARDS AND EXECUTIVE COMPENSATION***

### 1. Reporting of first-tier subawards.

- **Applicability.** Unless you are exempt as provided in paragraph d. of this award term, you must report each action that obligates \$25,000 or more in Federal funds that does not include Recovery funds (as defined in section 1512(a)(2) of the American Recovery and Reinvestment Act of 2009, Pub. L. 111-5) for a subaward to an entity (see definitions in paragraph e. of this award term).
- **Where and when to report.**
  - You must report each obligating action described in paragraph a.1. of this award term to <http://www.fsrs.gov>.
  - For subaward information, report no later than the end of the month following the month in which the obligation was made. (For example, if the obligation was made on November 7, 2010, the obligation must be reported by no later than December 31, 2010.)
- **What to report.** You must report the information about each obligating action that the submission instructions posted at <http://www.fsrs.gov> specify.

### 2. Reporting Total Compensation of Recipient Executives.

- **Applicability and what to report.** You must report total compensation for each of your five most highly compensated executives for the preceding completed fiscal year, if
  - the total Federal funding authorized to date under this award is \$25,000 or more;
  - in the preceding fiscal year, you received;
    - 80 percent or more of your annual gross revenues from Federal procurement contracts (and subcontracts) and Federal financial assistance

subject to the Transparency Act, as defined at 2 CFR 170.320 (and subawards); and

- \$25,000,000 or more in annual gross revenues from Federal procurement contracts (and subcontracts) and Federal financial assistance subject to the Transparency Act, as defined at 2 CFR 170.320 (and subawards);

and

- The public does not have access to information about the compensation of the executives through periodic reports filed under section 13(a) or 15(d) of the Securities Exchange Act of 1934 (15

U.S.C. 78m(a), 78o(d)) or section 6104 of the Internal Revenue Code of 1986. (To determine if the public has access to the compensation information, see the U.S. Security and Exchange

Commission total compensation filings at <http://www.sec.gov/answers/execomp.htm>.)

- Where and when to report. You must report executive total compensation described in paragraph b.1. of this award term:
- As part of your registration profile at <http://www.sam.gov>.
  - By the end of the month following the month in which this award is made, and annually thereafter.

### 3. Reporting of Total Compensation of Subrecipient Executives.

- Applicability and what to report. Unless you are exempt as provided in paragraph d. of this award term, for each first-tier subrecipient under this award, you shall report the names and total compensation of each of the subrecipient's five most highly compensated executives for the subrecipient's preceding completed fiscal year, if;
- in the subrecipient's preceding fiscal year, the subrecipient received;
  - 80 percent or more of its annual gross revenues from Federal procurement contracts (and subcontracts) and Federal financial assistance subject to the Transparency Act, as defined

at 2 CFR 170.320 (and subawards); and

- \$25,000,000 or more in annual gross revenues from Federal procurement contracts (and subcontracts), and Federal financial assistance subject to the Transparency Act (and subawards); and
- The public does not have access to information about the compensation of the executives through periodic reports filed under section 13(a) or 15(d) of the Securities Exchange Act of 1934 (15

U.S.C. 78m(a), 78o(d)) or section 6104 of the Internal Revenue Code of 1986. (To determine if the public has access to the compensation information, see the U.S. Security and Exchange Commission total compensation filings at <http://www.sec.gov/answers/execomp.htm>.)

- Where and when to report. You must report subrecipient executive total compensation described in paragraph c.1. of this award term:
- To the recipient.
  - By the end of the month following the month during which you make the subaward. For example, if a subaward is obligated on any date during the month of October of a given year ( i.e., between October 1 and 31), you must report any required compensation information of the subrecipient by November 30 of that year.

### 4. Exemptions

If, in the previous tax year, you had gross income, from all sources, under \$300,000, you are exempt from the requirements to report:

- a. Subawards, and
- b. The total compensation of the five most highly compensated executives of any subrecipient.

### 5. Definitions. For purposes of this award term:

- Entity means all of the following, as defined in 2 CFR part 25:
  - A Governmental organization, which is a State, local government, or Indian tribe;
  - A foreign public entity;
  - A domestic or foreign nonprofit organization;
  - A domestic or foreign for-profit organization;
  - A Federal agency, but only as a subrecipient under an award or subaward to a non-Federal entity.
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- Executive means officers, managing partners, or any other employees in management positions.
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- Subaward:

- This term means a legal instrument to provide support for the performance of any portion of the substantive project or program for which you received this award and that you as the recipient award to an eligible subrecipient.
  - The term does not include your procurement of property and services needed to carry out the project or program (for further explanation, see Sec. \_\_\_\_ .210 of the attachment to OMB Circular A-133, Audits of States, Local Governments, and Non-Profit Organizations).
- A subaward may be provided through any legal agreement, including an agreement that you or a subrecipient considers a contract.
- Subrecipient means an entity that:
    - Receives a subaward from you (the recipient) under this award; and
    - Is accountable to you for the use of the Federal funds provided by the subaward.
- Total compensation means the cash and noncash dollar value earned by the executive during the recipient's or subrecipient's preceding fiscal year and includes the following (for more information see 17 CFR 229.402(c)(2)):
    - Salary and bonus.
    - Awards of stock, stock options, and stock appreciation rights. Use the dollar amount recognized for financial statement reporting purposes with respect to the fiscal year in accordance with the Statement of Financial Accounting Standards No. 123 (Revised 2004) (FAS 123R), Shared Based Payments.
    - Earnings for services under non-equity incentive plans. This does not include group life, health, hospitalization or medical reimbursement plans that do not discriminate in favor of executives, and are available generally to all salaried employees.
    - Change in pension value. This is the change in present value of defined benefit and actuarial pension plans.
    - Above-market earnings on deferred compensation which is not tax-qualified.
    - Other compensation, if the aggregate value of all such other compensation (e.g. severance, termination payments, value of life insurance paid on behalf of the employee, perquisites or property) for the executive exceeds \$10,000.

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***SYSTEM FOR AWARD MANAGEMENT AND UNIVERSAL IDENTIFIER REQUIREMENTS***

**a. Requirement for Registration in the System for Award Management (SAM)**

Unless you are exempted from this requirement under 2 CFR 25.110, you as the recipient must maintain the currency of your information in SAM until you submit the final financial report required under this award or receive the final payment, whichever is later. This requires that you review and update the information at least annually after the initial registration, and more frequently if required by changes in your information or another award term.

b. If you had an active registration in the CCR, you have an active registration in SAM.

**Requirement for Data Universal Numbering System (DUNS) Numbers**

If you are authorized to make subawards under this award, you:



a. Must notify potential subrecipients that no entity (see definition in paragraph C of this award term) may receive a subaward from you unless the entity has provided its DUNS number to you.

b. May not make a subaward to an entity unless the entity has provided its DUNS number to you.

c. Definitions

For purposes of this award term:

a. System for Award Management (SAM) means the Federal repository into which an entity must provide information required for the conduct of business as a recipient. Additional information about registration procedures may be found at the SAM Internet site (currently at <http://www.sam.gov>).

b. Data Universal Numbering System (DUNS) number means the nine-digit number established and assigned by Dun and Bradstreet, Inc. (D&B) to uniquely identify business entities. A DUNS number may be obtained from D&B by telephone (currently 866-705-5711) or the Internet (currently at <http://fedgov.dnb.com/webform>).

c. Entity, as it is used in this award term, means all of the following, as defined at 2 CFR part 25, subpart C:

1. A Governmental organization, which is a State, local government, or Indian Tribe;
2. A foreign public entity;
3. A domestic or foreign nonprofit organization;
4. A domestic or foreign for-profit organization; and
5. A Federal agency, but only as a subrecipient under an award or subaward to a non-Federal entity.

d. Subaward:

1. This term means a legal instrument to provide support for the performance of any portion of the substantive project or program for which you received this award and that you as the recipient award to an eligible subrecipient.
2. The term does not include your procurement of property and services needed to carry out the project or program (for further explanation, see Sec. \_\_.210 of the attachment to OMB Circular A-133, Audits of States, Local Governments, and Non-Profit Organizations).
3. A subaward may be provided through any legal agreement, including an agreement that you consider a contract.

e. Subrecipient means an entity that:

1. Receives a subaward from you under this award; and
2. Is accountable to you for the use of the Federal funds provided by the subaward.

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***FINAL INCURRED COST AUDIT (DECEMBER 2014)***

In accordance with 2 CFR Part 200 as amended by 2 CFR Part 910, DOE reserves the right to initiate a final incurred cost audit on this award. If the audit has not been performed or completed prior to the closeout of the award, DOE retains the right to recover an appropriate amount after fully considering the recommendations on disallowed costs resulting from the final audit.

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***LOBBYING RESTRICTIONS (MARCH 2012)***

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

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***CORPORATE FELONY CONVICTION AND FEDERAL TAX LIABILITY ASSURANCES  
(MARCH 2014)***

By entering into this agreement, the undersigned attests that the National Association of Regulatory Utility Commissioners has not been convicted of a felony criminal violation under Federal law in the 24 months preceding the date of signature.

The undersigned further attests that the National Association of Regulatory Utility Commissioners does not have any unpaid Federal tax liability that has been assessed, for which all judicial and administrative remedies have been exhausted or have lapsed, and that is not being paid in a timely manner pursuant to an agreement with the authority responsible for collecting the tax liability.

For purposes of these assurances, the following definitions apply:

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

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***NONDISCLOSURE AND CONFIDENTIALITY AGREEMENTS ASSURANCES (JUNE 2015)***

1. By entering into this agreement, the undersigned attests that the National Association of Regulatory Utility Commissioners does not and will not require its employees or contractors to sign internal nondisclosure or confidentiality agreements or statements prohibiting or otherwise restricting its employees or contractors from lawfully reporting waste, fraud, or abuse to a designated investigative or law enforcement representative of a Federal department or agency authorized to receive such information.

2. The undersigned further attests that the National Association of Regulatory Utility Commissioners does not and will not use any Federal funds to implement or enforce any nondisclosure and/or confidentiality policy, form, or agreement it uses unless it contains the following provisions:

- “These provisions are consistent with and do not supersede, conflict with, or otherwise alter the employee obligations, rights, or liabilities created by existing statute or Executive order relating to (1) classified information, (2) communications to Congress, (3) the reporting to an Inspector General of a violation of any law, rule, or regulation, or mismanagement, a gross waste of funds, an abuse of authority, or a substantial and specific danger to public health or safety, or (4) any other whistleblower protection. The definitions, requirements, obligations, rights, sanctions, and liabilities created by controlling Executive orders and statutory provisions are incorporated into this agreement and are controlling.”
- The limitation above shall not contravene requirements applicable to Standard Form 312, Form 4414, or any other form issued by a Federal department or agency governing the nondisclosure of classified information.
- Notwithstanding provision listed in paragraph (a), a nondisclosure or confidentiality policy form or agreement that is to be executed by a person connected with the conduct of an intelligence or intelligence-related activity, other than an employee or officer of the United States Government, may contain provisions appropriate to the particular activity for which such document is to be used. Such form or agreement shall, at a minimum, require that the person will not disclose any classified information received in the course of such activity unless specifically authorized to do so by the United States Government. Such nondisclosure or confidentiality forms shall also make it clear that they do not bar disclosures to Congress, or to an authorized official of an executive agency or the Department of Justice,

that are essential to reporting a substantial violation of law.

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**REPORTING OF MATTERS RELATED TO RECIPIENT INTEGRITY AND PERFORMANCE (DECEMBER 2015)**

**1. General Reporting Requirement**

If the total value of your currently active grants, cooperative agreements, and procurement contracts from all Federal awarding agencies exceeds \$10,000,000 for any period of time during the period of performance of this Federal award, then you as the recipient during that period of time must maintain the currency of information reported to the System for Award Management (SAM) that is made available in the designated integrity and performance system (currently the Federal Awardee Performance and Integrity Information System (FAPIIS)) about civil, criminal, or administrative proceedings described in paragraph 2 of this award term and condition. This is a statutory requirement under section 872 of Public Law 110-417, as amended (41 U.S.C. 2313). As required by section 3010 of Public Law 111-212, all information posted in the designated integrity and performance system on or after April 15, 2011, except past performance reviews required for Federal procurement contracts, will be publicly available.

**2. Proceedings About Which You Must Report**

Submit the information required about each proceeding that:

- 1.** Is in connection with the award or performance of a grant, cooperative agreement, or procurement contract from the Federal Government;
- 2.** Reached its final disposition during the most recent five year period; and
- 3.** Is one of the following:
  - A criminal proceeding that resulted in a conviction, as defined in paragraph 5 of this award term and condition;
  - A civil proceeding that resulted in a finding of fault and liability and payment of a monetary fine, penalty, reimbursement, restitution, or damages of \$5,000 or more;
  - An administrative proceeding, as defined in paragraph 5. of this award term and condition, that resulted in a finding of fault and liability and your payment of either a monetary fine or penalty of \$5,000 or more or reimbursement, restitution, or damages in excess of \$100,000; or
- Any other criminal, civil, or administrative proceeding if:
  - It could have led to an outcome described in paragraph 2.c.(1), (2), or (3) of this award term and condition;
  - It had a different disposition arrived at by consent or compromise with an acknowledgment of fault on your part; and
  - The requirement in this award term and condition to disclose information about the proceeding does not conflict with applicable laws and regulations.

**3. Reporting Procedures**

Enter in the SAM Entity Management area the information that SAM requires about each proceeding described in paragraph 2 of this award term and condition. You do not need to submit the information a second time under assistance awards that you received if you already provided the information through SAM because you were required to do so under Federal procurement contracts that you were awarded.

**4. Reporting Frequency**

During any period of time when you are subject to the requirement in paragraph 1 of this award term and condition, you must report proceedings information through SAM for the most recent five year period, either to report new information about any proceeding(s) that you have not reported previously or affirm that there is no new information to report. Recipients that have Federal contract, grant, and cooperative agreement awards with a cumulative total value greater than \$10,000,000 must disclose semiannually any information about the criminal, civil, and administrative proceedings.

## 5. Definitions

For purposes of this award term and condition:

- a. Administrative proceeding means a non-judicial process that is adjudicatory in nature in order to make a determination of fault or liability (e.g., Securities and Exchange Commission Administrative proceedings, Civilian Board of Contract Appeals proceedings, and Armed Services Board of Contract Appeals proceedings). This includes proceedings at the Federal and State level but only in connection with performance of a Federal contract or grant. It does not include audits, site visits, corrective plans, or A. Reporting of Matters Related to Recipient Integrity and Performance.
- b. Conviction, for purposes of this award term and condition, means a judgment or conviction of a criminal offense by any court of competent jurisdiction, whether entered upon a verdict or a plea, and includes a conviction entered upon a plea of nolo contendere.
- c. Total value of currently active grants, cooperative agreements, and procurement contracts includes—
  - I. Only the Federal share of the funding under any Federal award with a recipient cost share or match; and
  - II. The value of all expected funding increments under a Federal award and options, even if not yet exercised.

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### ***CATEGORICAL EXCLUSION (CX)***

DOE must comply with the National Environmental Policy Act (NEPA) prior to authorizing the use of federal funds. Based on all information provided by the Recipient, DOE has made a NEPA determination by issuing a CX, thereby authorizing use of funds for the defined project activities. If the Recipient later adds to or modifies the activities reviewed and approved under the original DOE NEPA determination, the Recipient must notify the DOE Contracting Officer before proceeding with the new and/or modified activities. Those additions or modifications may be subject to review by the DOE NEPA Compliance Officer and approval by the DOE Contracting Officer and may require a new NEPA determination.

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### ***SUBAWARD/SUBCONTRACT CHANGE NOTIFICATION***

Except for subawards and/or subcontracts specifically proposed as part of the Recipient's Application for award, the Recipient must notify the DOE Contracting Officer and Project Officer in writing 30 days prior to the execution of new or modified subawards/subcontracts. This notification does not constitute a waiver of the prior approval requirements outlined in 2 CFR 200, nor does it relieve the Recipient from its obligation to comply with applicable Federal statutes, regulations, and executive orders.

In order to satisfy this notification requirement, Recipient documentation must, as a minimum, include the following:

- A. A description of the research to be performed, the service to be provided, or the equipment to be purchased;
- B. Cost share commitment letter if the subawardee is providing cost share to the award;
- C. Updated budget justification, budget pages;
  - D. An assurance that the process undertaken by the Recipient to solicit the subaward/subcontract complies with their written procurement procedures as outlined in 2 CFR 200.318.
  - E. An assurance that no planned, actual or apparent conflict of interest exists between the Recipient and the selected subawardee/subcontractor and that the Recipient's written standards of conduct were followed;
- F. A completed Environmental Questionnaire, if applicable;
- G. An assurance that the subawardee/subcontractor is not a debarred or suspended entity; and
  - H. An assurance that all required award provisions will be flowed down in the resulting subaward/subcontract.

The Recipient is responsible for making a final determination to award or modify subawards/subcontracts under this agreement, but the Recipient may not proceed with the subaward/subcontract until the Contracting Officer determines, and provides the Recipient written notification, that the information provided is adequate. Should the Recipient not receive a written notification of adequacy from the Contracting Officer within 30 days of the submission of the subaward/subcontract documentation stipulated above, Recipient may proceed to award or modify the proposed subaward/subcontract.

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<sup>[1]</sup> It is DOE's position that the existence of a "covered relationship" as defined in 5 C.F.R. § 2635.502(a)&(b) between a member of a Recipient's owners or senior management and a member of a subawardee's/subcontractor's owners or senior management creates at a minimum an apparent conflict of interest that would require the Recipient to notify the Contracting Officer and provide detailed information and justification (including, for example, mitigation measures) as to why the subaward or subcontract does not create an actual conflict of interest. Recipients must also notify the Contracting Officer of any new subcontract or subaward to: (1) an entity that is owned or otherwise controlled by the Recipient; or (2) an entity that is owned or otherwise controlled by another entity that also owns or otherwise controls the Recipient, as it is DOE's position that these situations also create at a minimum an apparent conflict of interest.

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### ***FOREIGN NATIONAL PARTICIPATION (AUGUST 2021)***

If the Recipient (including any of its subrecipients and contractors) anticipates involving foreign nationals in the performance of this award, the Recipient will be required to provide DOE with specific information about each foreign national to satisfy requirements for foreign national participation. A "foreign national" is defined as any person who is not a United States citizen by birth or naturalization. The volume and type of information collected may depend on various factors associated with the award. DOE concurrence may be required before a foreign national can participate in the performance of any work under this award.

Approval for foreign nationals from countries identified on the U.S. Department of State's list of [State Sponsors of Terrorism](#) must be obtained from DOE before they can participate in the performance of any work under this award.

**The Recipient must include this term in any subaward and in any applicable contractual agreement(s) associated with this Award.**

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### ***EXPORT CONTROL RESPONSIBILITIES (AUGUST 2021)***

The Recipient shall comply with all applicable United States export control laws and regulations in the performance of this award and in the distribution and use of resulting work. The Recipient shall be responsible for obtaining the appropriate licenses or other approvals, for the shipment or transfer of export-controlled items, including technology, unless an exemption or exception applies. The Recipient shall also be responsible for obtaining the appropriate licenses or other approvals before authorizing access to any export-controlled items, including technology, by a foreign person or entity in the performance of this award. Under no circumstances may foreign entities (organizations, companies, or persons) receive access to export-controlled items, including technology, unless authorized pursuant to law or regulation.

The Recipient and all subrecipients throughout the award period of performance will maintain formal export control management programs sufficient to support all project activities. The Recipient shall be responsible for oversight of all subrecipients to assure the adequacy of their formal export control management programs.



The Recipient shall immediately report to DOE any export control violations under this award, at the prime or subrecipient level, and the corrective action(s) that will be taken to prevent future violations. The Recipient must notify DOE when an export-controlled item, including technology, is identified for use in this award. Additionally, the Recipient shall provide DOE with sufficient advanced notification of any export control considerations which may require implementation by DOE of export control mitigation measures.

The Recipient shall ensure that the provisions of this term be included in any subaward and in any applicable contractual agreement(s) associated with this award.

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***FOREIGN GOVERNMENT-SPONSORED TALENT RECRUITMENT PROGRAM  
PROHIBITION (NOVEMBER 2020)***

Recipients of DOE financial assistance awards and project participants are prohibited from participating in certain foreign-government sponsored talent recruitment programs. The purpose of this prohibition is to ensure the protection of U.S. competitive and national security interests and DOE program objectives; prevent potential conflicts of interest; and limit unauthorized transfers of scientific and technical information.

Recipients of financial assistance awards may be required to submit disclosures and/or certifications to ensure compliance with the prohibition; individual certifications and/or disclosures may be required for the Recipient and certain project participants (at the recipient, subrecipient, and contractor levels). Further, to exercise due diligence, Recipients of a financial assistance awards may be required to submit updated disclosures and/or certifications during the life of the award to ensure that neither they nor certain project participants (at the recipient, subrecipient, and contractor levels) are participating in certain foreign government-sponsored talent recruitment programs.

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***PROHIBITION ON CERTAIN TELECOMMUNICATIONS AND VIDEO SURVEILLANCE  
SERVICES OR EQUIPMENT (OCTOBER 2020)***

Recipients and subrecipients are prohibited from obligating or expending federal funds to procure or obtain; extend or renew a contract to procure or obtain; or enter into a contract (or extend or renew a contract) to procure or obtain equipment, services, or systems that use covered telecommunications equipment or services as a substantial or essential component of any system, or as critical technology as part of any system. As described in Public Law 115-232, section 889, covered telecommunications equipment is telecommunications equipment produced by Huawei Technologies Company or ZTE Corporation (or any subsidiary or affiliate of such entities).

1. For the purpose of public safety, security of government facilities, physical security surveillance of critical infrastructure, and other national security purposes, video surveillance and telecommunications equipment produced by Hytera Communications Corporation, Hangzhou Hikvision Digital Technology Company, or Dahua Technology Company (or any subsidiary or affiliate of such entities).
2. Telecommunications or video surveillance services provided by such entities or using such equipment.
3. Telecommunications or video surveillance equipment or services produced or provided by an entity that the Secretary of Defense, in consultation with the Director of the National Intelligence or the Director of the Federal Bureau of Investigation, reasonably believes to be an entity owned or controlled by, or otherwise connected to, the government of a covered foreign country.

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***IMPLEMENTATION OF EXECUTIVE ORDER 13798, PROMOTING FREE SPEECH AND RELIGIOUS LIBERTY (NOVEMBER 2020)***

States, local governments, or other public entities may not condition sub-awards in a manner that would discriminate, or disadvantage sub-recipients based on their religious character.

## ANNEX II: Sample Monthly Invoice and Progress Report

To: *NARUC/Attn: Kiera Zitelman*  
 From: *Consultant Name*  
*Consultant Address*  
 Project: NARUC-2022-129-FE3095  
 Briefing Paper on Carbon Dioxide Pipelines: State and Federal Regulatory and Enforcement Responsibilities  
 Invoice Date:  
 Billing Period Covered by Invoice:  
 Invoice Number:  
 Current Invoice Amount:

### Progress and Activities Completed

*Description of Work during the Period:*

*Deliverables Submitted:*

*Next Steps & Anticipated Milestones:*

### Budget Summary

	Current invoice	Cumulative invoiced to date	Total budgeted amount
<b>Task 1: Identify Typical Relationships</b>			
Subtotal costs	\$	\$	
% of Task completed to date	%	%	
<b>TASK 2: Conduct &amp; Summarize Interviews</b>			
Subtotal costs	\$	\$	
% of Task completed to date	%	%	
<b>Task 3: Draft and Finalize Mini Guide</b>			
Subtotal costs	\$	\$	
% of Task completed to date	%	%	
<b>Totals:</b>	\$	\$	

*Include an updated version of Annex III budget spreadsheet with each invoice, showing unit costs, hours, and total costs per labor category; direct costs; and indirect costs by task for the period being billed.*

### **ANNEX III: Budget Template**

Please complete and submit the completed budget template **as an Excel document (do not convert to PDF)**. Budget does not count towards page limit.

See file NARUC-2022-RFP129-FE3095 Annex III Budget Template.XLS.

## **ANNEX IV: Draft Outline for Briefing Paper on Carbon Dioxide Pipelines: State and Federal Regulatory, Permitting, and Enforcement Responsibilities**

1. Executive summary: two-page overview of the context leading to the paper, issues addressed, and conclusions
2. CCUS background
  - a. Definitions of terms:
    - i. Carbon capture
    - ii. Carbon utilization, including for enhanced oil recovery
    - iii. Carbon sequestration
    - iv. Dedicated CO<sub>2</sub> pipeline
      1. Transmission states: supercritical, liquid, gas
      2. Interconnection
      3. Common carrier pipeline owner/operator
  - b. Current market size and potential or CCUS to contribute to U.S. federal and state decarbonization goals
  - c. Barriers to CCUS deployment
    - i. Technical feasibility of capture systems
    - ii. Cost of capture
    - iii. Uneven state-level incentives
    - iv. Lack of opportunities for utilization
    - v. Lack of transportation infrastructure
  - d. Review of relevant studies of optimal locations for a buildout of CCUS infrastructure
  - e. Carbon dioxide pipeline primer
    - i. How CO<sub>2</sub> is transported depending on end use, whether non-pipeline transportation options are feasible
    - ii. Pipeline materials and average leakage rates
      1. Conversion of hydrocarbon pipelines to CO<sub>2</sub> pipelines
    - iii. Safety considerations
      1. Incidents of pipeline failure and release of CO<sub>2</sub>
      2. Health and environmental impacts of CO<sub>2</sub> pipeline leaks
      3. Non-CO<sub>2</sub> elements appearing in pipelines and associated risks
3. CO<sub>2</sub> pipeline regulation overview
  - a. Process through which CO<sub>2</sub> pipelines are sited, permitted, built, and operated
  - b. Lack of clear role for federal agencies to economically regulate CO<sub>2</sub> pipelines (FERC, BLM, Interstate Commerce Commission, Surface Transportation Board)
  - c. Regulatory treatment of CO<sub>2</sub> as a gas vs. liquid, concentration of CO<sub>2</sub> and compression threshold to trigger PHMSA regulation under Hazardous Liquid Pipeline Act of 1979 and other statutes
  - d. PHMSA responsibilities for safety regulation
    - i. Summary of recent PHMSA activities: rulemaking to update standards for CO<sub>2</sub> pipelines
    - ii. Impact areas for CO<sub>2</sub> pipeline ruptures
  - e. State responsibilities for permitting, siting, economic regulation, and safety enforcement

- i. Options for CO<sub>2</sub> pipelines to choose to become a common carrier (e.g., Texas, others)
    - ii. Lack of specific state-level tariffs for CO<sub>2</sub> pipelines
    - iii. State-specific law governing pipeline developers' ability to exercise eminent domain
    - iv. Survey of existing state laws governing permitting and siting of CO<sub>2</sub> pipelines
    - v. Summary of pending and expected state legislature actions related to CO<sub>2</sub> pipelines
  - f. Other federal responsibilities for economic and/or safety regulation and enforcement
  - g. Matters of blurred or unclear jurisdictional authority
- 4. Questions for future policy and regulatory decision-makers
  - a. For PHMSA:
    - i. How should CO<sub>2</sub> be defined in regulations?
    - ii. Should odorant be injected into CO<sub>2</sub> pipelines?
    - iii. How should the potential impact areas for pipeline ruptures be set?
    - iv. How should PHMSA require CO<sub>2</sub> pipeline operators to plan for emergencies and coordinate with local first responders?
    - v. How should PHMSA treat the conversion of existing hydrocarbon pipelines to CO<sub>2</sub> pipelines?
    - vi. How should impurities be addressed?
  - b. For state PUCs and other state-level regulators:
    - i. What factors should states consider in issuing siting permits to CO<sub>2</sub> pipelines?
    - ii. What additional state legislative actions need to occur in order to ensure alignment for interstate CO<sub>2</sub> pipeline projects?
    - iii. How to address permitting and siting for intermodal, loading, and unloading facilities connected to CO<sub>2</sub> pipelines?
    - iv. Should PUCs set rates for CO<sub>2</sub> pipelines? What factors should be considered? Is new legislation required to for state PUCs to set rates?
    - v. Is interconnection guidance or special tariffs needed for CO<sub>2</sub> pipelines?
    - vi. Are state PUCs able to adequately inspect and enforce safety regulations for CO<sub>2</sub> pipelines?
    - vii. Is the EPA's Class VI permitting program, which offers states the choice to apply for state primacy, a reasonable model for CO<sub>2</sub> pipeline regulation?
  - c. For DOE and other federal regulatory agencies:
    - i. How will PHMSA guidance impact ongoing RDD&D activities at DOE?
    - ii. How should a federal agency set rates for interstate CO<sub>2</sub> pipelines where states may be prevented from setting such rates?
- 5. Implications for dedicated hydrogen pipelines
  - a. Applicability of siting, regulatory, and enforcement responsibilities around CO<sub>2</sub> pipelines to current dedicated hydrogen pipelines
  - b. Challenges and questions specific to dedicated hydrogen pipelines
- 6. Conclusion

- a. DOE/DOT-funded research projects to address questions
- b. Areas for further research by NARUC and/or DOE/DOT